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A PROGRAMME FOR CHANGE

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COMMUNICATION FROM THE COMMISSION
TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Construction 2020

Strategy for the sustainable
competitiveness of the construction
sector and its enterprises

EN

Enterprise
and Industry



EUROPEAN COMMISSION

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**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
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**Strategy for the sustainable competitiveness of the construction sector and its
enterprises**

{SWD(2012) 236 final}

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Strategy for the sustainable competitiveness of the construction sector and its enterprises

1. INTRODUCTION

The construction sector plays an important role in the European economy. It generates almost 10% of GDP and provides 20 million jobs, mainly in micro and small enterprises. Construction is also a major consumer of intermediate products (raw materials, chemicals, electrical and electronic equipment, etc.) and related services. Because of its economic importance, the performance of the construction sector can significantly influence the development of the overall economy.

The quality of construction works also has a direct impact on the quality of life of Europeans. Not least, the energy performance of buildings and resource efficiency in manufacturing, transport and the use of products for the construction of buildings and infrastructures have an important impact on energy, climate change and the environment.

The competitiveness of construction companies is therefore an important issue not only for growth and employment in general but also to ensure the sustainability of the sector.

The sector could contribute significantly to job creation¹ by increasing its activity in some very promising areas, such as the renovation of buildings and in infrastructure, with support through, for example, appropriate policies to promote demand but also to encourage investment. Thus, the construction sector plays an important role in the delivery of the Europe 2020 Strategy on smart, sustainable and inclusive growth. Furthermore, the Commission's Communication on the 'Energy Roadmap 2050'² points out that higher energy efficiency in new and existing buildings is key for the transformation of the EU's energy system.

A sustainable construction sector plays a crucial role for reaching the EU's long term 80-95% greenhouse gas emission reduction objective. According to the Roadmap for moving to a competitive low carbon economy in 2050³ the cost-efficient contribution of the buildings sector would be around 40 to 50% reduction in 2030 and around 90% in 2050. The needed investments would contribute substantially to the competitiveness of the European construction sector. The sector has also an important role to play in adaptation to climate change and resilience to natural and man-made disasters by promoting long term disaster proofed investments.

However, the construction sector is confronted by a number of structural problems, such as a shortfall of skilled workers in many companies, low attractiveness to young people due to the working conditions, limited capacity for innovation and the phenomenon of undeclared work. More widely, the current situation of this industry can be characterised by three basic elements.

¹ It is estimated that 275 000 new jobs could be created in the sector by 2020. CEDEFOP 'Skills, Demand and Supply' 2010, p. 96 - http://www.cedefop.europa.eu/en/Files/3052_en.pdf.

² COM(2011) 885/2.

³ COM(2011) 112.

Firstly, the construction sector is one of the hardest hit by the financial and economic crisis (building and infrastructure works fell by 16% between January 2008 and November 2011 across the EU-27⁴). Secondly, there is increased competition from non-European operators not only in international markets, but also within the internal market, particularly with regard to infrastructure projects. This external competition does not always operate fairly; EU companies are often faced with far greater costs than non-European companies. Finally, the energy and environmental issues have created a new dynamic among companies and stimulated various public-sector initiatives which have become key factors in market competition. Significant progress has already been made by construction enterprises but achieving the EU's climate, energy and environmental objectives will require significant changes that will be difficult for the sector to tackle without appropriate policy support.

The present Communication identifies the main challenges that the sector faces today and up to 2020 in terms of investment, human capital, environmental requirements, regulation and access to markets, and proposes initiatives to support the sector for this purpose. In the short term, emphasis is put on the need to support growth and employment in the construction sector in response to the crisis. In the long term, the challenges the industry faces will require a concerted and coordinated approach at European level to improve the functioning of the value chain, particularly through voluntary partnerships between the private and public sectors and an appropriate regulatory framework, where necessary.

2. STATE OF PLAY AND KEY CHALLENGES

The diversity of the activities within each branch of the construction sector results in contrasting realities in terms of socio-economic, organisational, cultural and technological issues and adaptation to new regulations and market opportunities.

There are global challenges that can become enablers of sustainable growth in the medium term provided appropriate measures are taken now. This could result in the development of a range of services to address issues such as health and safety, energy efficiency, green building, disaster resilience, indoor climate, re-use/recovery/recycling and design to fit. If properly addressed, these challenges could also open up new market opportunities.

2.1 The general macroeconomic context

The **financial crisis** has particularly affected the construction sector; there have been severe drops in demand especially in the private residential market but also in other markets, e.g. the infrastructure market. Trends differ from one Member State to another. In some, the burst of the housing bubble was one of the triggers and has continued to significantly reduce activity in the sector⁵. In others, the sector suffers particularly from the contraction of credit markets. The constraints on public spending due to the crisis will put further pressure on investments in infrastructure works.

Some countries have invested in **stimuli packages** as a response to the crisis, for example with up-front investments in infrastructure projects, a reduced VAT rate for new construction and/or renovation of buildings, preferential interest rates for mortgages, etc. However only those approaches that include measures aiming at upgrading skills and qualifications, innovation and a 'green' economy will also have lasting effects on the competitiveness of the

⁴ Eurostat press release 169/2011 of 17 November 2011.

⁵ For instance, the production index adjusted by working days decreased by 49% in Spain and by 76% in Ireland over the period from the 1st quarter of 2007 up to the 2nd quarter of 2011 — Source: Eurostat.

sector. This highlights the need for an appropriate policy formulation that stimulates growth and employment on the short term but also a restructuring of the construction sector in the long term.

2.2 The performance of the value chain

The markets of the EU construction sector and the sector itself are **highly fragmented**, with many micro-enterprises, large differences between Member States in the performance of the sector and considerable difficulty in spreading good practices. Better value-chain integration would significantly increase the scope for spill-over innovation effects from collaboration.

On-site construction, and to a lesser extent the manufacturers of construction products, will increasingly be confronted with the **need for skilled labour**. The huge number of skilled people retiring between now and 2020⁶, representing over two thirds of jobs in construction, industry and transportation, will also need to be replaced. The chronic shortage of skilled labour can be explained, on the one hand, by the low attractiveness of the sector for young people and, on the other, by the growing need for skills corresponding to specific qualifications, which education and training (as well as the employment market) have difficulty in satisfying. The transition to a resource-efficient and low-carbon economy will also bring important structural changes in the construction sector, which will have to adapt and anticipate the needs for skills and competences in these areas. This is especially the case regarding the preparation of the labour force for the construction of ‘near zero energy buildings’, whether this concerns new or renovated buildings. The deployment of enabling technologies and the use of flexible work-organisation practices will also require changes in skills and qualifications in construction.

Spending on research and innovation remains quite low compared with industry in general. This can however be explained by the intensive manpower requirements and the fact that the main interest of construction enterprises is to integrate available external technological developments into their activities. The sector will probably intensify its efforts in research and innovation to cope with the high consumption of inputs (such as metallic and non-metallic minerals, chemicals and wood) and the production of large quantities of waste. Moreover, the industry is developing more and more materials that are easier to collect and reuse and systems or ‘building solutions’ that facilitate the ‘deconstruction’ of the works and the re-use of materials. These efforts are in line with the new basic requirement listed in the Construction Products Regulation concerning sustainable use of natural resources, as well as with the Raw Materials Initiative (RMI), through the possible development of best practices in the collection and treatment of waste, especially in recovery/reuse of valuable materials from waste, and through support for research on economic incentives for recycling/recovery. However, EU and national initiatives need to accelerate the uptake of innovative solutions and best practices.

2.3 The low-carbon economy

As announced in the **recast of the Energy Performance of Buildings Directive**⁷, the introduction of Nearly Zero Energy Buildings (NZEB)⁸ is going to be a major challenge for the construction sector. The market has several years to adapt but support is required for all

⁶ CEDEFOP ‘Skills, demand and Supply’ 2010 p. 93 http://www.cedefop.europa.eu/en/Files/3052_en.pdf

⁷ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

⁸ For more details on the relevant provisions, please see Directive 2010/31/EU, Articles 2.2 and 9.

market actors, ranging from public bodies (which need to implement two years in advance) to construction companies, designers, developers, etc. Adaptation will also be required for areas such as financing structure, procurement, education and marketing.

While the number of **‘low-energy’ buildings** is growing, a critical mass has yet to be reached and efforts to improve energy efficiency and to integrate renewable energy sources are progressing slowly. The enforcement of the regulatory framework, together with appropriate fiscal policies, should help to achieve a critical mass.

Also, in the area of **renovation of existing buildings**, more needs to be done to increase energy savings. Moreover, the number of existing building undergoing extensive renovation is relatively modest. The ‘Strategy for a competitive, sustainable and secure energy’⁹, the ‘Roadmap for moving to a competitive low-carbon economy in 2050’¹⁰ and the ‘Energy Roadmap 2050’¹¹ therefore put emphasis on the need for more action in the field of buildings, especially favouring renovation. This line will have to be pursued.

Transport infrastructure has an enormous environmental impact as well as substantial energy and raw materials consumption and waste generation. Infrastructure networks must make a major contribution towards a more sustainable Europe.

2.4 Competition between construction enterprises within the EU and in international markets

Competition in EU markets has improved through the application of public procurement directives, the implementation of the services directive and the adoption of the European design and construction standards (‘Eurocodes’). However, EU companies engaged in this competition are not always on an equal footing, especially with **non-European companies** which are often subject to less stringent social and environmental requirements and benefit from state aid. Member States should ensure that EU companies and non-EU companies compete for public contracts on an equal footing without jeopardising EU social and environmental achievements.

The situation in **international markets** is even more difficult. Industry often faces serious difficulties not only from the technical point of view but also in terms of the conditions of competition in other countries, e.g. China, which limit the opportunities to access these markets. However, as European construction markets are expected to grow at a slower rate than the emerging markets, the sector will need to develop and maintain a stronger global perspective. It is important for EU construction companies that third countries open their markets for EU companies to compete on contracts. The EU should strengthen its power to engage non-EU countries in negotiations to open their commercial as well as procurement markets further, to investigate possible discriminatory procurement practices and to start consultations with the country concerned to solve market-access disputes.

3. EUROPEAN STRATEGY FOR THE SUSTAINABLE COMPETITIVENESS OF THE CONSTRUCTION SECTOR

In order to respond to the key challenges outlined above, a European strategy has been defined for the next decade. It is intended to complement the strategies developed by the

⁹ COM 2010 (639) final.

¹⁰ COM 2011 (112) final.

¹¹ COM 2011 (885) final.

enterprises of the construction sector themselves to improve their competitiveness and to respond to societal challenges.

This strategy focuses on five key objectives: (a) stimulating favourable investment conditions; (b) improving the human-capital basis of the construction sector; (c) improving resource efficiency, environmental performance and business opportunities; (d) strengthening the Internal Market for construction; (e) fostering the global competitive position of EU construction enterprises. Each objective covers different key challenges; for example, favourable investment conditions are necessary for stimulating growth, research & innovation and the low-carbon economy. Similarly, a sound human-capital basis is essential to improve the performance of the value chain and to adopt innovative solutions, in particular for a low-carbon economy. On the one hand, the strategy suggests recommendations that could address the short to medium-term economic and employment challenges faced by the construction sector. On the other hand, it presents a number of recommendations with a long-term perspective to ensure durable effects on the competitiveness of the sector.

3.1 Stimulating favourable investment conditions

Building renovation and TransEuropean Networks projects can revitalise the growth of the construction sector while helping achieve the objectives of the European Energy, Transport and Cohesion Policies. Moreover, combating late-payment practices will improve the financial viability of construction contractors, in particular craft and small builders, as well as their access to credit. In the long term, the construction sector should increase its capacity to innovate with a view to improving its productivity as well as the added value and the environmental performances of all branches of the value chain.

3.1.1 Short-term measures

Particular emphasis should be put on encouraging the activity of **building renovation and infrastructure maintenance**, which represents an important share of total construction employment and production. In particular, current building renovation rates¹² and practices in terms of energy-efficiency improvement are insufficient to achieve EU 2020 energy-saving targets. Adopting the proposed targets of annually renovating 3% of central government buildings¹³ (a doubling of the current renovation rate) as well as 2% of the whole building stock¹⁴ to cost-optimal levels would not only contribute to achieving the targets but also ensure economic growth and employment at local level throughout the EU. However, the acceptance of these improvements necessitates overcoming a number of regulatory, economic and financial barriers.

First of all, Member States should properly **implement and enforce the Energy Performance of Buildings Directive**¹⁵. In some Member States, a low level of ambition and a failure to enforce building energy codes hamper energy efficiency in buildings and thus fail to stimulate the construction sector.

Fiscal incentives¹⁶ and **financial support measures** are well accepted by market operators and boost the renovation of existing buildings. However, national schemes and their impact vary

¹² The EU average rate of renovation of existing building is 1.2% per year. .

¹³ Compromise text between European Parliament and Council for a new Energy Efficiency Directive (still to be approved)

¹⁴ Roadmap to a resource-efficient Europe [COM(2011) 571].

¹⁵ Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings (recast), OJ L 153, 18.6.2010, p. 13.

¹⁶ Such as reduced VAT rates, preferential interest rates, CO² and energy tax, targeted subsidies, etc.

greatly. Therefore, an exchange of experiences could be very helpful in understanding potential effects from different angles as well as the risks of imperfect implementation and unintended consequences. Complementarities between these national schemes on the one hand, and EU and private funds and financial instruments on the other, should also be sought in order to optimise the leverage effect.

The EU provides support and funding through various mechanisms and the Member States should make more use of them. *Structural and Cohesion Funds* (2007-2013) may be used for energy-efficiency and renewable-energy investments not only in public and commercial buildings but also in existing housing. In addition, financial-engineering instruments such as JESSICA offer the possibility to invest in small urban development and regeneration projects that would not be financed through normal market mechanisms. Equity funds and loan guarantees from the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and the European Energy Efficiency Fund (EEEF) together with project development assistance to final recipients, such as ELENA, also provide opportunities to leverage public grants.

A scheme that could stimulate investments in resource-efficient renovation is the development of design-build-operation services for *small renovation projects with contractual guarantees of building performances*. This market segment is becoming interesting not only for energy-services companies (ESCOs) but also for specialised small contractors that could potentially also offer performance guarantees for a range of building services. Public intervention could support the development of such services, in particular in public procurement and in the residential sector, together with the development of insurance products that could cover the technical risks related to performance guarantees. In particular, public authorities should ensure the integration of active energy management and smart metering in renovation.

Finally, it is important that construction enterprises can access their own financial resources within a reasonable time. The new *Late Payment Directive*¹⁷ introduces more stringent provisions, in particular through harmonising the period for payment by public authorities to businesses, increasing the statutory interest rate for late payment and allowing businesses to obtain the reimbursement of their recovery costs. In the context of the revision of the EU Public Procurement Directives, the Commission proposed that Member States should be able to stipulate that sub-contractors may request direct payment by the contracting authority for supplies, works and services provided to the main contractor in the context of the contract performance.

The Commission:

- will present by the end of 2012 an analysis of various EU and national financial instruments supporting energy efficiency in buildings, possibly including recommendations as to how public funding could be better utilised to stimulate building renovation;
- will present in 2013 the preliminary conclusions of an ongoing pilot project aiming at investigating the scope for deploying insurance schemes that could cover contractual performance guarantees and cross-border services, especially for small building contractors;

¹⁷ Directive 2011/7/EU of the European Parliament and of the Council on combating late payment in commercial transactions (recast), OJ L 48/1, 23.2.2011.

- will launch in 2012 an information campaign for enterprises on combating late payment in commercial transactions in all Member States
- will implement in 2012, in connection with the Late Payment Directive, a pilot project for the rapid and efficient enforcement of outstanding claims by SMEs operating across borders.

Member States are invited:

- to develop or strengthen appropriate programmes for repair, maintenance and renovation projects with ambitious sustainability targets, including examining the scope for relevant fiscal and financial instruments (reduced VAT rate, targeted subsidies, etc.) and for credit mechanisms for renovation projects with ambitious sustainability targets.
- to promote the use of financial instruments and project-development assistance schemes offered by the Structural Funds, EIB, EBRD and EEEF for small renovation projects with contractual guarantees on building performances, including the frontloading of Structural Funds for energy-efficient buildings.

3.1.2 Medium to long-term measures

The new proposal for an EU Cohesion Policy for 2014-2020¹⁸ places even greater emphasis on supporting investments related to EU climate and energy targets and suggests nearly doubling the amount allocated to sustainable energy in the current period. It is proposed that a significant share of the Structural and Cohesion Funds be allocated to investments supporting the shift towards the low-carbon economy, in particular energy efficiency and renewable energy sources, including for building renovation, and financial instruments will most likely play a more important role in the future for tailored energy-efficiency and renewable-energies investments in urban infrastructure and the building sector.

The development of a 'Core Network', as proposed by the European Commission, ensuring efficient multi-modal transport links between EU capitals and other main cities, ports, airports and other main economic centres is essential for the economy. The European Commission presented a new package of measures on 19 October 2011 designed to create a favourable framework for the development of *Trans-European Networks for Transport (TEN-T)*. This package includes the revised Guidelines for the trans-European Network of Transport, the 'Connecting Europe Facility' with a total budget of 50 billion euros and a proposal for the early implementation of project bonds with the European Investment Bank.

The objective is to have a 'comprehensive' network in place by 31 December 2050 at the latest, whereas the core network is to be implemented as a priority by 31 December 2030. The core network corridors, as proposed by the European Commission on 19 October 2011, and their 'platforms' will bring together the Member States concerned, as well as the relevant stakeholders, e.g. infrastructure managers and users, to guarantee coordination, cooperation and transparency. In addition to these proposals, a minimal alignment of the national administrative procedures will be necessary to ensure smooth implementation of cross-border sections of the networks.

¹⁸ COM(2011) 615 final.

Research and innovation activities should combine technology-oriented activities¹⁹ with socio-economic research into market-based and demand-side instruments (training, public procurement, standardisation, insurance, etc.) in order to accelerate the transition from research to the exploitation of innovative solutions. This would require a broader partnership with various interests within the initiatives that will be financed by various EU financial instruments in order to achieve a wider market perspective and to create a critical mass. In this respect, existing initiatives such as the Energy-efficient Buildings Public Private Partnership, Culture Heritage, Smart Cities and Communities and **reFINE** (research for Future Infrastructure Networks in Europe) could represent a relevant basis for developing such partnerships. EU Cohesion Policy can provide support for research and innovation in these areas under national programmes and will also continue to place a strong emphasis on enhancing the competitiveness of SMEs, including their use of ICT. In particular, the development of innovation strategies for smart specialisation, as proposed by the Commission as a precondition for the use of Structural Funds in the next programming period 2014-2020, will contribute to delivering more targeted Structural Funds support and a strategic approach to harnessing the potential for smart growth in all regions²⁰.

The Commission:

- has proposed in the context of the Cohesion Policy for 2014-2020 that a significant share of the Structural and Cohesion Funds be effectively allocated to investments supporting the shift towards the low-carbon economy, in particular energy efficiency and renewable energy sources, including for building renovation, and will continue to encourage the use of revolving funds in this area to ensure greater leverage;
- will develop a core set of requirements for construction works to be satisfied by cross-border sections of TENs projects in order to ensure a minimal alignment at a technical level of the respective national permit-granting processes;
- will organise, in spring 2013, a conference on innovation in the construction sector to identify the technological gaps along the entire value-chain and to define an action plan to address them.

The Member States are invited:

to develop with other Member States and the private sector joint co-ordinated initiatives combining research, technological development, innovative procurement, certification, insurance, interregional clusters, etc. to speed up the market uptake of new knowledge and technologies at EU and regional levels. The EU will support these initiatives with Horizon 2020 and Competitiveness of enterprises and SMEs (COSME) 2014-2020, not only with direct grants but also with financial instruments to improve access to finance for SMEs in the form of equity and debt. National and regional authorities are invited to ensure an efficient and complementary use of the various EU sources of support, including Cohesion Policy funds provided the related operational programmes allow for such measures

¹⁹ These should cover a broad range of domains such as new materials, the use of ICT, recycling/recovery of construction and demolition waste, comfort in buildings, etc.

²⁰ <http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm>.

3.2. Improving the human-capital basis of the construction sector

Nowadays, there is a significant shortfall of qualified workers for on-site construction enterprises and to a lesser extent for the construction products' industry. Moreover, education and training systems across Europe display great variety in the degree of centralisation or decentralisation, the structure of training provision, the role of the social partners, financial structures and curriculum content.

It is necessary to better anticipate future skills and qualification needs, to attract a sufficient number of students to relevant construction professions and to create the conditions for a better working environment and career management, for a greater mobility of construction workers and for wider provision of cross-border services. This has to take account of the impact of the ageing of the EU workforce and of the specific occupational health and safety situation of the sector.

3.2.1 Short-term measures

The BUILD UP Skills initiative carried out under the Intelligent Energy Europe Programme aims at adapting the vocational education and training (VET) system to skills and qualifications needs in terms of energy efficiency and renewable energy sources. BUILD UP Skills will allow the definition of national qualification roadmaps to 2020 and support the setting up of large-scale training and certification schemes as well as qualification design to upgrade existing structures, where relevant, with the support of funding instruments like the European Social Fund and the Lifelong Learning Programme and its proposed successor programme, Erasmus For All. It would increase the number of qualified on-site workers on the market and improve the confidence of building-owners to invest in energy improvements.

This initiative could also serve as a basis for identifying curricula, training programmes or qualifications needs in other areas related to construction and sustainable development (e.g. the industrialisation of the construction process, the use of innovative or unconventional construction products and techniques, the recourse to ICT in building management systems, etc.).

The Commission:

- will carry out an evaluation of the BUILD UP Skills initiative and in particular assess whether it is worthwhile extending the scope of the first initiative to include additional categories of building professionals or to other qualification needs in relation to the construction process and sustainable development.

Member States, construction organisations and education institutions are invited:

- to negotiate collective agreements to support skill development in relation to the BUILD UP Skill initiative or other similar schemes.

3.2.2 Medium to long-term measures

The construction sector should improve its ability to identify and anticipate skill needs from a strategic perspective and to tailor training and qualification-design programmes accordingly. Platforms exist in some countries to identify future employment and skills needs with an indirect impact on the construction sector. An initiative at European level with the support of social dialogue could improve the exchange of information on these needs, including the sector's readiness to adopt resource-efficiency practices and to supply sustainable buildings, as well as the ability of education systems to meet these needs.

In this context, the European Commission will support a feasibility study by the European social partners on the establishment of a European Sector Skills Council. European Sector Skills Councils are networks of national observatories on labour-market and skills analysis at a sectoral level, which, under the steering of sectors' representatives, European social partners, and with the participation of representatives of education and training providers, exchange information and good practices in order to draw recommendations on the evolution of skills and jobs.

Also in 2012, the Commission will test the feasibility in sustainable construction of Sector Skills Alliances between VET providers, businesses and other stakeholders, with the aim of delivering appropriate, updated and new curricula and courses as well as innovative ways of delivering VET.

Promotion and deployment of instruments developed in the context of EU policy on continuing education should encourage the mobility of skilled workers. The Posting of Workers Directive establishes a hard core of clearly defined terms and conditions of work and employment for minimum protection of workers that must be complied with by the service provider in the host country. The Directive thus provides an adequate level of protection for posted workers.. To avoid any abuse and circumvention of rules, and to avoid 'social dumping' where non-host Member State service providers can undercut local service providers because their labour standards are lower, the enforcement of the Posting of Workers Directive is to be improved, in particular through better information on the applicable working conditions, more efficient administrative cooperation and information exchange between inspection authorities, more effective inspections and the introduction of joint and several liability for the wages of posted workers.

Finally, the sector faces a dual challenge due to demographic changes. On the one hand, EU construction enterprises should look for strategies to counterbalance the declining number of young EU workers entering the sector and the considerable number of workers retiring in the next years; on the other, working conditions should be improved to ensure higher life expectancy. This dual challenge require a more attractive working environment and more attention to health and safety issues in the future, to avoid early retirements due to occupational accidents or diseases.

The Commission:

- will promote in the context of the EU Social Dialogue initiatives aimed at adapting vocational education and training to the future qualifications and skills needs of the construction sector, including in relation to resource efficiency, identifying basic requirements for skills in specific branches and facilitating the mutual recognition of qualifications;
- will support the European sectoral social partners of the construction industry to create a European sector skills council for the construction sector;
- will encourage them to develop initiatives in areas such as energy and resource efficiency in buildings, health and safety, quality standards and training, including apprenticeship for young people. These initiatives may take the form of information campaigns and training and include, depending on the national context, joint management of funds
- will, through the Lifelong Learning Programme, test the feasibility of Sectoral Skills Alliances in sustainable construction, i.e. partnerships between VET providers, businesses and other stakeholders, with the aim of delivering appropriate curricula or

VET qualifications as well as innovative ways of delivering VET.

Member States, social partners in the construction industry and education institutions are invited:

- to act swiftly to adopt the newly proposed directive²¹ on the enforcement of Directive 96/71/EC on the posting of workers in the framework of the provision of services;
- to establish partnerships for supporting appropriate vocational education and training schemes at national and regional levels, which respond to current and emerging needs of the construction sector, in particular to enhance management capacity and the deployment of ICT;
- to launch and support campaigns to make the construction sector more attractive to talented people.

3.3 Improving resource efficiency, environmental performance and business opportunities

The Roadmap to a Resource-Efficient Europe²² outlines the significant impact of construction on natural resources, energy, the environment and climate change. Significant improvements in construction activities and construction works all over their life cycle have the potential to contribute to a competitive construction sector and to the development of a resource and energy efficient building stock, with all new buildings being near zero energy consumers and materials resource-efficient.

Improvements in construction activities and construction works open up additional business opportunities, including for SMEs as the action needed may depend on local conditions and require individual solutions. As already stated in the Roadmap to a Resource-Efficient Europe, the Commission will come forward in 2013 with a communication on sustainable buildings, where actions to support a resource efficient sector will be further defined and developed.

In order to allow the concept of sustainable construction to be better understood and more widely used harmonised indicators, codes and methods for assessments of environmental performances will need to be developed for construction products, processes and works. These should ensure a coherent and mutually recognised interpretation of the performances and maintain the proper functioning of the Internal Market for construction products and services.

The Commission will propose approaches to mutual recognition or harmonisation of the various existing assessment methods, also with a view to making them more operational and affordable for construction enterprises, the insurance industry and investors. This initiative will build on existing platforms, such as the CEN Construction Network, guides such as the JRC's guide to Life Cycle Thinking and Assessment, and European research projects such as SuperBuildings and Open House.

This work will furthermore contribute to the development of a more systematic approach to assessing the sustainability dimensions of projects to be financed by public support schemes, including EU-wide models for cost-benefits analysis. Pilot projects developed within the

²¹ COM(2012) 131 final.

²² COM(2011) 571 final.

context of Green Public Procurement and regional policy could provide planning and contracting authorities with the appropriate tools, especially for the renovation of existing buildings and the upgrading of transport infrastructure.

Industry stakeholders reported during the public consultation that some construction projects may be hampered by the national authorisation process, e.g. delays due to public opposition, expropriation issues and the need to obtain several different permits including environmental ones. Such issues were identified in the context of the ongoing review of the Environmental Impact Assessment (EIA) Directive²³, which aims inter alia at simplifying and streamlining existing procedures, and will therefore have a positive impact in this regard, as the EIA is part of the authorisation process. The majority of obstacles result from the various provisions of national legislations and administrative procedures regulating the permit-granting process. This may impede the formation of a level playing field and the dissemination of environmental technologies. Whereas it is recognised that these legislations often include areas of exclusive competence of Member States (e.g. property issues), the Commission will encourage the exchange of information and promotion of best practices, e.g. through voluntary adoption of codes of conduct covering issues such as the duration and steps of the permit-granting process or the establishment of an arbitration process between administrations.

Finally, the goal of re-using, recycling and/or recovering 70% of construction and demolition waste by 2020 according to the Waste Framework Directive represents a valuable business opportunity for the construction value chain. Better and clearer definitions of waste, harmonised registration conditions for transporting waste and harmonised rules on the characteristics of construction products regarding material use, durability and environmental compatibility could be beneficial to industry.

The Commission:

- will present initiatives to improve the mutual recognition of environmental performances and risk-assessment methods, in particular within the context of EU standardisation activities and insurance schemes;
- will support the development of an EU-wide life cycle cost-benefits model for Green Public Procurement and for sustainable development principles in regional policy;
- will assess hindrances resulting from national legislation governing the authorisation process for major construction projects, with a view to identifying good practices for streamlining the procedures (e.g. codes of conduct for the permit-granting process, arbitration process between administrations);
- will develop harmonised rules on the declaration of the performance characteristics of construction products in relation to a sustainable use of natural resources in the context of the Construction Products Regulation.

Member States are invited:

- to evaluate the performance of various construction sub-sectors in terms of competitiveness and sustainable development at national and regional levels.

²³ Directive 85/337/EEC, as amended, on the assessment of the effects of certain public and private projects on the environment.

3.4 Strengthening the Internal Market for Construction

The construction sector is highly regulated at many levels (e.g. the products, works, professional qualifications, occupational health and safety, environmental impact) and many aspects are Member States' competences. In order to ensure a better functioning of the Internal Market for construction products and services, it is important that the legal framework is as clear and predictable as possible and that administrative costs are proportionate to the objectives pursued.

This will require a more systematic analysis of the various regulatory approaches and administrative provisions that govern the implementation of EU legislation concerning the construction sector. This analysis will show how various EU legal acts interact at European and national levels and if clarification or additional measures are needed to reduce the administrative burden on construction operators and improve the functioning of the Internal Market in the construction sector. Regarding cross-border services, 'performance checks' that were made in 2011-2012, have assessed the cross-impact of various EU legal acts affecting construction enterprises, thus identifying certain misapplication of EU legislation and needs for clarification and new measures to be taken. It will generate recommendations for accelerating the process of convergence of different national and regional regulatory approaches.

Eurocodes could facilitate this convergence process. They constitute a set of design standards and the most up-to-date codes of practice applicable to all principal construction materials, all major fields of structural engineering and a wide range of types of structures and products. It is a flexible tool as each country has the option of adapting the Eurocodes to their specific conditions and risk assessment regarding climate, seismic risk, traditions, etc. The Commission strongly encourages the EU Member States to take on board the Eurocodes as their national design codes²⁴ to ensure that buildings are disaster proofed .

Communication and dissemination activities, such as the BUILD UP web portal²⁵ could also support the implementation of legislation and the uptake of new market solutions.

The Commission:

- will undertake 'fitness checks' of EU legislation to identify excessive administrative burdens, overlaps, gaps, inconsistencies and obsolete measures;
- will target construction as a priority in the follow up of the Communication on the implementation of the Services Directive "A partnership for a new growth in services"²⁶;
- will present a report on the implementation of Eurocodes in Member States in response to the Commission Recommendation 2003/887/EC; based on the results of this report, it will then propose action to strengthen or, if need be, enforce the use of Eurocodes in Public Procurement and other instruments., such as national risk assessments and management plans.

Member States are invited:

- to develop effective tools for market surveillance in relation to the implementation of

²⁴ Commission Recommendation 2003/887/EC of 11 December 2003.

²⁵ www.buildup.eu .

3.5 Fostering the global competitive position of EU construction enterprises

Since 2006, in the context of its international trade negotiations, the EU has been increasingly seeking ambitious market-access commitments by other trading partners on trade in services and public procurement, especially in the public-works area. One of the latest achievements is the opening up of the Korean concession contracts to EU suppliers in the EU-Korea Free Trade Agreement.

Specific intercontinental fora with Africa and Latin America on sustainable construction could stimulate a transformation of public procurement in these markets towards performance criteria, sustainability and cost-effectiveness.

The EU-Africa partnership for transport infrastructure²⁷ provides opportunities to improve transcontinental connections and create a more reliable and safer transport system.

As for the financing of infrastructure, various EU financial instruments and cooperation funds could moreover support the implementation of relevant measures.

The EU initiative ‘Small Business, Big World’ will offer relevant information, advice and assistance to small specialised contractors in their attempt to access international markets and to find potential business partners. The European Regional Development Fund (ERDF) also facilitates the development of new business models for SMEs, in particular for internationalisation.

There is considerable interest in the use of EN Eurocodes outside the EU by countries that want to replace or update their national standards based on technically advanced codes, or which are interested in trading with the European Union and EFTA Member States. The EU — Russia Regulatory dialogue has made significant progress in this respect.

The Commission:

- has proposed a legislative initiative²⁸ with a view to ensuring the opening up of third countries’ procurement markets and a level playing field between EU companies and their competitors from abroad;
- will continue to insist on securing ambitious market access commitments from partner countries in trade negotiations, regarding access to both commercial and procurement markets.
- will liaise with the European Investment Bank to enhance the scope for using EU financial instruments in support of transcontinental connections;
- will provide financial support for technical assistance to aid the internationalisation of small specialised contractors;
- will develop cooperation with third countries, in particular Africa and Latin America, but also in the context of the EU-Russia Regulatory dialogue, the EU Neighbourhood policy and the Euro-Mediterranean Partnership, concerning sustainable construction

²⁶ COM(2012) 261 final

²⁷ COM(2009) 301 final.

²⁸ COM(2012) 124 final.

in public procurement, notably by encouraging these partners to use the Eurocodes as a tool for implementing their construction regulations.

Member States are invited:

- to act swiftly to adopt the newly proposed regulation²⁹ on the access of third-country goods and services to the EU internal market in public procurement and procedures supporting negotiations on access of EU goods and services to the public-procurement markets of third countries.

4. GOVERNANCE AND IMPLEMENTATION OF THE STRATEGY

An action plan providing details on the expected outcome from each recommendation, the share of competence between the European Commission, the Member States and sector organisations and the timeline for implementation is attached to the present Communication.

Implementation of the strategy requires streamlining and coordination of the many ongoing initiatives at EU, national and sectoral levels to create more synergies and maximise their impact in the short, medium and long term. It should be based on a governance structure that combines coordination and monitoring from both a thematic and a strategic perspective, including:

- A high-level tripartite strategic forum (Commission, Member States, sectoral representatives) that would comment on the EU initiatives that affect construction and on the implementation of the strategy, subsequently making recommendations on any necessary adjustments of the strategy or new initiatives to be launched.
- The creation of thematic groups composed of Member States and sectoral representatives with an interest in specific priorities of the strategy, which should liaise with existing European networks and projects. These groups will be supervised by the Commission services in charge of the specific topic addressed by each group.

This structure would allow both strategic guidance from the EU and a bottom-up initiative from Member States together with the construction sub-sectors. Cooperation must be strengthened between sub-sectors and across the value chain in order to meet global challenges.

5. CONCLUSIONS

Given the importance of the construction sector for the EU's GDP and employment, as well as its role in the achievement of some of the critical climate, environmental and energy-related objectives, the competitiveness of this sector is a permanent political priority.

Furthermore, especially in times of financial and economic crisis, EU policies in the areas of climate change, energy efficiency and renewable energies, in particular in the context of a policy for sustained encouragement of building renovation, should be seen as an opportunity to revitalise business and employment in the construction sector.

This Communication identifies areas with growth potential for the enterprises of the construction sector, often within existing policy strategies and instruments. Full

²⁹ Ibid.

implementation of these EU strategies should, for instance, encourage long-term investment in TransEuropean Networks, in research & innovation and in a stronger human capital base, thus reinforcing the competitiveness of the construction sector both within the EU Internal Market and in international markets. This should be accompanied by a clear and coherent legal framework and harmonised performance-assessment methods for sustainability in order to ensure proper functioning of the Internal Market for construction products and services.

The success of the proposed strategy depends on the commitment of Member States and construction stakeholders at various levels:

- the high level tripartite strategic forum should have a clear brief to conduct a critical appraisal of the construction sector's performance;
- Member States and construction stakeholders should ensure appropriate links with national and sectoral agendas for construction;
- Member States and construction stakeholders should facilitate the transfer of experience and good practices from the thematic groups so as to achieve their operational implementation in construction businesses;
- Each policy intervention should be monitored and assessed against a number of indicators.

ANNEX – ACTION PLAN

Short term actions (2012-2014) – reference in sections 3.1.1 and 3.2.1 of the Communication

Actions	Output	Policy context	Main competence	Time horizon
Analysis of various EU and national financial instruments supporting energy efficiency in buildings	European Commission report and recommendations on financial support for energy efficiency in buildings	Directive 2010/31/EU on energy performance of buildings/ Energy Efficiency Action Plan 2011	European Commission	Ongoing – end in 2013
Fiscal instruments and credit mechanisms for renovation projects proportional to the sustainability targets to be achieved	Staff Working Document on the implementation by Member States of energy efficiency measures (including fiscal instruments and credit mechanisms in the building sector) based on National Energy Efficiency Action Plans	Directive 2006/32/EC on energy end-use efficiency and energy services/Directive 2010/31/EU on energy performance of buildings	European Commission	2012-2013

Pilot project on insurance and performance guarantee	Preliminary recommendations on insurance schemes to cover performance guarantees by small building contractors	New pilot project supported by the European Parliament (started in 2012)	European Commission	2013
Information campaign on new Late payment Directive	Raising awareness of contractors rights on payment terms	Directive 2011/7/EU	European Commission	2012
Pilot project for the rapid and efficient enforcement of outstanding claims by SMEs operating across borders	Raising awareness of contractors rights on payment terms	Directive 2011/7/EU	European Commission	2012-2013
Evaluation of the BUILD UP Skills initiative with a view to extend the initiative to other categories of building professionals and other qualification needs	Evaluation Report	Intelligent Energy Europe Programme	European Commission	2013-2014
Financial engineering instruments and project development assistance for small scale renovation projects with contractual guarantees on building performances	Report from MS on the implementation of the financial instruments and mechanisms	Structural Funds	Member States	2012-2014
Inclusion of Build-up skills roadmaps under the priorities for 2014-2020 European Social Fund financing	Build-up skills roadmaps rolled out through the ESF financing	Energy policy Regional policy Employment	European Commission Member States	2012-2013

		policy		
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Mid to long term actions (2014-2020)

1. Stimulating favourable investment conditions – references in section 3.1.2 of the Communication

Actions	Output	Policy context	Competence	Time horizon
Minimal alignment at a technical level of national permit granting process for TENs cross border sections	Common EU technical specification	Trans-European Networks for Transport	European Commission	2014 - 2016
Identification of technological gaps in the construction value chain and development of an action plan to address these gaps	Conference and recommendations on innovation priorities for construction	Innovation Policy	European Commission	2013
Joint coordinated initiatives between Member States and private actors combining research-innovation-procurement, certification, insurance, interregional clusters, etc to speed up the uptake of new knowledge and technologies at EU and regional levels	Projects	Horizon 2020 COSME EU Cohesion Policy Funds	Member States	2014 - 2020

2. Improving the human capital basis – references in section 3.2.2 in the Communication

Actions	Output	Policy context	Competence	Time horizon
EU Social Dialogue' initiatives for adapting vocational education and training to the future qualifications needs of the construction sector, identifying basic requirements for skills in specific branches and facilitating the mutual recognition of qualifications	Study to develop an information platform	EU Social dialogue	European Commission	2012 - 2014

Creation of a EU Sector Skill Council for construction to develop initiatives in the fields of energy and resource efficiency in buildings, health and safety, quality standards, apprenticeship, joint management of funds by social partners, etc.	EU Sector Skill Council	EU social dialogue	European Commission	2013-2016
EU Sector Skills Alliance in sustainable construction	Partnerships to deliver adapted curricula or Vocational and Educational Training (VET) qualifications in innovative ways	New jobs for new skills	European Commission	2013 - 2016
To act swiftly for the adoption of the newly proposed directive on the enforcement of Directive 96/71/EC on the posting of workers	Adoption of a new EU directive	Directive 96/71	Council and European Parliament	2012-2014
Partnerships for vocational education and training schemes at national and regional levels to respond to current and emerging needs of the construction sector, in particular in the field of ICT	Targeted Partnerships for vocational education and training (VET)	National VET policies	Sector organisations	2013-2016
Campaigns to make the construction sector more attractive to talents	Awareness campaigns		Sector organisations	2012-2020

3. Improving resource efficiency, environmental performance and business opportunities - references in section 3.3 in the Communication

Actions	Output	Policy context	Competence	Time
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				horizon
Mutual recognition of methods to assess the environmental performance of buildings ³⁰	EU scheme for environmental assessment of buildings and EU technical specifications	EU resource efficiency policy and EU standardisation policy	European Commission	2014-2016
Mutual recognition of risk assessment methods taking into account environmental performance, in particular within the context of EU standardisation activities and insurance schemes	EU technical specifications	EU standardisation policy	European Commission	2014-2018
EU wide life cycle costing (LCC) methodology for buildings for Green Public Procurement ³¹	EU guidance on Life Cycle Costing in public procurement	Green Public Procurement	European Commission	2014-2016
Increasing the use of Green Public Procurement in regional policy in coming programming period ³²	Further promotion of construction related GPP criteria in EU financed projects	Regional Policy	European Commission	2014-2020
Assessment of hindrances resulting from national legislation governing the authorisation process for major construction projects	Operational conclusions from the revision process of the	Environmental assessment and national permit-granting	European Commission	2013-2016

³⁰ action to be further developed in the Communication on sustainable buildings in 2013

³¹ action to be further developed in the Communication on sustainable buildings in 2013

³² action to be further developed in the Communication on sustainable buildings in 2013

	Environmental Impact Assessment Directive Guidance for streamlining environmental assessment procedures of energy infrastructure projects of common interest	procedures		
Harmonised rules on the declaration of the performance characteristics of construction products in relation to a sustainable use of resources ³³	Harmonised EU rules and updated harmonised EU standards	EN 12521/Construction Products Regulation	European Commission	2013-2018
Evaluation of the performance of construction sub-sectors in terms of competitiveness and sustainable development at national and regional levels	Reports	National construction policies	Member States	

4. Strengthening the Internal Market for Construction- references in section 3.4 in the Communication

Actions	Output	Policy context	Main competence	Time horizon
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³³ action to be further developed in the Communication on sustainable buildings in 2013

“Fitness checks” of EU legislation to identify excessive administrative burdens, overlaps, gaps, inconsistencies and obsolete measures	Evaluation report and recommendations on EU legislation	Smart Regulation	European Commission	2013-2015
Review of the Eurocodes implementation in Member States and proposals to enforce the use of Eurocodes in Public Procurement and other instruments, such as national risk assessments and management plans.	Report on and possible standardisation mandate for other core construction design standards	EC Recommendation Eurocodes 2003/887/EC	European Commission	2013-2014
Market surveillance in relation to the implementation of European legislation	Reduced complaints from industry	Regulation 765/2008/EC	Member States	

5 Fostering the global competitive position of EU construction enterprises - references in section 3.5 in the Communication

Actions	Output	Policy context	Main competence	Time horizon
Negotiation of trade commitments regarding access to third country commercial and procurement markets	Trade agreements securing market access for construction products and services	EU Trade Policy	European Commission	Ongoing
Raise opportunities for using EU financial instruments, e.g. from European Investment	Targeted information on the	E.g. EU-Africa partnership for	European	2013-2016

Bank, in support to transcontinental connections	use of EU financial instruments	transport infrastructure	Commission	
Financial support to technical assistance to the internationalisation of small specialised contractors	Technical assistance to EU small contractors	“Small business, Big World “ Communication	European Commission	2012-2015
Develop co-operation with Africa, Latin America, Russia , Neighbourhood countries concerning sustainable construction in public procurement	International forum	EU foreign and regulatory dialogue	European Commission	2013-2015
To act swiftly for the adoption of the newly proposed regulation on the access of third-country goods and services to EU public procurement and procedures supporting negotiations on access of EU goods and services to the public procurement markets of third countries	Adoption of an EU regulation	Proposal for a regulation on market access reciprocity	Member States	2012-2014

BRUSSELS, 31.7.2012
COM(2012) 433 FINAL

COMMUNICATION FROM THE COMMISSION
TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Construction 2020

Strategy for the sustainable
competitiveness of the construction
sector and its enterprises



ΕΥΡΩΠΑΪΚΗ ΕΠΙΤΡΟΠΗ

Βρυξέλλες, 31.7.2012
COM(2012) 433 final

**ΑΝΑΚΟΙΝΩΣΗ ΤΗΣ ΕΠΙΤΡΟΠΗΣ ΠΡΟΣ ΤΟ ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΟΒΟΥΛΙΟ ΚΑΙ
ΤΟ ΣΥΜΒΟΥΛΙΟ**

**Στρατηγική για τη βιώσιμη ανταγωνιστικότητα του κατασκευαστικού τομέα και των
επιχειρήσεών του**

{SWD(2012) 236 final}

ΑΝΑΚΟΙΝΩΣΗ ΤΗΣ ΕΠΙΤΡΟΠΗΣ ΠΡΟΣ ΤΟ ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΟΒΟΥΛΙΟ ΚΑΙ ΤΟ ΣΥΜΒΟΥΛΙΟ

Στρατηγική για τη βιώσιμη ανταγωνιστικότητα του κατασκευαστικού τομέα και των επιχειρήσεών του

1. ΕΙΣΑΓΩΓΗ

Ο κατασκευαστικός τομέας διαδραματίζει σημαντικό ρόλο στην ευρωπαϊκή οικονομία. Παράγει σχεδόν το 10% του ΑΕΠ και παρέχει 20 εκατομμύρια θέσεις εργασίας, κυρίως στις πολύ μικρές και στις μικρές επιχειρήσεις. Επίσης ο κατασκευαστικός τομέας είναι σημαντικός καταναλωτής ενδιάμεσων προϊόντων (πρώτες ύλες, χημικές ουσίες, ηλεκτρικό και ηλεκτρονικό εξοπλισμό, κλπ.) καθώς και συναφών υπηρεσιών. Λόγω της οικονομικής του σημασίας, οι επιδόσεις του κατασκευαστικού τομέα μπορούν να επηρεάσουν σημαντικά την ανάπτυξη του συνόλου της οικονομίας.

Η ποιότητα των κατασκευαστικών έργων έχει άμεσες επιπτώσεις στην ποιότητα ζωής των Ευρωπαίων. Μεταξύ άλλων, η ενεργειακή απόδοση των κτιρίων και η αποτελεσματική χρήση των πόρων στην παραγωγή, τη μεταφορά και τη χρήση των προϊόντων για την κατασκευή κτιρίων και υποδομών έχει σημαντικό αντίκτυπο στην ενέργεια, την αλλαγή του κλίματος και το περιβάλλον.

Η ανταγωνιστικότητα των κατασκευαστικών επιχειρήσεων αποτελεί, επομένως, σημαντική παράμετρο όχι μόνο γενικά για την ανάπτυξη και την απασχόληση, αλλά και για την εξασφάλιση της βιωσιμότητας του τομέα.

Ο εν λόγω τομέας θα μπορούσε να συμβάλει σημαντικά στη δημιουργία θέσεων απασχόλησης¹, με την αύξηση της δραστηριότητας σε ορισμένους πολύ ελπιδοφόρους τομείς, όπως στην ανακαίνιση των κτιρίων, και στις υποδομές, με την παροχή στήριξης μέσω, π.χ. κατάλληλων πολιτικών για την προώθηση της ζήτησης αλλά και για την ενθάρρυνση των επενδύσεων. Έτσι, ο κατασκευαστικός τομέας διαδραματίζει σημαντικό ρόλο στην υλοποίηση της στρατηγικής για την Ευρώπη 2020 για έξυπνη, διατηρήσιμη και χωρίς αποκλεισμούς ανάπτυξη. Επιπλέον, η ανακοίνωση της Επιτροπής σχετικά με τον «ενεργειακό χάρτη πορείας 2050»² επισημαίνει ότι η αύξηση της ενεργειακής απόδοσης στα νέα και στα υφιστάμενα κτίρια είναι το κλειδί για τον μετασχηματισμό του ενεργειακού συστήματος της ΕΕ.

Ένας βιώσιμος κατασκευαστικός τομέας διαδραματίζει σημαντικό ρόλο στην επίτευξη του μακροπρόθεσμου στόχου της ΕΕ για τη μείωση κατά 80-95% των εκπομπών αερίου του θερμοκηπίου. Σύμφωνα με τον χάρτη πορείας για τη μετάβαση σε μια ανταγωνιστική οικονομία χαμηλών επιπέδων ανθρακούχων εκπομπών το 2050³ η αποδοτική σε σχέση με το κόστος συμβολή του κατασκευαστικού τομέα θα επιφέρει περίπου 40 έως 50% μείωση το

¹ Εκτιμάται ότι θα μπορούσαν να δημιουργηθούν 275 000 νέες θέσεις εργασίας στον τομέα αυτόν έως το 2020. CEDEFOP «Δεξιότητες, προσφορά και ζήτηση» 2010, σ. 96 http://www.cedefop.europa.eu/en/Files/3052_en.pdf

² COM(2011) 885/2.

³ COM(2011) 112.

2030 και περίπου 90% το 2050. Οι αναγκαίες επενδύσεις θα συμβάλλουν ουσιαστικά στην ανταγωνιστικότητα του ευρωπαϊκού κατασκευαστικού τομέα. Ο τομέας έχει επίσης να διαδραματίσει σημαντικό ρόλο όσον αφορά την προσαρμογή στην κλιματική αλλαγή και την ανθεκτικότητα έναντι φυσικών καταστροφών και καταστροφών που προκαλούνται από τον άνθρωπο, μέσω της προώθησης μακροπρόθεσμων επενδύσεων για την θωράκιση έναντι καταστροφών. Ωστόσο, ο κατασκευαστικός τομέας αντιμετωπίζει πολλά διαρθρωτικά προβλήματα, όπως είναι η έλλειψη ειδικευμένου εργατικού δυναμικού σε πολλές εταιρείες, η χαμηλή ελκυστικότητα για τους νέους λόγω των συνθηκών εργασίας, η περιορισμένη ικανότητα για καινοτομία και το φαινόμενο της αδήλωτης εργασίας. Γενικότερα, η σημερινή κατάσταση αυτού του παραγωγικού κλάδου χαρακτηρίζεται από τρία βασικά στοιχεία.

Πρώτον, ο κατασκευαστικός τομέας είναι ο τομέας που πλήγηκε σκληρότερα από τη χρηματοπιστωτική και οικονομική κρίση (κτίρια και έργα υποδομής μειώθηκαν κατά 16% μεταξύ του Ιανουαρίου 2008 και του Νοεμβρίου 2011 στην ΕΕ των 27⁴). Δεύτερον, υπάρχει αύξηση του ανταγωνισμού από μη ευρωπαϊκές επιχειρήσεις όχι μόνο στις διεθνείς αγορές αλλά και στην εσωτερική αγορά, ιδίως όσον αφορά τα έργα υποδομής. Αυτός ο εξωτερικός ανταγωνισμός δεν λειτουργεί πάντα έντιμα· οι εταιρείες της ΕΕ αντιμετωπίζουν συχνά πολύ μεγαλύτερο κόστος από τις μη ευρωπαϊκές εταιρείες. Τέλος, η ενέργεια και τα περιβαλλοντικά θέματα έχουν δημιουργήσει μια νέα δυναμική ανάμεσα στις εταιρείες και αποτέλεσαν έναυσμα για διάφορες πρωτοβουλίες του δημόσιου τομέα, οι οποίες έχουν καταστεί πλέον θεμελιώδεις παράγοντες ανταγωνισμού στην αγορά. Οι κατασκευαστικές επιχειρήσεις έχουν ήδη σημειώσει σημαντική πρόοδο αλλά η επίτευξη των στόχων της ΕΕ για το κλίμα, την ενέργεια και το περιβάλλον θα απαιτήσει σημαντικές αλλαγές τις οποίες θα είναι δύσκολο να αντιμετωπίσει ο τομέας χωρίς την κατάλληλη πολιτική στήριξη.

Η παρούσα ανακοίνωση εντοπίζει τις βασικές προκλήσεις που αντιμετωπίζει ο τομέας σήμερα και έως το 2020 από την άποψη των επενδύσεων, του ανθρώπινου κεφαλαίου, των περιβαλλοντικών απαιτήσεων, της ρύθμισης και της πρόσβασης στις αγορές, και προτείνει πρωτοβουλίες με στόχο τη στήριξη του τομέα για το σκοπό αυτό. Βραχυπρόθεσμα, δίνεται έμφαση στην ανάγκη να στηριχθεί η οικονομική ανάπτυξη και η απασχόληση στον κατασκευαστικό τομέα για την αντιμετώπιση της κρίσης. Μακροπρόθεσμα, οι προκλήσεις που αντιμετωπίζει αυτός ο κλάδος παραγωγής θα απαιτούσε μια κοινή και συντονισμένη προσέγγιση σε ευρωπαϊκό επίπεδο για τη βελτίωση της λειτουργίας της αλυσίδας αξίας, ιδίως μέσω εθελοντικών εταιρικών σχέσεων μεταξύ του ιδιωτικού και του δημόσιου τομέα και με ένα κατάλληλο ρυθμιστικό πλαίσιο, όπου είναι απαραίτητο.

2. ΣΗΜΕΡΙΝΗ ΚΑΤΑΣΤΑΣΗ ΚΑΙ ΒΑΣΙΚΕΣ ΠΡΟΚΛΗΣΕΙΣ

Η πολυμορφία των δραστηριοτήτων σε κάθε κλάδο του κατασκευαστικού τομέα δημιουργεί μια αντιφατική πραγματικότητα σε επίπεδο κοινωνικοοικονομικών, οργανωτικών, πολιτιστικών και τεχνολογικών θεμάτων και προσαρμογής στις νέες ρυθμίσεις και ευκαιρίες της αγοράς.

Υπάρχουν παγκόσμιες προκλήσεις που μπορούν μεσοπρόθεσμα να καταστούν μοχλοί για τη βιώσιμη ανάπτυξη, υπό τον όρο ότι θα ληφθούν τώρα τα κατάλληλα μέτρα. Αυτό θα μπορούσε να έχει ως αποτέλεσμα την ανάπτυξη ενός φάσματος υπηρεσιών για την αντιμετώπιση θεμάτων όπως η υγεία και η ασφάλεια, η ενεργειακή απόδοση, το πράσινο κτίριο, η ανθεκτικότητα έναντι καταστροφών, οι κλιματικές συνθήκες εσωτερικού χώρου, η

⁴ Ανακοίνωση τύπου της Eurostat 169/2011, της 17ης Νοεμβρίου 2011.

επαναχρησιμοποίηση/ανάκτηση/ανακύκλωση και ο κατάλληλος σχεδιασμός. Εάν αντιμετωπιστούν σωστά οι προκλήσεις αυτές θα μπορούσαν επίσης να δημιουργήσουν νέες ευκαιρίες στην αγορά.

2.1 Το γενικό μακροοικονομικό πλαίσιο

Η **χρηματοπιστωτική κρίση** έχει πλήξει ιδιαίτερα τον κατασκευαστικό τομέα: υπήρξαν σοβαρές μειώσεις της ζήτησης ιδίως στην αγορά ιδιωτικής κατοικίας αλλά και σε άλλες αγορές, π.χ. στην αγορά υποδομών. Οι τάσεις διαφέρουν από το ένα κράτος μέλος στο άλλο. Σε ορισμένα κράτη μέλη, ένας από τους παράγοντες που συνέβαλε στη μείωση ήταν η έκρηξη της «φούσκας» των ακινήτων και εξακολούθησε να μειώνει σημαντικά τη δραστηριότητα του τομέα⁵. Σε άλλα, ο τομέας πλήγηκε ιδιαίτερα από τη συρρίκνωση των πιστωτικών αγορών. Οι περιορισμοί στις δημόσιες δαπάνες λόγω της κρίσης θα ασκήσουν μεγαλύτερη πίεση στις επενδύσεις σε έργα υποδομής.

Ορισμένες χώρες έχουν επενδύσει σε **δέσμες μέτρων τόνωσης** ως απάντηση στην κρίση, για παράδειγμα με άμεσες επενδύσεις σε έργα υποδομής, με μειωμένο ποσοστό ΦΠΑ για νέες κατασκευές και/ή για την ανακαίνιση κτιρίων, με προτιμησιακά επιτόκια για ενυπόθηκα δάνεια, κ.λπ. Ωστόσο, μόνο εκείνες οι προσεγγίσεις που περιλαμβάνουν μέτρα με στόχο την αναβάθμιση των δεξιοτήτων και των προσόντων, την καινοτομία και την «πράσινη» οικονομία θα έχουν επίσης μακροχρόνια αποτελέσματα για την ανταγωνιστικότητα του τομέα. Αυτό το γεγονός τονίζει την ανάγκη για κατάλληλη διαμόρφωση της πολιτικής που θα ενισχύσει βραχυπρόθεσμα την ανάπτυξη και την απασχόληση, αλλά και την αναδιάρθρωση μακροπρόθεσμα του κατασκευαστικού τομέα.

2.2 Οι επιδόσεις της αλυσίδας αξίας

Οι αγορές του κατασκευαστικού τομέα της ΕΕ και ο ίδιος ο τομέας είναι σε **μεγάλο βαθμό κατακερματισμένος**, με πολλές πολύ μικρές επιχειρήσεις, με μεγάλες διαφορές μεταξύ των κρατών μελών όσον αφορά τις επιδόσεις του τομέα και με σοβαρές δυσκολίες στη διάδοση ορθών πρακτικών. Η καλύτερη ολοκλήρωση της αλυσίδας αξίας θα μπορούσε να αυξήσει σημαντικά την έκταση του αντίκτυπου της συνεργασίας σε επίπεδο καινοτομίας.

Τα εργοτάξια δομικών κατασκευών, και σε μικρότερο βαθμό οι κατασκευαστές προϊόντων για τεχνικές και δομικές κατασκευές, θα αντιμετωπίζουν όλο και περισσότερο την **ανάγκη για εξειδικευμένο εργατικό δυναμικό**. Ο τεράστιος αριθμός ειδικευμένων εργαζομένων που θα συνταξιοδοτηθούν από σήμερα μέχρι και το 2020⁶, που αντιστοιχεί σε πάνω από τα δύο τρίτα των θέσεων εργασίας στον κατασκευαστικό τομέα, στον κλάδο παραγωγής και στις μεταφορές, θα πρέπει επίσης να αντικατασταθεί. Η χρόνια έλλειψη ειδικευμένου εργατικού δυναμικού μπορεί να εξηγηθεί, αφενός, από την χαμηλή ελκυστικότητα του τομέα για τους νέους και, αφετέρου, από την αυξημένη ανάγκη για δεξιότητες που αντιστοιχούν σε συγκεκριμένα προσόντα, τα οποία δυσκολεύονται να προσφέρουν τα συστήματα εκπαίδευσης και κατάρτισης (καθώς και η αγορά απασχόλησης). Η μετάβαση σε μια οικονομία με αποτελεσματική χρήση των πόρων και με χαμηλές εκπομπές διοξειδίου του άνθρακα θα επιφέρει επίσης σημαντικές διαρθρωτικές αλλαγές στον τομέα των δομικών κατασκευών, ο

⁵ Για παράδειγμα, ο δείκτης παραγωγής προσαρμόστηκε με βάση τις εργάσιμες ημέρες που μειώθηκαν κατά 49% στην Ισπανία και κατά 76% στην Ιρλανδία κατά την περίοδο από το πρώτο τρίμηνο του 2007 μέχρι το 2ο τρίμηνο του 2011 — Πηγή: Eurostat

⁶ CEDEFOP «Δεξιότητες, προσφορά και ζήτηση» 2010 σ. 93
http://www.cedefop.europa.eu/en/Files/3052_en.pdf

οποίος θα πρέπει να προσαρμόσει και να προβλέψει τις ανάγκες σε δεξιότητες και ικανότητες στους τομείς αυτούς. Αυτό αφορά, ιδίως, την προετοιμασία του εργατικού δυναμικού για την κατασκευή «κτιρίων με μηδενική σχεδόν κατανάλωση ενέργειας», ανεξάρτητα από το αν πρόκειται για νέα ή ανακαινισμένα κτίρια. Η ανάπτυξη τεχνολογιών ευρείας διάδοσης και η χρήση ευέλικτων πρακτικών για την οργάνωση εργασίας συνεπάγεται επίσης αλλαγές των δεξιοτήτων και των προσόντων στον τομέα των δομικών κατασκευών.

Οι δαπάνες για έρευνα και καινοτομία εξακολουθούν να είναι πολύ χαμηλές σε σύγκριση με τον κλάδο παραγωγής γενικά. Αυτό μπορεί ωστόσο να εξηγηθεί από τις μεγάλες απαιτήσεις σε εργατικό δυναμικό και το γεγονός ότι οι κατασκευαστικές επιχειρήσεις ενδιαφέρονται κυρίως να ενσωματώσουν τις διαθέσιμες εξωτερικές τεχνολογικές εξελίξεις στις δραστηριότητές τους. Ο τομέας θα εντείνει πιθανόν τις προσπάθειές του στην έρευνα και στην καινοτομία για να ανταπεξέλθει στη μεγάλη κατανάλωση μέσων παραγωγής (όπως μεταλλικές και μη μεταλλικές ορυκτές ουσίες, χημικά προϊόντα και ξυλεία) και στην παραγωγή μεγάλων ποσοτήτων αποβλήτων. Επιπλέον, ο κλάδος παραγωγής αναπτύσσει όλο και περισσότερα υλικά των οποίων η συλλογή και η επαναχρησιμοποίηση είναι πιο εύκολη και συστήματα ή «λύσεις δόμησης» που διευκολύνουν την «αποδόμηση» των έργων και την επαναχρησιμοποίηση των υλικών. Αυτές οι προσπάθειες συμφωνούν με τις νέες βασικές απαιτήσεις που αναφέρονται στον κανονισμό για τα προϊόντα του τομέα δομικών κατασκευών και αφορούν την αειφόρο χρήση των φυσικών πόρων, καθώς και την πρωτοβουλία για τις πρώτες ύλες (RMI), μέσω της πιθανής ανάπτυξης των βέλτιστων πρακτικών όσον αφορά τη συλλογή και την επεξεργασία των αποβλήτων, κυρίως μέσω της ανάκτησης/επαναχρησιμοποίησης πολύτιμων υλικών προερχόμενων από απόβλητα, και μέσω της υποστήριξης της έρευνας σε θέματα παροχής οικονομικών κινήτρων για την ανακύκλωση/ανάκτηση. Ωστόσο, χρειάζονται πρωτοβουλίες της ΕΕ και των κρατών μελών για την επιτάχυνση της εφαρμογής καινοτόμων λύσεων και βέλτιστων πρακτικών.

2.3 Η οικονομία με χαμηλές εκπομπές διοξειδίου του άνθρακα

Όπως ανακοινώθηκε στην **αναδιατύπωση της οδηγίας για την ενεργειακή απόδοση των κτιρίων**⁷, η κατασκευή κτιρίων με σχεδόν μηδενική κατανάλωση ενέργειας (NZEB)⁸ θα αποτελέσει σημαντική πρόκληση για τον κατασκευαστικό τομέα. Η αγορά έχει στη διάθεσή της αρκετά έτη για να προσαρμοστεί, αλλά όλοι οι συντελεστές της αγοράς χρειάζονται στήριξη, δηλαδή από τους δημόσιους φορείς (που θα πρέπει να συμμορφωθούν δύο έτη νωρίτερα από τους άλλους) μέχρι τις εταιρείες δομικών κατασκευών, τους σχεδιαστές, τους κατασκευαστές, κ.λπ. Η προσαρμογή αυτή θα πρέπει επίσης να απαιτείται για τομείς όπως η δομή της χρηματοδότησης, οι δημόσιες συμβάσεις, η εκπαίδευση και η εμπορία.

Ενώ ο αριθμός των **κτιρίων «χαμηλής κατανάλωσης ενέργειας»** αυξάνεται, δεν έχει επιτευχθεί ακόμη μια κρίσιμη μάζα και οι προσπάθειες για τη βελτίωση της ενεργειακής απόδοσης και την ενσωμάτωση των ανανεώσιμων πηγών ενέργειας προχωρούν με αργό ρυθμό. Η ενίσχυση του ρυθμιστικού πλαισίου, μαζί με την κατάλληλη δημοσιονομική πολιτική, θα συμβάλλει στην επίτευξη κρίσιμης μάζας.

Επίσης, στον τομέα της **ανακαίνισης υφιστάμενων κτιρίων**, πρέπει να καταβληθούν μεγαλύτερες προσπάθειες για την αύξηση της εξοικονόμησης ενέργειας. Εξάλλου, ο αριθμός

⁷ Οδηγία 2010/31/ΕΕ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου, της 19ης Μαΐου 2010, για την ενεργειακή απόδοση των κτιρίων

⁸ Για περισσότερες πληροφορίες σχετικά με τις σχετικές διατάξεις, βλ. οδηγία 2010/31/ΕΕ, άρθρα 2.2 και 9.

των υφισταμένων κτιρίων που υφίστανται εκτεταμένη ανακαίνιση είναι σχετικά μικρός. Η «στρατηγική για μια ανταγωνιστική, βιώσιμη και ασφαλή ενέργεια»⁹, ο «Χάρτης πορείας για τη μετάβαση σε ανταγωνιστική οικονομία χαμηλών εκπομπών διοξειδίου του άνθρακα το 2050»¹⁰ και ο «Ενεργειακός χάρτης πορείας 2050»¹¹ δίνει, συνεπώς, έμφαση στην ανάγκη ανάληψης περισσότερης δράσης στον τομέα των κτιρίων, ιδίως με την ενθάρρυνση της ανακαίνισης. Αυτή η γραμμή θα πρέπει να συνεχιστεί.

Οι υποδομές μεταφορών έχουν τεράστιες περιβαλλοντικές επιπτώσεις, καθώς και σημαντική κατανάλωση ενέργειας και πρώτων υλών και παραγωγή αποβλήτων. Τα δίκτυα υποδομής πρέπει να συμβάλουν σημαντικά προς μια πιο βιώσιμη Ευρώπη.

2.4 Ανταγωνισμός μεταξύ κατασκευαστικών επιχειρήσεων στο εσωτερικό της ΕΕ και στις διεθνείς αγορές

Ο ανταγωνισμός στις αγορές της ΕΕ έχει βελτιωθεί μέσω της εφαρμογής των οδηγιών για τις δημόσιες συμβάσεις, της υλοποίησης της οδηγίας υπηρεσιών και της έκδοσης των ευρωπαϊκών προτύπων σχεδιασμού και δομικών κατασκευών («ευρωκώδικες»). Ωστόσο, οι εταιρείες της ΕΕ που εμπλέκονται στον ανταγωνισμό αυτόν δεν ανταγωνίζονται πάντα επί ίσοις όροις, ιδίως με τις **μη ευρωπαϊκές εταιρείες** οι οποίες συχνά υπόκεινται σε λιγότερο αυστηρές κοινωνικές και περιβαλλοντικές απαιτήσεις και επωφελούνται από κρατικές ενισχύσεις. Τα κράτη μέλη θα πρέπει να εξασφαλίζουν ότι οι εταιρείες της ΕΕ και οι επιχειρήσεις τρίτων χωρών ανταγωνίζονται επί ίσοις όροις για τις δημόσιες συμβάσεις, χωρίς να διακυβεύονται τα κοινωνικά και τα περιβαλλοντικά επιτεύγματα της ΕΕ.

Η κατάσταση στις **διεθνείς αγορές** είναι ακόμα πιο δύσκολη. Ο κλάδος παραγωγής συχνά αντιμετωπίζει σοβαρές δυσχέρειες, όχι μόνο από τεχνική άποψη, αλλά και όσον αφορά τους όρους ανταγωνισμού σε άλλες χώρες, π.χ. την Κίνα, οι οποίοι περιορίζουν τις ευκαιρίες πρόσβασης στις αγορές αυτές. Ωστόσο, επειδή οι ευρωπαϊκές αγορές του κατασκευαστικού τομέα αναμένεται να αναπτυχθούν με βραδύτερο ρυθμό από αυτόν των αναδυόμενων αγορών, ο τομέας θα πρέπει να αναπτύξει και να διατηρήσει ισχυρότερη παγκόσμια προοπτική. Για τις εταιρείες δομικών κατασκευών της ΕΕ είναι σημαντικό, οι τρίτες χώρες να ανοίξουν τις αγορές τους δημόσιων συμβάσεων στον ανταγωνισμό από τις επιχειρήσεις της ΕΕ. Η ΕΕ θα πρέπει να δείξει μεγαλύτερη αποφασιστικότητα στην έναρξη διαπραγματεύσεων με τρίτες χώρες προκειμένου να ανοίξουν περισσότερο τις εμπορικές αγορές τους καθώς και τις αγορές τους δημοσίων συμβάσεων, να διερευνήσει πιθανές μεροληπτικές πρακτικές ανάθεσης δημοσίων συμβάσεων και να αρχίσει διαβουλεύσεις με τις ενδιαφερόμενες χώρες για την επίλυση διαφορών σε θέματα πρόσβασης στην αγορά.

3. ΕΥΡΩΠΑΪΚΗ ΣΤΡΑΤΗΓΙΚΗ ΓΙΑ ΤΗ ΒΙΩΣΙΜΗ ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ ΤΟΥ ΤΟΜΕΑ ΤΩΝ ΔΟΜΙΚΩΝ ΚΑΤΑΣΚΕΥΩΝ

Προκειμένου να αντιμετωπιστούν οι βασικές προκλήσεις που περιγράφονται ανωτέρω, έχει διαμορφωθεί μια ευρωπαϊκή στρατηγική για την επόμενη δεκαετία. Έχει στόχο τη συμπλήρωση των στρατηγικών που αναπτύχθηκαν από τις επιχειρήσεις του κατασκευαστικού τομέα για τη βελτίωση της ανταγωνιστικότητάς τους και για την αντιμετώπιση κοινωνικών προκλήσεων.

⁹ COM(2010) 639 τελικό.

¹⁰ COM(2011) 112 τελικό.

¹¹ COM(2011) 885 τελικό.

Η στρατηγική αυτή επικεντρώνεται σε πέντε κύριους στόχους: α) τόνωση ευνοϊκών συνθηκών για τις επενδύσεις· β) βελτίωση της βάσης σε ανθρώπινο κεφάλαιο του κατασκευαστικού τομέα· γ) βελτίωση της αποτελεσματικής χρήσης των πόρων, των περιβαλλοντικών επιδόσεων και των επιχειρηματικών ευκαιριών· δ) ενίσχυση της εσωτερικής αγοράς για τις κατασκευές· ε) προώθηση της συνολικής ανταγωνιστικής θέσης των κατασκευαστικών επιχειρήσεων της ΕΕ. Κάθε στόχος καλύπτει διάφορες βασικές προκλήσεις· π.χ., χρειάζονται ευνοϊκές επενδυτικές συνθήκες για την τόνωση της ανάπτυξης, της έρευνας και της καινοτομίας και της οικονομίας με χαμηλές εκπομπές άνθρακα. Επίσης, μια στέρεη βάση σε ανθρώπινο κεφάλαιο είναι ουσιαστικής σημασίας για τη βελτίωση της απόδοσης της αλυσίδας αξίας και για την εξεύρεση καινοτόμων λύσεων, ιδίως για μια οικονομία με χαμηλές εκπομπές άνθρακα. Η στρατηγική αφενός, προτείνει συστάσεις με τις οποίες θα μπορούσαν να αντιμετωπιστούν οι βραχυπρόθεσμες έως μεσοπρόθεσμες προκλήσεις της οικονομίας και της απασχόλησης που αντιμετωπίζει ο τομέας των δομικών κατασκευών και αφετέρου, παρουσιάζει ορισμένες συστάσεις με μακροπρόθεσμη προοπτική για την εξασφάλιση διαρκών αποτελεσμάτων στην ανταγωνιστικότητα του τομέα.

3.1 Τόνωση ευνοϊκών όρων για επενδύσεις

Η ανακαίνιση κτιρίων και τα σχέδια διευρωπαϊκών δικτύων μπορούν να αναζωογονήσουν την ανάπτυξη του κατασκευαστικού τομέα, ενώ παράλληλα θα συμβάλουν στην επίτευξη των στόχων των ευρωπαϊκής πολιτικών για την ενέργεια, τις μεταφορές και τη συνοχή. Επιπλέον, η καταπολέμηση της πρακτικής των καθυστερήσεων πληρωμών θα βελτιώσει την οικονομική βιωσιμότητα των εργολάβων, ιδίως των βιοτεχνών και των μικρών επιχειρηματιών στον τομέα των δομικών κατασκευών, καθώς και την πρόσβασή τους στις πιστώσεις. Μακροπρόθεσμα, ο κατασκευαστικός τομέας θα πρέπει να αυξήσει την ικανότητά του να καινοτομεί με σκοπό τη βελτίωση της παραγωγικότητάς του, καθώς και της προστιθέμενης αξίας και των περιβαλλοντικών επιδόσεων όλων των κλάδων της αλυσίδας αξίας.

3.1.1 Βραχυπρόθεσμα μέτρα

Ιδιαίτερη έμφαση θα πρέπει να δοθεί στην ενθάρρυνση της δραστηριότητας για την **ανακαίνιση κτιρίων και τη συντήρηση υποδομών**, που αντιπροσωπεύει σημαντικό μερίδιο της συνολικής απασχόλησης και παραγωγής στον κατασκευαστικό τομέα. Ειδικότερα, τα σημερινά ποσοστά ανακαίνισης κτιρίων¹² και οι πρακτικές όσον αφορά τη βελτίωση της ενεργειακής απόδοσης δεν επαρκούν για την επίτευξη στόχων για την εξοικονόμηση ενέργειας της ΕΕ το 2020. Ο καθορισμός των προτεινόμενων στόχων για την ανακαίνιση ετησίως του 3% των κτιρίων της δημόσιας διοίκησης¹³ (διπλασιασμός του σημερινού ποσοστού ανακαίνισης) καθώς και του 2% του συνόλου του αποθέματος κτιρίων¹⁴ σε βέλτιστα από πλευράς κόστους επίπεδα δεν θα συμβάλει μόνο στην επίτευξη των στόχων, αλλά και στην κατοχύρωση της οικονομικής ανάπτυξης και της απασχόλησης σε τοπικό επίπεδο σε ολόκληρη την ΕΕ. Ωστόσο, η αποδοχή αυτών των βελτιώσεων απαιτεί την αντιμετώπιση ορισμένων ρυθμιστικών, οικονομικών και χρηματοδοτικών εμποδίων.

¹² Ο μέσος όρος της ΕΕ που αφορά την ανακαίνιση των υφιστάμενων κτιρίων είναι 1,2% ανά έτος.

¹³ Συμβιβαστικό κείμενο μεταξύ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για νέα οδηγία για την ενεργειακή απόδοση (εκκρεμεί ακόμη η έγκριση)

¹⁴ Χάρτης πορείας για μια αποδοτική, από πλευράς πόρων, Ευρώπη, COM(2011)571 τελικό

Πρώτα από όλα, τα κράτη μέλη θα πρέπει να εφαρμόζουν σωστά και να επιβάλουν την οδηγία για την ενεργειακή απόδοση των κτιρίων¹⁵. Σε ορισμένα κράτη μέλη, το χαμηλό επίπεδο φιλόδοξων στόχων και η αδυναμία επιβολής της εφαρμογής κωδικών ενέργειας στα κτίρια εμποδίζουν την ενεργειακή αποδοτικότητα των κτιρίων και, συνεπώς, αδυνατούν να τονώσουν τον κατασκευαστικό τομέα.

Φορολογικά κίνητρα¹⁶ και μέτρα οικονομικής υποστήριξης είναι αποδεκτά από τους φορείς της αγοράς και ενισχύουν την ανακαίνιση των υφιστάμενων κτιρίων. Ωστόσο, τα εθνικά συστήματα και ο αντίκτυπός τους ποικίλλουν σε μεγάλο βαθμό. Συνεπώς, η ανταλλαγή εμπειριών θα μπορούσε να φανεί πολύ χρήσιμη για την κατανόηση των πιθανών συνεπειών από διαφορετικές οπτικές γωνίες καθώς επίσης και των κινδύνων της ατελούς εφαρμογής και των απρόβλεπτων συνεπειών. Θα πρέπει επίσης να αναζητηθούν οι συμπληρωματικότητες μεταξύ αυτών των εθνικών συστημάτων, αφενός, και των ευρωπαϊκών και των ιδιωτικών κονδυλίων και των χρηματοδοτικών μέσων, αφετέρου, προκειμένου να βελτιστοποιηθεί το αποτέλεσμα μόχλευσης.

Η ΕΕ παρέχει υποστήριξη και χρηματοδότηση μέσω διάφορων μηχανισμών και τα κράτη μέλη θα πρέπει να τους χρησιμοποιούν περισσότερο. **Τα διαρθρωτικά ταμεία και το Ταμείο Συνοχής** (2007-2013) μπορούν να χρησιμοποιηθούν για επενδύσεις στην αποδοτική χρήση της ενέργειας και στις ανανεώσιμες πηγές ενέργειας, όχι μόνον σε δημόσια και σε εμπορικά κτίρια αλλά και στις υπάρχουσες κατοικίες. Επιπλέον, τα μέσα χρηματοοικονομικής τεχνικής όπως η πρωτοβουλία JESSICA, προσφέρουν τη δυνατότητα επένδυσης σε μικρά σχέδια αστικής ανάπτυξης και αναζωογόνησης που δεν θα μπορούσαν να χρηματοδοτηθούν μέσω των συνήθων μηχανισμών της αγοράς. Επενδυτικά κεφάλαια και εγγυήσεις δανείων που χορηγούνται από την Ευρωπαϊκή Τράπεζα Επενδύσεων (ΕΤΕπ), την Ευρωπαϊκή Τράπεζα Ανασυγκρότησης και Ανάπτυξης (ΕΤΑΑ) και το Ευρωπαϊκό Ταμείο Ενεργειακής Απόδοσης (ΕΤΕΑ) (EEEF-European Energy Efficiency Fund) μαζί με το σχέδιο αναπτυξιακής βοήθειας στους τελικούς δικαιούχους, όπως το σχέδιο ELENA, παρέχουν επίσης ευκαιρίες για τη μόχλευση δημόσιων επιχειρηγήσεων.

Ένα σύστημα που θα μπορούσε να τονώσει τις επενδύσεις στην ανακαίνιση με αποδοτική χρήση των πόρων είναι η ανάπτυξη υπηρεσιών σχεδιασμού και δόμησης για **μικρά σχέδια ανακαίνισης με συμβατικές εγγυήσεις για τις επιδόσεις των κτιρίων**. Αυτό το τμήμα της αγοράς αποκτά πολύ ενδιαφέρον όχι μόνον για τις εταιρείες που παρέχουν ενεργειακές υπηρεσίες (ESCO), αλλά και για ειδικευμένους μικρούς εργολάβους που θα μπορούσαν ενδεχομένως να προσφέρουν επίσης εγγυήσεις επίδοσης για μια σειρά υπηρεσιών στον τομέα των δομικών κατασκευών. Η δημόσια παρέμβαση θα μπορούσε να στηρίξει την ανάπτυξη των εν λόγω υπηρεσιών, ιδίως στον τομέα των δημόσιων συμβάσεων και στον τομέα κατασκευής κατοικιών, σε συνδυασμό με την ανάπτυξη ασφαλιστικών προϊόντων, τα οποία θα μπορούσαν να καλύψουν τους τεχνικούς κινδύνους που συνδέονται με την εγγύηση καλής εκτέλεσης. Ειδικότερα, οι δημόσιες αρχές πρέπει να μεριμνούν ώστε να συμπεριλαμβάνονται στις εργασίες ανακαίνισης η ενεργητική διαχείριση της ενέργειας και οι έξυπνοι μετρητές.

Τέλος, είναι σημαντικό οι κατασκευαστικές επιχειρήσεις να μπορούν να έχουν πρόσβαση σε δικούς τους οικονομικούς πόρους εντός ευλόγου χρονικού διαστήματος. Η νέα οδηγία για τις

¹⁵ Οδηγία 2010/31/ΕΕ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την ενεργειακή απόδοση των κτιρίων (αναδιατύπωση), ΕΕ L 153 της 18.6.2010, σ. 13.

¹⁶ Όπως μειωμένοι συντελεστές ΦΠΑ, προτιμησιακά επιτόκια, φορολογία εκπομπών CO₂ και ενέργειας, στοχοθετημένες επιδοτήσεις, κ.λπ.

καθυστερήσεις πληρωμών¹⁷ θεσπίζει αυστηρότερες διατάξεις, ιδίως εναρμονίζοντας την προθεσμία πληρωμής που πρέπει να τηρούν οι δημόσιες αρχές προς τις επιχειρήσεις, αυξάνοντας το νόμιμο επιτόκιο για την καθυστερημένη πληρωμή και δίνοντας τη δυνατότητα στις επιχειρήσεις να ζητήσουν την επιστροφή των εξόδων τους είσπραξης. Στο πλαίσιο της αναθεώρησης των οδηγιών της ΕΕ για τις δημόσιες συμβάσεις, η Επιτροπή πρότεινε ότι τα κράτη μέλη θα πρέπει να είναι σε θέση να ορίσουν ότι οι υπεργολάβοι μπορούν να ζητήσουν άμεση πληρωμή από την αναθέτουσα αρχή για προμήθειες, έργα και υπηρεσίες που παρέχονται στον κύριο αντισυμβαλλόμενο στο πλαίσιο εκτέλεσης της σύμβασης.

Η Επιτροπή:

- θα παρουσιάσει, έως τα τέλη του 2012 ανάλυση των διαφόρων χρηματοδοτικών μέσων της ΕΕ και των κρατών μελών για την υποστήριξη της ενεργειακής αποδοτικότητας των κτιρίων, περιλαμβάνοντας ενδεχομένως συστάσεις σχετικά με τον τρόπο με τον οποίο η δημόσια χρηματοδότηση θα μπορούσε να χρησιμοποιηθεί για την τόνωση της ανακαίνισης κτιρίων·
- θα υποβάλει το 2013 τα προκαταρκτικά πορίσματα του εν εξελίξει πιλοτικού σχεδίου με στόχο την έρευνα του πεδίου εφαρμογής για την ανάπτυξη ασφαλιστικών καθεστώτων τα οποία θα μπορούσαν να καλύπτουν τις συμβατικές εγγυήσεις εκτέλεσης και τις διασυνοριακές υπηρεσίες, ιδίως για τους μικρούς εργολάβους δομικών κατασκευών·
- θα ξεκινήσει το 2012 μια εκστρατεία πληροφόρησης για τις επιχειρήσεις σχετικά με την καταπολέμηση των καθυστερήσεων πληρωμών στις εμπορικές συναλλαγές σε όλα τα κράτη μέλη
- θα εφαρμόσει το 2012, σε σχέση με την εν λόγω οδηγία για την καθυστέρηση πληρωμών, ένα πιλοτικό έργο για την ταχεία και αποτελεσματική διεκπεραίωση εκκρεμών αιτημάτων από ΜΜΕ που λειτουργούν διασυνοριακά.

Τα κράτη μέλη καλούνται:

- να αναπτύξουν ή να ενισχύσουν κατάλληλα προγράμματα για σχέδια επισκευής, συντήρησης και ανακαίνισης με φιλόδοξους στόχους βιωσιμότητας, συμπεριλαμβανομένης της εξέτασης του πεδίου εφαρμογής των σχετικών φορολογικών και χρηματοδοτικών μέσων (μειωμένος συντελεστής ΦΠΑ, στοχευμένες επιδοτήσεις, κ.λπ.) και των πιστωτικών μηχανισμών για σχέδια ανακαίνισης με φιλόδοξους στόχους βιωσιμότητας.
- να προωθήσουν τη χρήση χρηματοδοτικών μέσων και συστημάτων συνδρομής για την ανάπτυξη σχεδίων που προσφέρουν τα διαρθρωτικά ταμεία, η ΕΤΕπ, η ΕΤΑΑ και το ΕΤΕΑ για μικρά έργα ανακαίνισης με συμβατικές εγγυήσεις για τις επιδόσεις των κτιρίων, συμπεριλαμβανομένης της προκαταβολής κονδυλίων από τα διαρθρωτικά ταμεία για κτίρια με ενεργειακή αποδοτικότητα.

¹⁷ Οδηγία 2011/7/ΕΕ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου για την καταπολέμηση των καθυστερήσεων πληρωμών στις εμπορικές συναλλαγές (αναδιατύπωση), ΕΕ L 48 της 23.2.2011, σ. 1.

3.1.2 Μεσοπρόθεσμα έως μακροπρόθεσμα μέτρα

Η νέα πρόταση για μία πολιτική συνοχής της ΕΕ για την περίοδο 2014-2020¹⁸ δίνει ακόμη μεγαλύτερη έμφαση στη στήριξη των επενδύσεων που συνδέονται με τους στόχους της ΕΕ για το κλίμα και την ενέργεια, και προτείνει τον διπλασιασμό σχεδόν του ποσού που χορηγείται για την βιώσιμη ενέργεια στην τρέχουσα περίοδο. Προτείνεται να διατεθεί ένα σημαντικό μερίδιο των διαρθρωτικών ταμείων και του Ταμείου Συνοχής σε επενδύσεις για τη στήριξη της μετάβασης προς την οικονομία χαμηλών εκπομπών διοξειδίου του άνθρακα, ιδιαίτερα της ενεργειακής αποδοτικότητας και των ανανεώσιμων πηγών ενέργειας, μεταξύ άλλων στον τομέα της ανακαίνισης κτιρίων και τα χρηματοοικονομικά μέσα αναμένεται να διαδραματίσουν σημαντικό ρόλο στο μέλλον όσον αφορά τις εξατομικευμένες επενδύσεις στην ενεργειακή αποδοτικότητα και στις ανανεώσιμες πηγές ενέργειας σε αστικές υποδομές και στον κατασκευαστικό τομέα.

Καθοριστική σημασία για την οικονομία έχει η ανάπτυξη «κεντρικού δικτύου», όπως προτάθηκε από την Ευρωπαϊκή Επιτροπή, για την εξασφάλιση αποτελεσματικών πολλαπλών συνδυασμένων μεταφορικών μέσων μεταξύ των πρωτευουσών της ΕΕ και άλλων μεγάλων πόλεων, λιμένων, αερολιμένων, καθώς και άλλων κύριων οικονομικών κέντρων. Η Ευρωπαϊκή Επιτροπή παρουσίασε μια νέα δέσμη μέτρων στις 19 Οκτωβρίου 2011 με στόχο τη δημιουργία ενός ευνοϊκού πλαισίου για την ανάπτυξη των **διευρωπαϊκών δικτύων μεταφορών (ΔΕΔ-Μ)**. Αυτή η δέσμη περιλαμβάνει την αναθεώρηση των κατευθυντήριων γραμμών για το διευρωπαϊκό δίκτυο μεταφορών, τον μηχανισμό «Συνδέοντας την Ευρώπη», με συνολικό προϋπολογισμό 50 δισεκατομμυρίων ευρώ και μια πρόταση για την έγκαιρη υλοποίηση ομολόγων για έργα υποδομής, σε συνεργασία με την Ευρωπαϊκή Τράπεζα Επενδύσεων.

Στόχος είναι η δημιουργία «ολοκληρωμένου δικτύου» το αργότερο έως τις 31 Δεκεμβρίου 2050, ενώ το κεντρικό δίκτυο αναμένεται να υλοποιηθεί κατά προτεραιότητα το αργότερο έως τις 31 Δεκεμβρίου 2030. Οι διάδρομοι του κεντρικού δικτύου, όπως προτάθηκε από την Ευρωπαϊκή Επιτροπή στις 19 Οκτωβρίου 2011, και οι «πλατφόρμες» τους θα φέρουν σε επαφή τα ενδιαφερόμενα κράτη μέλη, καθώς και τους ενδιαφερόμενους φορείς, π.χ. τους διαχειριστές και τους χρήστες υποδομών για την εγγύηση του συντονισμού, της συνεργασίας και της διαφάνειας. Εκτός από αυτές τις προτάσεις, θα χρειαστεί ελάχιστη εναρμόνιση των εθνικών διοικητικών διαδικασιών προκειμένου να εξασφαλιστεί η ομαλή υλοποίηση των διασυνοριακών τμημάτων των δικτύων.

Οι δραστηριότητες **έρευνας και καινοτομίας** θα πρέπει να συνδυάζουν τις δραστηριότητες με τεχνολογικό προσανατολισμό¹⁹ με την κοινωνικοοικονομική έρευνα σε εργαλεία που βασίζονται στην αγορά και προσανατολίζονται στη ζήτηση (κατάρτιση, δημόσιες συμβάσεις, τυποποίηση, ασφάλιση, κ.λπ.), ώστε να επιταχυνθεί η μετάβαση από την έρευνα στην αξιοποίηση καινοτόμων λύσεων. Αυτό θα απαιτήσει ευρύτερες εταιρικές σχέσεις με τα διάφορα ενδιαφερόμενα μέρη στο πλαίσιο των πρωτοβουλιών που θα χρηματοδοτηθούν από διάφορα χρηματοδοτικά μέσα της ΕΕ προκειμένου να επιτευχθεί ευρύτερη προοπτική αγοράς και να δημιουργηθεί κρίσιμη μάζα. Στο πλαίσιο αυτό οι υφιστάμενες πρωτοβουλίες όπως «συμπράξεις δημόσιου και ιδιωτικού τομέα για κτίρια με υψηλή ενεργειακή απόδοση», «πολιτιστική κληρονομιά», «Ευφυείς Πόλεις και Κοινότητες» και **reFINE** (research for

¹⁸ COM(2011) 615 τελικό.

¹⁹ Αυτές θα καλύπτουν ένα ευρύ φάσμα τομείς, όπως τα νέα υλικά, η χρήση των ΤΠΕ, ανακύκλωση/ανάκτηση άλλων, των αποβλήτων κατασκευών και κατεδαφίσεων, της άνεσης των κτιρίων, κ.λπ.

Future Infrastructure Networks in Europe - έρευνα για μελλοντικά δίκτυα υποδομής στην Ευρώπη) θα μπορούσαν να αποτελέσουν την αντίστοιχη βάση για την ανάπτυξη αυτών των εταιρικών σχέσεων. Η πολιτική συνοχής της ΕΕ μπορεί να παρέχει υποστήριξη για την έρευνα και την καινοτομία στους εν λόγω τομείς, στο πλαίσιο εθνικών προγραμμάτων και θα συνεχίσει επίσης να δίνει ιδιαίτερη έμφαση στην ενίσχυση της ανταγωνιστικότητας των ΜΜΕ, καθώς και της χρήσης των ΤΠΕ. Ειδικότερα, η ανάπτυξη στρατηγικών καινοτομίας για έξυπνη εξειδίκευση, όπως προτείνεται από την Επιτροπή ως προϋπόθεση για τη χρήση των διαρθρωτικών ταμείων κατά την επόμενη περίοδο προγραμματισμού 2014-2020, θα συμβάλει στην παροχή πιο στοχοθετημένης στήριξης από τα διαρθρωτικά ταμεία καθώς και μια στρατηγική προσέγγιση για την αξιοποίηση των δυνατοτήτων για την έξυπνη ανάπτυξη σε όλες τις περιφέρειες²⁰.

Η Επιτροπή:

- πρότεινε στο πλαίσιο της πολιτικής συνοχής για την περίοδο 2014-2020 να χορηγηθεί ένα σημαντικό μερίδιο των διαρθρωτικών ταμείων και του Ταμείου Συνοχής για επενδύσεις προς στήριξη της μετάβασης προς την οικονομία χαμηλών εκπομπών διοξειδίου του άνθρακα, ιδιαίτερα της ενεργειακής απόδοσης και των ανανεώσιμων πηγών ενέργειας, μεταξύ άλλων για την ανακαίνιση κτιρίων, και θα εξακολουθήσει να ενθαρρύνει τη χρήση ανανεώσιμων κεφαλαίων στον τομέα αυτό προκειμένου να εξασφαλιστεί μεγαλύτερο αποτέλεσμα μόχλευσης·
- θα αναπτύξει ένα σύνολο βασικών απαιτήσεων στον τομέα των δομικών έργων που πρέπει να πληρούν τα διασυνοριακά τμήματα των έργων ΔΕΔ προκειμένου να εξασφαλιστεί η ελάχιστη εναρμόνιση σε τεχνικό επίπεδο των αντίστοιχων εθνικών διαδικασιών έκδοσης αδειών·
- θα οργανώσει, την άνοιξη του 2013, ένα συνέδριο σχετικά με την καινοτομία στον τομέα των δομικών κατασκευών για τον εντοπισμό των τεχνολογικών κενών που υφίστανται καθ' όλο το μήκος της αλυσίδας αξίας και για τον καθορισμό σχεδίου δράσης για την αντιμετώπισή τους.

Τα κράτη μέλη καλούνται:

- να αναπτύξουν, σε συνεργασία με άλλα κράτη μέλη και με τον ιδιωτικό τομέα κοινές συντονισμένες πρωτοβουλίες που θα συνδυάζουν την έρευνα, την τεχνολογική ανάπτυξη, τις καινοτόμες συμβάσεις, την πιστοποίηση, την ασφάλιση, τις διαπεριφερειακές ομάδες, κ.λπ. για να επιταχυνθεί η αξιοποίηση νέων γνώσεων και τεχνολογιών σε επίπεδο ΕΕ όσο και σε περιφερειακά επίπεδα. Η ΕΕ θα υποστηρίξει αυτές τις πρωτοβουλίες με το πρόγραμμα «Ορίζοντας 2020» και «Ανταγωνιστικότητα των επιχειρήσεων και ΜΜΕ (COSME) για την περίοδο 2014-2020», όχι μόνον με άμεσες επιχορηγήσεις αλλά και με χρηματοοικονομικά μέσα για τη βελτίωση της πρόσβασης στη χρηματοδότηση των ΜΜΕ με τη μορφή ιδίων κεφαλαίων και δανείων. Οι εθνικές και περιφερειακές αρχές καλούνται να εξασφαλίσουν την αποτελεσματική και συμπληρωματική χρήση των διαφόρων πηγών στήριξης της ΕΕ, συμπεριλαμβανομένων των κονδυλίων της πολιτικής συνοχής με την προϋπόθεση ότι τα συναφή επιχειρησιακά προγράμματα επιτρέπουν τη λήψη τέτοιου είδους μέτρων.

²⁰

<http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3platform.cfm>.

3.2. Βελτίωση της βάσης του ανθρώπινου κεφαλαίου στον κατασκευαστικό τομέα

Σήμερα, υπάρχει σημαντική έλλειψη ειδικευμένου προσωπικού στα εργοτάξια δομικών κατασκευών και σε μικρότερο βαθμό στον κλάδο παραγωγής προϊόντων για τον κατασκευαστικό τομέα. Επιπλέον, τα συστήματα εκπαίδευσης και κατάρτισης στην Ευρώπη παρουσιάζουν μεγάλη ποικιλία ως προς το βαθμό συγκέντρωσης ή αποκέντρωσης, τη δομή της παροχής κατάρτισης, τον ρόλο των κοινωνικών εταίρων, τις χρηματοδοτικές δομές και το περιεχόμενο του προγράμματος σπουδών.

Είναι αναγκαίο να προβλεφθούν καλύτερα οι μελλοντικές ανάγκες σε δεξιότητες και προσόντα, για να προσελκύεται επαρκής αριθμός σπουδαστών στα αντίστοιχα επαγγέλματα του κατασκευαστικού τομέα και να δημιουργηθούν οι προϋποθέσεις για ένα καλύτερο εργασιακό περιβάλλον και για τη διαχείριση της επαγγελματικής σταδιοδρομίας, για τη μεγαλύτερη κινητικότητα των εργαζομένων του κατασκευαστικού τομέα και για την ευρύτερη παροχή διασυνοριακών υπηρεσιών. Πρέπει να λαμβάνονται υπόψη ο αντίκτυπος της γήρανσης του εργατικού δυναμικού της ΕΕ και η ειδική κατάσταση του τομέα όσον αφορά την επαγγελματική υγεία και ασφάλεια.

3.2.1 Βραχυπρόθεσμα μέτρα

Η πρωτοβουλία δημιουργίας δεξιοτήτων που υλοποιήθηκε στο πλαίσιο του προγράμματος «Ευφυής ενέργεια για την Ευρώπη», έχει ως στόχο την προσαρμογή του συστήματος της επαγγελματικής εκπαίδευσης και κατάρτισης (EEK) στις ανάγκες σε δεξιότητες και προσόντα, όσον αφορά την ενεργειακή απόδοση και τις ανανεώσιμες πηγές ενέργειας. Η δημιουργία δεξιοτήτων θα επιτρέψει τον καθορισμό των εθνικών οδικών χαρτών τυπικών προσόντων έως το 2020 και την υποστήριξη της σύστασης συστημάτων κατάρτισης ευρείας κλίμακας και πιστοποίησης, καθώς και τον σχεδιασμό τυπικών προσόντων και την αναβάθμιση των υφιστάμενων δομών, ανάλογα με την περίπτωση, με την υποστήριξη των χρηματοδοτικών μέσων, όπως το Ευρωπαϊκό Κοινωνικό Ταμείο και το πρόγραμμα για τη δια βίου μάθηση και το προτεινόμενο διάδοχο πρόγραμμα, το πρόγραμμα Erasmus για όλους. Έτσι θα αυξηθεί ο αριθμός των ειδικευμένων εργαζομένων εργοταξίου στην αγορά και θα βελτιωθεί η εμπιστοσύνη των ιδιοκτητών κτιρίων ώστε να κάνουν επενδύσεις με σκοπό τη βελτίωση της ενεργειακής απόδοσης.

Η πρωτοβουλία αυτή θα μπορούσε επίσης να χρησιμεύσει ως βάση για τον εντοπισμό των αναγκών όσον αφορά τα προγράμματα σπουδών, τα προγράμματα κατάρτισης ή τα τυπικά προσόντα σε άλλους τομείς που έχουν σχέση με τις δομικές κατασκευές και την αειφόρο ανάπτυξη (π.χ. την εκβιομηχάνιση της διαδικασίας δομικών κατασκευών και την χρήση καινοτόμων ή μη συμβατικών προϊόντων του κατασκευαστικού τομέα, την προσφυγή στις τεχνολογίες πληροφορίας και επικοινωνίας στη δημιουργία συστημάτων διαχείρισης, κ.λπ.).

Η Επιτροπή:

- θα προβεί σε αξιολόγηση της πρωτοβουλίας για τη δημιουργία δεξιοτήτων και ειδικότερα θα αξιολογήσει κατά πόσον θα ήταν σκόπιμο να επεκταθεί το πεδίο εφαρμογής της πρώτης πρωτοβουλίας ώστε να συμπεριληφθούν σ' αυτή άλλες κατηγορίες επαγγελματιών στον τομέα των δομικών κατασκευών ή άλλες ανάγκες σε τυπικά προσόντα σε σχέση με τη διαδικασία δομικών κατασκευών και την αειφόρο ανάπτυξη.

Κράτη μέλη, οργανώσεις και εκπαιδευτικά ιδρύματα στον τομέα των δομικών κατασκευών:

- θα διαπραγματεύονται συλλογικές συμφωνίες για τη στήριξη της ανάπτυξης των

δεξιοτήτων σε σχέση με την πρωτοβουλία δημιουργίας δεξιοτήτων ή άλλα παρόμοια συστήματα.

3.2.2 Μεσοπρόθεσμα και μακροπρόθεσμα μέτρα

Ο τομέας των δομικών κατασκευών πρέπει να βελτιώσει την ικανότητά του να εντοπίζει και προλαμβάνει τις ανάγκες σε δεξιότητες, σε μία στρατηγική προοπτική, και να προσαρμόζει ανάλογα τα προγράμματα κατάρτισης και σχεδιασμού τυπικών προσόντων. Σε ορισμένες χώρες υπάρχουν πλατφόρμες για τον εντοπισμό των μελλοντικών αναγκών σε θέσεις εργασίας και δεξιότητες με έμμεσο αντίκτυπο στον κατασκευαστικό τομέα. Μια πρωτοβουλία σε ευρωπαϊκό επίπεδο με την υποστήριξη του κοινωνικού διαλόγου θα μπορούσε να βελτιώσει την ανταλλαγή πληροφοριών σχετικά με τις εν λόγω ανάγκες, συμπεριλαμβανομένων της ετοιμότητας του τομέα να υιοθετήσει πρακτικές για την αποδοτική χρήση των πόρων και για την προμήθεια βιώσιμων κτιρίων, καθώς και της ικανότητας των εκπαιδευτικών συστημάτων για να αντιμετωπίσουν αυτές τις ανάγκες.

Στο πλαίσιο αυτό, η Ευρωπαϊκή Επιτροπή θα υποστηρίζει οικονομικά το 2012 μια μελέτη σκοπιμότητας από τους ευρωπαίους κοινωνικούς εταίρους σχετικά με τη δημιουργία ενός ευρωπαϊκού τομεακού συμβουλίου δεξιοτήτων. Τα ευρωπαϊκά τομεακά συμβούλια δεξιοτήτων είναι δίκτυα εθνικών παρατηρητηρίων της αγοράς εργασίας και ανάλυσης των δεξιοτήτων σε τομεακό επίπεδο, τα οποία, υπό την καθοδήγηση εκπροσώπων των διαφόρων τομέων, των ευρωπαϊών κοινωνικών εταίρων και με τη συμμετοχή των εκπροσώπων των πάροχων εκπαίδευσης και κατάρτισης, ανταλλάσσουν πληροφορίες και καλές πρακτικές προκειμένου να εκπονήσουν συστάσεις για την εξέλιξη των δεξιοτήτων και των θέσεων εργασίας.

Επίσης το 2012, η Επιτροπή θα εξετάσει τη σκοπιμότητα βιώσιμης δημιουργίας συμμαχιών τομεακών δεξιοτήτων μεταξύ πάροχων ΕΕΚ, επιχειρήσεων και άλλων ενδιαφερόμενων μερών με σκοπό την παροχή κατάλληλων, επικαιροποιημένων και νέων προγραμμάτων σπουδών και πρακτικής άσκησης, καθώς και καινοτόμων τρόπων παροχής ΕΕΚ.

Η προώθηση και ανάπτυξη των μέσων που έχουν αναπτυχθεί στο πλαίσιο της πολιτικής της ΕΕ για τη συνεχή εκπαίδευση θα πρέπει να ενθαρρύνουν την κινητικότητα ειδικευμένων εργαζομένων. Η οδηγία για την απόσπαση των εργαζομένων προβλέπει ένα «σκληρό πυρήνα» σαφώς καθορισμένων όρων και συνθηκών εργασίας και απασχόλησης για την ελάχιστη προστασία των εργαζομένων, που πρέπει να τηρούνται από τον πάροχο υπηρεσιών στην χώρα υποδοχής. Κατά τον τρόπο αυτό, η οδηγία παρέχει ένα ικανοποιητικό επίπεδο προστασίας για τους αποσπασμένους εργαζόμενους. Για να αποφεύγονται τυχόν καταχρήσεις και καταστρατηγήσεις των κανόνων, καθώς και το «κοινωνικό ντάμπινγκ» σε περίπτωση που οι πάροχοι υπηρεσιών άλλου κράτους μέλους εκτός του κράτους μέλους υποδοχής μπορούν να προσφέρουν υπηρεσίες σε χαμηλότερες τιμές από εκείνες των τοπικών πάροχων, επειδή έχουν χαμηλότερα πρότυπα εργασίας, πρέπει να βελτιωθεί η εφαρμογή της οδηγίας για την απόσπαση των εργαζομένων, ιδίως μέσω της καλύτερης ενημέρωσης για τις ισχύουσες συνθήκες εργασίας, της αποτελεσματικότερης διοικητικής συνεργασίας και ανταλλαγής πληροφοριών μεταξύ των αρχών επιθεώρησης, των αποτελεσματικότερων επιθεωρήσεων και της πρόβλεψης κοινής και εις ολόκληρον ευθύνης για τους μισθούς των αποσπασμένων εργαζομένων.

Τέλος, ο τομέας αντιμετωπίζει μια διπλή πρόκληση λόγω των δημογραφικών αλλαγών. Αφενός, οι κατασκευαστικές επιχειρήσεις της ΕΕ θα πρέπει να αναζητήσουν στρατηγικές ώστε να αντισταθμιστεί ο όλο και μικρότερος αριθμός νέων εργαζομένων της ΕΕ που

δραστηριοποιούνται στον τομέα με τον σημαντικό αριθμό εργαζομένων που πρόκειται να συνταξιοδοτηθούν τα επόμενα χρόνια· αφετέρου, οι συνθήκες εργασίας θα πρέπει να βελτιωθούν προκειμένου να εξασφαλισθεί υψηλότερο προσδόκιμο ζωής. Αυτή η διπλή πρόκληση απαιτεί πιο ελκυστικό περιβάλλον εργασίας και μεγαλύτερη προσοχή σε θέματα υγείας και ασφάλειας στο μέλλον, προκειμένου να αποφευχθούν οι πρόωρες συνταξιοδοτήσεις λόγω εργατικού ατυχήματος ή επαγγελματικής ασθένειας.

Η Επιτροπή:

- θα προωθήσει, στο πλαίσιο του ευρωπαϊκού κοινωνικού διαλόγου της ΕΕ, πρωτοβουλίες με στόχο την προσαρμογή της επαγγελματικής εκπαίδευσης και κατάρτισης στις μελλοντικές ανάγκες σε επαγγελματικά προσόντα και δεξιότητες του κατασκευαστικού τομέα, ιδίως σε σχέση με την αποδοτικότητα των πόρων, τον εντοπισμό βασικών απαιτήσεων για δεξιότητες σε συγκεκριμένους κλάδους και τη διευκόλυνση της αμοιβαίας αναγνώρισης των επαγγελματικών προσόντων·
- θα υποστηρίξει τους ευρωπαίους κοινωνικούς εταίρους του κατασκευαστικού τομέα για τη δημιουργία ενός ευρωπαϊκού τομεακού συμβουλίου δεξιοτήτων για τον κατασκευαστικό τομέα
- θα τους ενθαρρύνει να αναπτύξουν πρωτοβουλίες σε τομείς όπως η ενεργειακή απόδοση των κτιρίων και η αποδοτική χρήση πόρων στα κτίρια, η υγεία και η ασφάλεια, τα πρότυπα ποιότητας και κατάρτισης, συμπεριλαμβανομένης της μαθητείας για τους νέους. Οι πρωτοβουλίες αυτές μπορεί να λάβουν τη μορφή εκστρατειών ενημέρωσης και κατάρτισης και περιλαμβάνουν, ανάλογα με το εκάστοτε εθνικό πλαίσιο, την από κοινού διαχείριση των κονδυλίων.
- μέσω του προγράμματος διά βίου μάθησης, θα δοκιμάσει τη σκοπιμότητα των συμμαχιών τομεακών δεξιοτήτων στον βιώσιμο κατασκευαστικό τομέα, δηλαδή συμπράξεων μεταξύ πάροχων ΕΕΚ, επιχειρήσεων και άλλων ενδιαφερόμενων μερών με σκοπό την παροχή κατάλληλων προγραμμάτων σπουδών ή προσόντων ΕΕΚ, καθώς και καινοτόμων τρόπων για την παροχή επαγγελματικής εκπαίδευσης και κατάρτισης·

Τα κράτη μέλη, οι κοινωνικοί εταίροι στον κατασκευαστικό τομέα και τα εκπαιδευτικά ιδρύματα καλούνται:

- να ενεργήσουν άμεσα για να εκδώσουν την νέα πρόταση οδηγίας²¹ σχετικά με την επιβολή της οδηγίας 96/71/ΕΚ σχετικά με την απόσπαση εργαζομένων στο πλαίσιο της παροχής υπηρεσιών·
- να δημιουργηθούν συμπράξεις για τη στήριξη κατάλληλων συστημάτων επαγγελματικής εκπαίδευσης και κατάρτισης σε εθνικό και περιφερειακό επίπεδο, που ανταποκρίνονται στις τρέχουσες και στις αναδυόμενες ανάγκες του τομέα δομικών κατασκευών, ειδικότερα για την ενίσχυση της διαχειριστικής ικανότητας και την ανάπτυξη των ΤΠΕ·
- να διοργανώσουν και να στηρίζουν ενημερωτικές εκστρατείες για να καταστήσουν τον κατασκευαστικό τομέα πιο ελκυστικό σε ταλαντούχα άτομα.

²¹ COM(2012)131/3.

3.3 Βελτίωση της αποδοτικής χρήσης των πόρων, των περιβαλλοντικών επιδόσεων και των επιχειρηματικών ευκαιριών

Ο χάρτης πορείας για μια Ευρώπη που χρησιμοποιεί αποδοτικά τους πόρους²² περιγράφει τις σημαντικές επιπτώσεις των δομικών κατασκευών στους φυσικούς πόρους, στην ενέργεια, στο περιβάλλον και στην κλιματική αλλαγή. Η επίτευξη σημαντικών βελτιώσεων στις κατασκευαστικές δραστηριότητες και στα κατασκευαστικά έργα σε όλη τη διάρκεια του κύκλου ζωής τους, μπορεί να συμβάλλει στη δημιουργία ανταγωνιστικού κατασκευαστικού τομέα και στην ανάπτυξη αποθέματος κτιρίων με αποδοτική χρήση πόρων και ενέργειας, ενώ όλα τα νέα κτίρια θα έχουν σχεδόν μηδενική κατανάλωση ενέργειας και θα χρησιμοποιούνται δομικά υλικά πιο οικονομικά στην κατανάλωση πόρων.

Οι βελτιώσεις στις δραστηριότητες στον τομέα των δομικών κατασκευών και κατασκευαστικών έργων ανοίγουν συμπληρωματικές επιχειρηματικές ευκαιρίες, ιδίως για τις ΜΜΕ, επειδή τα μέτρα που χρειάζονται, μπορεί να εξαρτώνται από τοπικές συνθήκες και να απαιτούν ατομικές λύσεις. Όπως αναφέρεται ήδη στον «Χάρτη πορείας για μια Ευρώπη που χρησιμοποιεί αποδοτικά τους πόρους της», η Επιτροπή πρόκειται να υποβάλει το 2013 ανακοίνωση σχετικά με τα βιώσιμα κτίρια, στην οποία θα καθορίζονται και θα παρουσιάζονται αναλυτικά περισσότερες ενέργειες με στόχο την υποστήριξη του τομέα ώστε να χρησιμοποιεί αποδοτικά τους πόρους.

Προκειμένου να μπορέσει η έννοια του βιώσιμου κατασκευαστικού τομέα να γίνει καλύτερα κατανοητή και να γίνει ευρύτερη η χρήση της θα πρέπει να αναπτυχθούν εναρμονισμένοι δείκτες, κωδικοί και μέθοδοι για την αξιολόγηση των περιβαλλοντικών επιδόσεων για τα προϊόντα, τις διαδικασίες και τα έργα του κατασκευαστικού τομέα. Θα πρέπει να διασφαλίζουν μια συνεκτική και αμοιβαία αναγνωρισμένη ερμηνεία των επιδόσεων και να διατηρούν την ορθή λειτουργία της εσωτερικής αγοράς για τα προϊόντα και τις υπηρεσίες του κατασκευαστικού τομέα.

Η Επιτροπή θα προτείνει προσεγγίσεις για την αμοιβαία αναγνώριση ή την εναρμόνιση των διαφόρων υφιστάμενων μεθόδων αξιολόγησης, επίσης, με σκοπό, να καταστούν πιο λειτουργικές και οικονομικά προσιτές για τις επιχειρήσεις δομικών κατασκευών, τον ασφαλιστικό κλάδο και τους επενδυτές. Η πρωτοβουλία αυτή θα βασίζεται σε υπάρχουσες πλατφόρμες, όπως π.χ. το δίκτυο του κατασκευαστικού τομέα της CEN, σε οδηγούς όπως ο οδηγός ΚΚΕρ για την ανάλυση και την αξιολόγηση του κύκλου ζωής των προϊόντων και σε ευρωπαϊκά ερευνητικά έργα όπως «SuperBuildings» και «Open House».

Το έργο αυτό θα συμβάλει περαιτέρω στην ανάπτυξη μιας πιο συστηματικής προσέγγισης όσον αφορά την αξιολόγηση των διαστάσεων βιωσιμότητας των έργων που χρηματοδοτούνται από προγράμματα κρατικής στήριξης, συμπεριλαμβανομένων προτύπων της ΕΕ για την ανάλυση κόστους-οφέλους. Πιλοτικά σχέδια που αναπτύσσονται στο πλαίσιο των οικολογικών δημόσιων συμβάσεων και της περιφερειακής πολιτικής θα μπορούσαν να προσφέρουν στις αρχές προγραμματισμού και στις αναθέτουσες αρχές τα κατάλληλα μέσα, ιδίως για την ανακαίνιση των υφιστάμενων κτιρίων και την αναβάθμιση της υποδομής των μεταφορών.

Ενδιαφερόμενα μέρη του εν λόγω κλάδου παραγωγής ανέφεραν κατά τη δημόσια διαβούλευση ότι ορισμένα δομικά έργα ενδέχεται να παρεμποδίζονται από την εθνική διαδικασία έγκρισης, π.χ. καθυστερήσεις λόγω αντίθεσης της κοινής γνώμης, θέματα

²² COM(2011) 571 τελικό.

απαλλοτριώσης και ανάγκη απόκτησης πολλών διαφορετικών αδειών συμπεριλαμβανομένων των περιβαλλοντικών. Τα θέματα αυτά εντοπίστηκαν στο πλαίσιο της συνεχιζόμενης αναθεώρησης της οδηγίας για την εκτίμηση των περιβαλλοντικών επιπτώσεων (ΕΠΕ)²³, η οποία αποσκοπεί, μεταξύ άλλων, στην απλούστευση και τον εξορθολογισμό των υφιστάμενων διαδικασιών, και, ως εκ τούτου, θα έχει θετικές επιπτώσεις από την άποψη αυτή, αφού η ΕΠΕ αποτελεί μέρος της διαδικασίας έγκρισης. Τα περισσότερα εμπόδια προκύπτουν από τις διάφορες διατάξεις των εθνικών νομοθεσιών και τις διοικητικές διαδικασίες που ρυθμίζουν τη διαδικασία χορήγησης αδειών. Αυτό μπορεί να εμποδίσει τη δημιουργία ισότιμων όρων ανταγωνισμού και τη διάδοση των περιβαλλοντικών τεχνολογιών. Μολονότι αναγνωρίζεται ότι οι νομοθεσίες αυτές περιλαμβάνουν συχνά τομείς που ανήκουν στην αποκλειστική αρμοδιότητα των κρατών μελών (π.χ. θέματα ιδιοκτησίας), η Επιτροπή θα ενθαρρύνει την ανταλλαγή πληροφοριών και την προώθηση των βέλτιστων πρακτικών, π.χ. μέσω εθελοντικής υιοθέτησης κωδικών συμπεριφοράς, οι οποίες καλύπτουν θέματα, όπως η διάρκεια και τα στάδια της διαδικασίας ή η θέσπιση διαδικασίας διαιτησίας μεταξύ διοικητικών υπηρεσιών.

Τέλος, ο στόχος επαναχρησιμοποίησης, ανακύκλωσης και/ή ανάκτησης του 70% των αποβλήτων δομικών κατασκευών και κατεδαφίσεων μέχρι το 2020, σύμφωνα με την οδηγία-πλαίσιο για τα απόβλητα αποτελεί μια πολύτιμη ευκαιρία για την κατασκευή αλυσίδας αξίας. Καλύτεροι και σαφέστεροι ορισμοί για τα απόβλητα, εναρμονισμένοι όροι καταχώρισης για τη μεταφορά αποβλήτων και εναρμονισμένοι κανόνες σχετικά με τα χαρακτηριστικά των προϊόντων του κατασκευαστικού τομέα όσον αφορά τη χρήση υλικών, τη διάρκεια ζωής και τη συμβατότητα με την προστασία του περιβάλλοντος θα μπορούσαν να είναι ωφέλιμοι για τον κλάδο αυτόν παραγωγής.

Η Επιτροπή:

- θα υποβάλει πρωτοβουλίες για τη βελτίωση των μεθόδων αμοιβαίας αναγνώρισης των περιβαλλοντικών επιδόσεων και εκτίμησης της επικινδυνότητας, ιδίως στο πλαίσιο των δραστηριοτήτων τυποποίησης και των καθεστώτων ασφάλισης της ΕΕ·
- θα στηρίξει την ανάπτυξη ενός πανευρωπαϊκού προτύπου για τον κύκλο ζωής της σχέσης κόστους-οφέλους για τις οικολογικές δημόσιες συμβάσεις και για τις αρχές που διέπουν τη βιώσιμη ανάπτυξη στον τομέα της περιφερειακής πολιτικής·
- θα αξιολογήσει εμπόδια που απορρέουν από την εθνική νομοθεσία που διέπει τη διαδικασία έγκρισης μεγάλων κατασκευαστικών έργων, με σκοπό τον εντοπισμό ορθών πρακτικών για τον εξορθολογισμό των διαδικασιών (π.χ. οι κώδικες δεοντολογίας για τη διαδικασία χορήγησης άδειας, διαδικασία διαιτησίας μεταξύ διοικήσεων)·
- θα αναπτύξει εναρμονισμένους κανόνες που εφαρμόζονται για τη δήλωση των χαρακτηριστικών απόδοσης των προϊόντων του κατασκευαστικού τομέα σε σχέση με την αειφόρο χρήση των φυσικών πόρων στο πλαίσιο του κανονισμού για τα προϊόντα του κατασκευαστικού τομέα .

Τα κράτη μέλη καλούνται:

- να αξιολογήσουν τις επιδόσεις των διαφόρων υποτομέων του κατασκευαστικού

²³ Οδηγία 85/337/ΕΟΚ, όπως τροποποιήθηκε, σχετικά με την εκτίμηση των επιπτώσεων ορισμένων σχεδίων δημοσίων και ιδιωτικών έργων στο περιβάλλον.

τομέα όσον αφορά την ανταγωνιστικότητα και την αιεφόρο ανάπτυξη, σε εθνικό και περιφερειακό επίπεδο.

3.4 Ενίσχυση της εσωτερικής αγοράς για τον κατασκευαστικό τομέα

Ο κατασκευαστικός τομέας είναι εξαιρετικά ρυθμιζόμενος σε πολλά επίπεδα (π.χ. προϊόντα, έργα, επαγγελματικά προσόντα, επαγγελματική υγεία και ασφάλεια, περιβαλλοντικές επιπτώσεις) και πολλές πτυχές ανήκουν στην αρμοδιότητα των κρατών μελών. Προκειμένου να διασφαλιστεί η καλύτερη λειτουργία της εσωτερικής αγοράς για τα προϊόντα και τις υπηρεσίες του κατασκευαστικού τομέα, είναι σημαντικό το νομικό πλαίσιο να είναι όσο το δυνατό πιο σαφές και πιο προβλέψιμο και το διοικητικό κόστος να είναι αναλογικό με τους επιδιωκόμενους στόχους.

Αυτό θα απαιτήσει μια πιο συστηματική ανάλυση των διαφόρων κανονιστικών προσεγγίσεων και των διοικητικών διατάξεων που διέπουν την εφαρμογή της νομοθεσίας της ΕΕ όσον αφορά τον κατασκευαστικό τομέα. Αυτή η ανάλυση θα επισημαίνει τον τρόπο με τον οποίο οι διάφορες νομικές πράξεις της ΕΕ αλληλεπιδρούν σε ευρωπαϊκό και εθνικό επίπεδο και εάν χρειάζονται διευκρινίσεις ή συμπληρωματικά μέτρα για να περιοριστεί η διοικητική επιβάρυνση των κατασκευαστικών επιχειρήσεων και να βελτιωθεί η λειτουργία της εσωτερικής αγοράς στον κατασκευαστικό τομέα. Όσον αφορά τις διασυννοριακές υπηρεσίες, οι «έλεγχοι επιδόσεων» που πραγματοποιήθηκαν το 2011-2012, αξιολόγησαν την αλληλεπίδραση διαφόρων νομικών πράξεων της ΕΕ που επηρεάζουν τον κατασκευαστικό τομέα, εντοπίζοντας έτσι ορισμένες εσφαλμένες εφαρμογές της νομοθεσίας της ΕΕ και ανάγκες διευκρίνισης και νέων μέτρων που πρέπει να ληφθούν. Στη συνέχεια θα διατυπωθούν συστάσεις για την επίτευξη της διαδικασίας σύγκλισης των διάφορων εθνικών και περιφερειακών ρυθμιστικών προσεγγίσεων.

Οι ευρωκώδικες θα μπορούσαν να διευκολύνουν αυτή τη διαδικασία σύγκλισης. Αποτελούν ένα σύνολο προτύπων σχεδιασμού και είναι οι πλέον πρόσφατοι κώδικες πρακτικής που εφαρμόζονται στο σύνολο των κύριων δομικών υλικών, σε όλους τους βασικούς τομείς της τεχνικής κατασκευών και σε ένα ευρύ φάσμα τύπων κατασκευών και προϊόντων. Είναι ένα εύκαμπτο εργαλείο, δεδομένου ότι κάθε χώρα έχει τη δυνατότητα προσαρμογής των ευρωκωδίκων στις δικές της ιδιαίτερες συνθήκες και σε εκτίμηση επικινδυνότητας όσον αφορά το κλίμα, τον σεισμικό κίνδυνο, τις παραδόσεις, κλπ. Η Επιτροπή ενθαρρύνει τα κράτη μέλη της ΕΕ να υιοθετήσουν τους ευρωκώδικες ως τους οικείους εθνικούς κώδικες σχεδιασμού²⁴, ώστε να διασφαλίζεται ότι τα κτίρια είναι θωρακισμένα έναντι καταστροφών.

Οι δραστηριότητες επικοινωνίας και διάδοσης, όπως η διαδικτυακή πύλη της πρωτοβουλίας BUILD UP²⁵ θα μπορούσαν επίσης να υποστηρίξουν την εφαρμογή της νομοθεσίας και την υιοθέτηση νέων λύσεων για την αγορά.

Η Επιτροπή:

- θα αναλάβει «ελέγχους καταλληλότητας» της νομοθεσίας της ΕΕ για τον εντοπισμό υπερβολικών διοικητικών βαρών, αλληλοεπικαλύψεων, αποκλίσεων, ανακολουθιών και παρωχημένων μέτρων·
- θα καθορίσει τον κατασκευαστικό τομέα ως προτεραιότητα δίνοντας συνέχεια στην ανακοίνωση όσον αφορά την εφαρμογή της οδηγίας για τις υπηρεσίες με τίτλο

²⁴ Σύσταση 2003/887/ΕΚ της Επιτροπής, της 11ης Δεκεμβρίου 2003.

²⁵ www.buildup.eu.

«εταιρική σχέση για τη νέα ανάπτυξη στον τομέα των υπηρεσιών»²⁶.

- Θα συντάξει έκθεση σχετικά με την εφαρμογή των ευρωκωδίκων στα κράτη μέλη σε συνάρτηση με τη σύσταση της Επιτροπής 2003/887/EK· με βάση τα αποτελέσματα αυτής της έκθεσης, η Επιτροπή θα προτείνει δράση για την ενίσχυση ή, εάν χρειαστεί, την επιβολή της χρήσης των ευρωκωδίκων στις δημόσιες συμβάσεις και σε άλλα μέσα, όπως οι εθνικές εκτιμήσεις επικινδυνότητας και τα σχέδια διαχείρισης.

Τα κράτη μέλη καλούνται:

- να αναπτύξουν αποτελεσματικά εργαλεία για την εποπτεία της αγοράς σε σχέση με την εφαρμογή της ευρωπαϊκής νομοθεσίας, στο πλαίσιο της εφαρμογής του κανονισμού (ΕΚ) αριθ. 765/2008.

3.5 Ενίσχυση της παγκόσμιας ανταγωνιστικής θέσης των επιχειρήσεων δομικών κατασκευών της ΕΕ

Από το 2006, στο πλαίσιο των διεθνών εμπορικών διαπραγματεύσεων που διεξήγαγε η Επιτροπή, βασική επιδίωξή της ήταν να επιτύχει την ανάληψη εκ μέρους άλλων εμπορικών εταιριών φιλόδοξων δεσμεύσεων για την πρόσβαση στην αγορά υπηρεσιών και δημόσιων συμβάσεων, και ειδικότερα στον τομέα των δημοσίων έργων. Ένα από τα πιο πρόσφατα επιτεύγματα είναι το άνοιγμα των κορεατικών συμβάσεων παραχώρησης σε προμηθευτές της ΕΕ, στο πλαίσιο της συμφωνίας ελεύθερων συναλλαγών μεταξύ της ΕΕ και της Κορέας.

Ειδικά διηπειρωτικά φόρουμ με την Αφρική και τη Λατινική Αμερική για βιώσιμες δομικές κατασκευές θα μπορούσαν να ενθαρρύνουν την μετατροπή των δημοσίων συμβάσεων στις αγορές αυτές, ώστε να λαμβάνονται υπόψη τα κριτήρια επιδόσεων, η βιωσιμότητα και η σχέση κόστους αποτελεσματικότητας.

Η εταιρική σχέση ΕΕ-Αφρικής για τις υποδομές μεταφορών²⁷ παρέχει ευκαιρίες για τη βελτίωση των διηπειρωτικών συνδέσεων και θα δημιουργήσει ένα πιο αξιόπιστο και πιο ασφαλές σύστημα μεταφορών.

Όσον αφορά τη χρηματοδότηση των υποδομών, διάφορα χρηματοδοτικά μέσα και τα ταμεία συνεργασίας θα μπορούσαν επιπλέον να στηρίζουν την εφαρμογή των κατάλληλων μέτρων.

Η πρωτοβουλία της ΕΕ «Μικρές επιχειρήσεις, μεγάλες κόσμος» θα προσφέρει σημαντικές πληροφορίες, συμβουλές και βοήθεια στους μικρούς εξειδικευμένους εργολάβους στην προσπάθειά τους να έχουν πρόσβαση σε διεθνείς αγορές και να εξεύρουν πιθανούς επιχειρηματικούς εταίρους. Το Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης (ΕΤΠΑ) διευκολύνει επίσης την ανάπτυξη νέων επιχειρηματικών προτύπων για τις ΜΜΕ, ιδίως υπό το πρίσμα της διεθνοποίησης.

Υπάρχει σημαντικό ενδιαφέρον για τη χρήση των ΕΝ ευρωκωδίκων εκτός της ΕΕ από χώρες που επιθυμούν να αντικαταστήσουν ή να επικαιροποιήσουν τα εθνικά πρότυπα τους με βάση τεχνικά προηγμένους κώδικες ή που ενδιαφέρονται για το εμπόριο με την Ευρωπαϊκή Ένωση και τα κράτη μέλη της ΕΖΕΣ. Ο κανονιστικός διάλογος ΕΕ – Ρωσία² έχει σημειώσει σημαντική πρόοδο από αυτή την άποψη.

²⁶ COM(2012) 261 τελικό.

²⁷ COM(2009) 301 τελικό.

Η Επιτροπή:

- πρότείνει μια νομοθετική πρωτοβουλία²⁸ με σκοπό να εξασφαλιστεί το άνοιγμα των αγορών δημοσίων συμβάσεων τρίτων χωρών και να εξασφαλίζονται ίσοι όροι ανταγωνισμού μεταξύ των επιχειρήσεων της ΕΕ και των ανταγωνιστών τους από το εξωτερικό·
- θα εξακολουθήσει να επιμένει να επιτύχει, μέσω εμπορικών διαπραγματεύσεων, την εξασφάλιση φιλόδοξων δεσμεύσεων για την πρόσβαση τόσο στις εμπορικές αγορές όσο και στις αγορές ανάθεσης δημόσιων συμβάσεων.
- θα προβεί σε διαβουλεύσεις με την Ευρωπαϊκή Τράπεζα Επενδύσεων για να διευρυνθεί το πεδίο χρήσης χρηματοδοτικών μέσων της ΕΕ για τη στήριξη διηπειρωτικών συνδέσεων·
- θα χορηγήσει χρηματοδοτική υποστήριξη για τεχνική βοήθεια ώστε να ενισχυθεί η διεθνοποίηση των μικρών εξειδικευμένων εργολάβων·
- θα αναπτύξει τη συνεργασία με τρίτες χώρες, ιδίως την Αφρική και τη Λατινική Αμερική, αλλά και στο πλαίσιο του κανονιστικού διαλόγου ΕΕ-Ρωσίας, της ευρωπαϊκής πολιτικής γειτονίας και της ευρωμεσογειακής σύμπραξης, που αφορούν τις βιώσιμες δομικές κατασκευές στον τομέα των δημόσιων συμβάσεων, ιδίως με την ενθάρρυνση των εταιρών αυτών να χρησιμοποιούν τους ευρωκώδικες ως εργαλείο για την εφαρμογή των κανονισμών τους στον τομέα των δομικών κατασκευών.

Τα κράτη μέλη καλούνται:

- να κινηθούν γρήγορα για την έκδοση της νέας πρότασης κανονισμού²⁹ σχετικά με την πρόσβαση των αγαθών και των υπηρεσιών τρίτων χωρών στην εσωτερική αγορά δημοσίων συμβάσεων της ΕΕ και τις διαδικασίες υποστήριξης των διαπραγματεύσεων σχετικά με την πρόσβαση των προϊόντων και υπηρεσιών της ΕΕ στις αγορές δημοσίων συμβάσεων τρίτων χωρών.

4. ΔΙΑΧΕΙΡΙΣΗ ΚΑΙ ΥΛΟΠΟΙΗΣΗ ΤΗΣ ΣΤΡΑΤΗΓΙΚΗΣ

Ένα σχέδιο δράσης που περιέχει λεπτομέρειες σχετικά με το αναμενόμενο αποτέλεσμα από κάθε σύσταση, το μερίδιο αρμοδιότητας μεταξύ της Ευρωπαϊκής Επιτροπής, των κρατών μελών και των οργανώσεων του τομέα και το χρονοδιάγραμμα υλοποίησης επισυνάπτεται στην παρούσα ανακοίνωση.

Η εφαρμογή της στρατηγικής προϋποθέτει τον εξορθολογισμό και τον συντονισμό πολλών σημερινών πρωτοβουλιών σε ευρωπαϊκό, εθνικό και τομεακό επίπεδο με σκοπό τη δημιουργία περισσότερων συνεργιών και τη μεγιστοποίηση των επιπτώσεών τους βραχυπρόθεσμα, μεσοπρόθεσμα και μακροπρόθεσμα. Πρέπει να βασιστεί σε μια δομή διακυβέρνησης που θα συνδυάζει τον συντονισμό και την παρακολούθηση τόσο από θεματική όσο και στρατηγική άποψη, και θα περιλαμβάνει:

²⁸ COM(2012) 124 τελικό.

²⁹ Στο ίδιο.

- τριμερές στρατηγικό φόρουμ υψηλού επιπέδου (Επιτροπή, κράτη μέλη, εκπρόσωποι του τομέα) που θα υποβάλει τις παρατηρήσεις του σχετικά με τις πρωτοβουλίες της ΕΕ που αφορούν τον κατασκευαστικό τομέα και την εφαρμογή της στρατηγικής, με τη διατύπωση στη συνέχεια συστάσεων για τυχόν αναγκαίες προσαρμογές της στρατηγικής ή νέες πρωτοβουλίες που πρέπει να δρομολογηθούν.
- Τη δημιουργία θεματικών ομάδων που θα αποτελούνται από τα κράτη μέλη και από εκπροσώπους του τομέα που ενδιαφέρονται για συγκεκριμένες προτεραιότητες της στρατηγικής, που θα πρέπει να συνδέονται με τα υφιστάμενα ευρωπαϊκά δίκτυα και σχέδια. Αυτές οι ομάδες θα επιβλέπονται από τις υπηρεσίες της Επιτροπής που είναι αρμόδιες για το συγκεκριμένο θέμα που θα εξετάζεται από κάθε ομάδα.

Η δομή αυτή θα επιτρέψει τόσο τη στρατηγική καθοδήγηση από την ΕΕ όσο και μια πρωτοβουλία από τη βάση προς την κορυφή από τα κράτη μέλη μαζί με τους υποτομείς του τομέα δομικών κατασκευών. Πρέπει να ενισχυθεί η συνεργασία μεταξύ των υποτομείων καθώς και κατά μήκος της αλυσίδας αξίας για την αντιμετώπιση των παγκόσμιων προκλήσεων.

5. ΣΥΜΠΕΡΑΣΜΑΤΑ

Δεδομένης της σημασίας του τομέα δομικών κατασκευών για το ΑΕγχΠ της ΕΕ και την απασχόληση, καθώς και του ρόλου του για την επίτευξη ορισμένων κρίσιμων κλιματικών, περιβαλλοντικών και ενεργειακών στόχων, η ανταγωνιστικότητα του εν λόγω τομέα αποτελεί μόνιμη πολιτική προτεραιότητα.

Επιπλέον, ειδικά σε περιόδους χρηματοπιστωτικής και οικονομικής κρίσης, οι πολιτικές της ΕΕ στους τομείς της κλιματικής αλλαγής, της ενεργειακής απόδοσης και των ανανεώσιμων πηγών ενέργειας, ιδίως στο πλαίσιο μιας πολιτικής για βιώσιμη ενθάρρυνση της ανακαίνισης κτιρίων, θα πρέπει να θεωρηθεί ως ευκαιρία για την αναζωογόνηση των επιχειρήσεων και της απασχόλησης στον κατασκευαστικό τομέα.

Η παρούσα ανακοίνωση προσδιορίζει τομείς με δυνατότητες ανάπτυξης για τις επιχειρήσεις του τομέα των δομικών κατασκευών, συχνά στο πλαίσιο των υφιστάμενων πολιτικών στρατηγικών και μέσων. Η πλήρης υλοποίηση αυτών των στρατηγικών της ΕΕ θα πρέπει να ενθαρρύνει π.χ. τις μακροπρόθεσμες επενδύσεις στο διευρωπαϊκό δίκτυο, στην έρευνα και καινοτομία και σε μία ισχυρότερη βάση ανθρώπινου δυναμικού, ενισχύοντας έτσι την ανταγωνιστικότητα του τομέα δομικών κατασκευών τόσο στην εσωτερική αγορά της ΕΕ και όσο και σε διεθνείς αγορές. Θα πρέπει να υποστηρίζεται από ένα σαφές και συνεκτικό νομικό πλαίσιο και εναρμονισμένες μεθόδους αξιολόγησης των επιδόσεων για την αειφόρο ανάπτυξη, ώστε να διασφαλίζεται η εύρυθμη λειτουργία της εσωτερικής αγοράς για τα προϊόντα και τις υπηρεσίες του τομέα δομικών κατασκευών.

Η επιτυχία της προτεινόμενης στρατηγικής εξαρτάται από τη δέσμευση των κρατών μελών και των ενδιαφερομένων φορέων στον τομέα των δομικών κατασκευών σε διάφορα επίπεδα:

- το τριμερές στρατηγικό φόρουμ υψηλού επιπέδου θα πρέπει να έχει σαφή εντολή να πραγματοποιήσει μια κριτική αξιολόγηση των επιδόσεων του τομέα δομικών κατασκευών·

- τα κράτη μέλη και οι ενδιαφερόμενοι φορείς του τομέα των δομικών κατασκευών πρέπει να εξασφαλίζει την κατάλληλη διασύνδεση με την εθνική και τομεακή ατζέντα για τον κατασκευαστικό τομέα·
- τα κράτη μέλη και οι ενδιαφερόμενοι φορείς του τομέα των δομικών κατασκευών θα πρέπει να διευκολύνουν την πραγματοποίηση της μεταφοράς εμπειριών και ορθών πρακτικών από τις θεματικές ομάδες, προκειμένου να επιτύχουν την επιχειρησιακή εφαρμογή τους στις επιχειρήσεις δομικών κατασκευών·
- κάθε παρέμβαση σε επίπεδο πολιτικής θα πρέπει να παρακολουθείται και να αξιολογείται με βάση έναν αριθμό δεικτών.

ΠΑΡΑΡΤΗΜΑ-ΣΧΕΔΙΟ ΔΡΑΣΗΣ

Βραχυπρόθεσμες ενέργειες (2012-2014)- αναφορά στα τμήματα 3.1.1 και 3.2.1 της ανακοίνωσης

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Κύρια αρμοδιότητα	Χρονικός ορίζοντας
Ανάλυση των διαφόρων χρηματοδοτικών μέσων των κρατών μελών και της ΕΕ που υποστηρίζουν την ενεργειακή απόδοση των κτιρίων	Έκθεση και συστάσεις της Ευρωπαϊκής Επιτροπής σχετικά με την παροχή χρηματοδοτικής στήριξης για την ενεργειακή απόδοση των κτιρίων	Οδηγία 2010/31/ΕΕ για την ενεργειακή απόδοση των κτιρίων/Σχέδιο δράσης για την ενεργειακή απόδοση 2011	Ευρωπαϊκή Επιτροπή	τρέχον έτος - τέλη του 2013
Φορολογικά μέσα και πιστωτικοί μηχανισμοί για έργα ανακαίνισης που είναι αναλογικά προς τους στόχους βιωσιμότητας που πρέπει να επιτευχθούν	Έγγραφο εργασίας των υπηρεσιών της Επιτροπής για την εφαρμογή από τα κράτη μέλη μέτρων ενεργειακής απόδοσης (συμπεριλαμβανομένων των φορολογικών μέσων και των πιστωτικών μηχανισμών στον	Οδηγία 2006/32/ΕΚ για την ενεργειακή απόδοση κατά την τελική χρήση και τις ενεργειακές υπηρεσίες /Οδηγία 2010/31/ΕΕ για την ενεργειακή απόδοση των	Ευρωπαϊκή Επιτροπή	2012-2013

	κατασκευαστικό τομέα) με βάση τα εθνικά σχέδια δράσης για την ενεργειακή απόδοση	κτιρίων		
Πιλοτικό σχέδιο σχετικά με την ασφάλιση και την εγγύηση καλής εκτέλεσης	Προκαταρκτικές συστάσεις για ασφαλιστικά συστήματα που αποσκοπούν στην κάλυψη εγγυήσεων καλής εκτέλεσης από μικρούς εργολάβους του κατασκευαστικού τομέα	Νέο πιλοτικό σχέδιο που υποστηρίζεται από το Ευρωπαϊκό Κοινοβούλιο (ξεκίνησε το 2012)	Ευρωπαϊκή Επιτροπή	2013
Εκστρατεία ενημέρωσης σχετικά με τη νέα οδηγία για τις καθυστερήσεις πληρωμών	Ενημέρωση των εργολάβων σχετικά με τα δικαιώματά τους όσον αφορά τους όρους πληρωμής	Οδηγία 2011/7/ΕΕ	Ευρωπαϊκή Επιτροπή	2012
Πιλοτικό σχέδιο σχετικά με την ταχεία και αποτελεσματική πληρωμή των εκκρεμοσών απαιτήσεων από μικρομεσαίες επιχειρήσεις (ΜΜΕ) που δραστηριοποιούνται διασυνοριακά	Ενημέρωση των εργολάβων σχετικά με τα δικαιώματά τους όσον αφορά τους όρους	Οδηγία 2011/7/ΕΕ	Ευρωπαϊκή Επιτροπή	2012-2013

	πληρωμής			
Αξιολόγηση της πρωτοβουλίας για τη δημιουργία δεξιοτήτων (BUILD UP) με στόχο την επέκτασή της και σε άλλες κατηγορίες επαγγελματιών στον τομέα των δομικών κατασκευών και την κάλυψη και άλλων αναγκών σε τυπικά προσόντα	Έκθεση αξιολόγησης	Πρόγραμμα «Ευφυής ενέργεια— Ευρώπη»	Ευρωπαϊκή Επιτροπή	2013-2014
Μέσα χρηματοοικονομικής τεχνικής και βοήθεια για την ανάπτυξη έργων ανακαίνισης μικρής κλίμακας σε συνδυασμό με συμβατικές εγγυήσεις για την απόδοση των κτιρίων	Έκθεση των κρατών μελών σχετικά με την εφαρμογή των χρηματοδοτικών μέσων και μηχανισμών	Διαρθρωτικά ταμεία	Κράτη μέλη	2012-2014
Συμπερίληψη στις προτεραιότητες για χρηματοδότηση από το Ευρωπαϊκό Κοινωνικό Ταμείο την περίοδο 2014-2020 χαρτών πορείας για τη δημιουργία δεξιοτήτων (Build-up)	Κατάρτιση χαρτών πορείας για τη δημιουργία δεξιοτήτων με χρηματοδότηση του ΕΚΤ	Ενεργειακή πολιτική Περιφερειακή πολιτική Πολιτική απασχόλησης	Ευρωπαϊκή Επιτροπή Κράτη μέλη	2012-2013

Μεσοπρόθεσμες και μακροπρόθεσμες ενέργειες (2014-2020)

1. Διαμόρφωση ευνοϊκότερων συνθηκών για επενδύσεις – αναφορές στο τμήμα 3.1.2. της ανακοίνωσης

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Αρμοδιότητα	Χρονικός ορίζοντας
Ελάχιστη εναρμόνιση σε τεχνικό επίπεδο της εθνικής διαδικασίας χορήγησης άδειας για τα διασυνοριακά τμήματα των διευρωπαϊκών δικτύων μεταφορών	Κοινή τεχνική προδιαγραφή της ΕΕ που πρέπει να υποβάλλεται με την αίτηση για την έκδοση άδειας	Διευρωπαϊκά δίκτυα μεταφορών	Ευρωπαϊκή Επιτροπή	2014 - 2016
Εντοπισμός των τεχνολογικών κενών στην αλυσίδα κατασκευαστικής αξίας και εκπόνηση σχεδίου δράσης για την κάλυψή τους	Διάσκεψη και συστάσεις για τις προτεραιότητες καινοτομίας στον κατασκευαστικό τομέα	Πολιτική καινοτομίας	Ευρωπαϊκή Επιτροπή	2013
Από κοινού συντονισμένες πρωτοβουλίες μεταξύ κρατών μελών και ιδιωτικού τομέα που συνδυάζουν έρευνα-καινοτομία-δημόσιες συμβάσεις, πιστοποίηση, ασφάλιση, διαπεριφερειακές ομάδες κ.λπ. για την επίτευξη της εμπέδωσης των νέων γνώσεων και τεχνολογιών σε επίπεδο ΕΕ και περιφερειακό επίπεδο.	Έργα	Ταμεία Ορίζοντας 2020, COSME, πολιτική συνοχής ΕΕ	Κράτη μέλη	2014 - 2020

2. Βελτίωση της βάσης σε ανθρώπινο κεφάλαιο – αναφορές στο τμήμα 3.2.2 της ανακοίνωσης

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Αρμοδιότητα	Χρονικό ορίζοντα
Πρωτοβουλίες κοινωνικού διαλόγου της ΕΕ για την προσαρμογή της επαγγελματικής εκπαίδευσης και κατάρτισης στις μελλοντικές ανάγκες σε εξειδίκευση του κατασκευαστικού τομέα, τον εντοπισμό των βασικών δεξιοτήτων από τις οποίες έχουν ανάγκη συγκεκριμένοι κλάδοι και τη διευκόλυνση της αμοιβαίας αναγνώρισης των τυπικών προσόντων	Μελέτη για την ανάπτυξη πλατφόρμας ενημέρωσης	Κοινωνικός διάλογος της ΕΕ	Ευρωπαϊκή Επιτροπή	2012 - 2014
Δημιουργία τομεακού συμβουλίου δεξιοτήτων της ΕΕ για τον κατασκευαστικό τομέα με σκοπό την ανάπτυξη πρωτοβουλιών στους τομείς της ενεργειακής απόδοσης των κτιρίων και της αποτελεσματικής χρήσης των πόρων στα κτίρια, της υγείας και ασφάλειας, των προτύπων ποιότητας, της μαθητείας, της κοινής διαχείρισης των κονδυλίων από κοινωνικούς εταίρους, κ.λπ.	Τομεακό συμβούλιο δεξιοτήτων της ΕΕ	Κοινωνικός διάλογος της ΕΕ	Ευρωπαϊκή Επιτροπή	2013-2016
Συμμαχία τομεακών δεξιοτήτων της ΕΕ στον τομέα των βιώσιμων κατασκευών	Συμπράξεις για το νεωτεριστικό σχεδιασμό κατάλληλων προγραμμάτων σπουδών ή τυπικών προσόντων ΕΕΚ	Νέες θέσεις εργασίας για νέες δεξιότητες	Ευρωπαϊκή Επιτροπή	2013-2016
Επίσπευση της έγκρισης της νέας πρότασης οδηγίας όσον αφορά την εφαρμογή της οδηγίας 96/71/ΕΚ σχετικά με την απόσπαση	Έκδοση νέας οδηγίας της ΕΕ	Οδηγία 96/71	Συμβούλιο και Ευρωπαϊκό	2012-2014

εργαζομένων			Κοινοβούλιο	
Συμπράξεις σε εθνικό και περιφερειακό επίπεδο για τα συστήματα επαγγελματικής εκπαίδευσης και κατάρτισης προκειμένου να ανταποκρίνονται στις σημερινές και αναδυόμενες ανάγκες του κατασκευαστικού τομέα, και ιδίως του τομέα των ΤΠΕ	Στοχευόμενες συμπράξεις επαγγελματικής εκπαίδευσης και κατάρτισης (ΕΕΚ)	Εθνικές πολιτικές επαγγελματικής εκπαίδευσης και κατάρτισης (ΕΕΚ)	Τομεακές οργανώσεις	2013-2016
Εκστρατείες για την προσέλκυση ταλέντων στον κατασκευαστικό τομέα	Εκστρατείες ευαισθητοποίησης		Τομεακές οργανώσεις	2012-2020

3. Βελτίωση της αποτελεσματικότητας των πόρων, της περιβαλλοντικής απόδοσης και των επιχειρησιακών ευκαιριών- αναφορές στο τμήμα 3.3 της ανακοίνωσης

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Αρμοδιότητα	Χρονικός ορίζοντας
Αμοιβαία αναγνώριση των μεθόδων αξιολόγησης της περιβαλλοντικής απόδοσης των κτιρίων ³⁰	Πρόγραμμα της ΕΕ για την περιβαλλοντική αξιολόγηση των κτιρίων και τις τεχνικές προδιαγραφές της ΕΕ	Πολιτική της ΕΕ για την αποδοτική χρήση των πόρων και πολιτική τυποποίησης της ΕΕ	Ευρωπαϊκή Επιτροπή	2014-2016

³⁰ Προς περαιτέρω ανάπτυξη στην ανακοίνωση για τα βιώσιμα κτίρια το 2013

Αμοιβαία αναγνώριση των μεθόδων εκτίμησης της επικινδυνότητας λαμβανομένης υπόψη της περιβαλλοντικής απόδοσης, ιδίως στο πλαίσιο των δραστηριοτήτων τυποποίησης της ΕΕ και των μεθόδων ασφάλισης	Τεχνικές προδιαγραφές της ΕΕ	Πολιτική τυποποίησης της ΕΕ	Ευρωπαϊκή Επιτροπή	2014-2018
Μεθοδολογία για την κοστολόγηση του κύκλου ζωής των κτιρίων σε όλη την ΕΕ στις πράσινες δημόσιες συμβάσεις ³¹	Οδηγίες της ΕΕ για την κοστολόγηση του κύκλου ζωής στις δημόσιες συμβάσεις	Πράσινες δημόσιες συμβάσεις	Ευρωπαϊκή Επιτροπή	2014-2016
Αύξηση της χρήσης πράσινων δημοσίων συμβάσεων στο πλαίσιο της περιφερειακής πολιτικής κατά την επόμενη προγραμματική περίοδο ³²	Μεγαλύτερη προώθηση των κριτηρίων ΠΔΣ για τον κατασκευαστικό τομέα σε έργα που χρηματοδοτούνται από την ΕΕ	Περιφερειακή πολιτική	Ευρωπαϊκή Επιτροπή	2014-2020
Αξιολόγηση των εμποδίων που απορρέουν από την εθνική νομοθεσία που διέπει τη διαδικασία χορήγησης αδειών για τα μεγάλα κατασκευαστικά έργα	Επιχειρησιακά συμπεράσματα από τη διαδικασία αναθεώρησης της οδηγίας για την εκτίμηση του περιβαλλοντικού	Αξιολόγηση της περιβαλλοντικής απόδοσης και εθνικές διαδικασίες χορήγησης	Ευρωπαϊκή Επιτροπή	2013-2016

³¹ Προς περαιτέρω ανάπτυξη στην ανακοίνωση για τα βιώσιμα κτίρια το 2013

³² Προς περαιτέρω ανάπτυξη στην ανακοίνωση για τα βιώσιμα κτίρια το 2013

	αντίκτυπου Κατευθυντήριες γραμμές για την εναρμόνιση των διαδικασιών της αξιολόγησης της περιβαλλοντικής απόδοσης των έργων ενεργειακών υποδομών κοινού ενδιαφέροντος	αδειών		
Εναρμονισμένοι κανόνες για τη δήλωση των χαρακτηριστικών απόδοσης των προϊόντων του κατασκευαστικού τομέα σε συνάρτηση με τη βιώσιμη χρήση των πόρων ³³	Εναρμονισμένοι κανόνες ΕΕ και επικαιροποιημένα εναρμονισμένα πρότυπα ΕΕ	ENTR/Κανονισμός προϊόντων κατασκευαστικού τομέα	Ευρωπαϊκή Επιτροπή	2013-2018
Αξιολόγηση των επιδόσεων των υποτομέων του κατασκευαστικού τομέα όσον αφορά την ανταγωνιστικότητα και τη βιώσιμη ανάπτυξη σε εθνικό και περιφερειακό επίπεδο	Εκθέσεις	Εθνικός κατασκευαστικός τομέας	Κράτη μέλη	

4. Ενίσχυση της εσωτερικής αγοράς για τον κατασκευαστικό τομέα – αναφορές στο τμήμα 3.4 της ανακοίνωσης:

³³ Πρόκειται να προβλεφθούν περαιτέρω δράσεις στην ανακοίνωση για τα βιώσιμα κτίρια το 2013.

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Αρμοδιότητα	Χρονικός ορίζοντας
«Έλεγχοι καταλληλότητας» της νομοθεσίας της ΕΕ για τον εντοπισμό υπερβολικού διοικητικού φόρτου, αλληλοεπικαλύψεων, αποκλίσεων, ασαφειών και παρωχημένων μέτρων	Έκθεση αξιολόγησης και συστάσεις για νομοθεσία της ΕΕ	Έξυπνος κανονισμός	Ευρωπαϊκή Επιτροπή	2013-2015
Εξέταση της εφαρμογής των ευρωκωδίκων στα κράτη μέλη και προτάσεις για την επιβολή της χρήσης ευρωκωδίκων στις δημόσιες συμβάσεις και σε άλλα μέσα, όπως οι εθνικές εκτιμήσεις επικινδυνότητας και τα σχέδια διαχείρισης.	Υποβολή έκθεσης σχετικά με άλλα βασικά σχεδιαστικά πρότυπα στον κατασκευαστικό τομέα και πιθανή έκδοση εντολής για την τυποποίησή τους	Σύσταση της Ευρωπαϊκής Επιτροπής για τους ευρωκώδικες 2003/887/ΕΚ	Ευρωπαϊκή Επιτροπή	2013-2014
Εποπτεία της αγοράς όσον αφορά την εφαρμογή της ευρωπαϊκής νομοθεσίας	Λιγότερες καταγγελίες από τον κλάδο παραγωγής	Κανονισμός 765/2008/ΕΚ	Κράτη μέλη	

5. Προώθηση της συνολικής ανταγωνιστικής θέσης των κατασκευαστικών επιχειρήσεων της ΕΕ – αναφορές στο τμήμα 3.5 της ανακοίνωσης

Ενέργειες	Αποτέλεσμα	Πολιτικό πλαίσιο	Αρμοδιότητα	Χρονικός ορίζοντας
Διαπραγμάτευση εμπορικών δεσμεύσεων όσον αφορά την πρόσβαση	Εμπορικές	Εμπορική	Ευρωπαϊκή	Τρέχον

στις εμπορικές αγορές και στις αγορές δημόσιων προμηθειών τρίτων χωρών	συμφωνίες που διασφαλίζουν την πρόσβαση στην αγορά προϊόντων και υπηρεσιών του κατασκευαστικού τομέα	πολιτική ΕΕ	Επιτροπή	έτος
Αύξηση ευκαιριών για την χρήση χρηματοδοτικών μέσων της ΕΕ, π.χ. από την Ευρωπαϊκή Τράπεζα Επενδύσεων, για την υποστήριξη των διηπειρωτικών συνδέσεων	Στοχευμένη πληροφόρηση σχετικά με τη χρήση των χρηματοδοτικών μέσων της ΕΕ	Π.χ. Σύμπραξη ΕΕ –Αφρικής για την υποδομή μεταφορών	Ευρωπαϊκή Επιτροπή	2013-2016
Χρηματοδοτική στήριξη για την παροχή τεχνικής βοήθειας με στόχο τη διεθνοποίηση μικρών εξειδικευμένων εργολάβων	Παροχή τεχνικής βοήθειας σε μικρούς εργολάβους της ΕΕ	Πρωτοβουλία «Μικρή επιχείρηση, μεγάλος κόσμος»	Ευρωπαϊκή Επιτροπή	2012-2015
Ανάπτυξη συνεργασίας με την Αφρική, τη Λατινική Αμερική, τη Ρωσία, τις γειτονικές χώρες όσον αφορά τις βιώσιμες κατασκευές στις δημόσιες συμβάσεις	Διεθνές φόρουμ	Ρυθμιστικός διάλογος της ΕΕ με τρίτες χώρες	Ευρωπαϊκή Επιτροπή	2013-2015
Επίσπευση της έκδοσης της νέας πρότασης κανονισμού σχετικά με την πρόσβαση αγαθών και υπηρεσιών τρίτων χωρών στις δημόσιες συμβάσεις της ΕΕ και διαδικασίες για την υποστήριξη των διαπραγματεύσεων σχετικά με την πρόσβαση αγαθών και υπηρεσιών της ΕΕ στις αγορές δημόσιων συμβάσεων τρίτων χωρών	Έκδοση κανονισμού της ΕΕ	Νέος κανονισμός για την αμοιβαιότητα της πρόσβασης στην αγορά	Κράτη μέλη	2012-2014

High Level Tripartite Strategic Forum

REPORT

On follow-up actions on the Communication and Action Plan Construction 2020¹

February 2014

¹ COM(2012) 433 final "Strategy for the sustainable competitiveness of the construction sector and its enterprises"

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Executive summary

Construction 2020 is aimed at identifying and implementing measures that help fostering sustainable competitiveness in the construction sector in the short as well as in the medium to long term. It intends to define sound conditions on a general level for investment, research, innovation, entrepreneurship, higher resource efficiency and work environment. It also encourages actions to reassure and ameliorate the functioning of the Internal Market and help remove barriers to trade and business at international level. The potential of the European construction sector can largely be developed through existing EU instruments and strategies. During 2013, the EC has facilitated the development of a governance structure comprising of a High Level Strategic Forum (HLF) and 5 Thematic Groups (TGs) to address the various actions presented in the Construction 2020 Action Plan. This bottom up approach has provided Member States and stakeholders representatives with the opportunity for expressing their views with regards to the implementation of the various actions.

This report presents the outcome of the discussions of the High Level Strategic Forum (HLF) during 2013. This document reflects the state of play and does not prejudice possible adjustments of the strategy and of the vision of the HLF in 2014 depending on the effective implementation of its recommendations and new policy developments.

How is this document structured?

Section 1: Provides a summary of those recommendations which have been prepared by the TGs and discussed by the HLF. For each Thematic Group, a brief introduction on the proposed recommendations precedes a table with the scope and possible actions to be undertaken.

Section 2: Gives an overview of the priorities defined by the HLF for 2014.

Section 3: Presents the timetable of the various meetings of the TGs and of the HLF in 2014.

Annex A presents a detailed table with "possible actions" that the HLF may bring forward. **Annex B** identifies possible national initiatives that converge with the objectives of Construction 2020 and where further cooperation should be strengthened. **Annex C** provides with a list of European and international events related to sustainable construction which could serve for the dissemination of the HLF recommendations.

HLF Members are expected to ensure leadership, commitment and that adequate resources are allocated to the implementation of the agreed recommendations. In parallel, a Commission EC Task Force involving various EC services will analyse to which extent existing policies and initiatives are responding to the HLF recommendations and assess the need to launch possible new actions.

During 2014, the visibility of Construction 2020 needs to be increased. To this end, links should be established with other EU-institutions, and platforms, think-tanks and forums at Member States level that share the thematic spirit of the "Construction 2020 Action Plan". Moreover, in consultation with the Thematic Groups, the EC Secretariat will develop an approach for assessing the progress achieved with the Construction 2020 Action Plan and its governance structure.

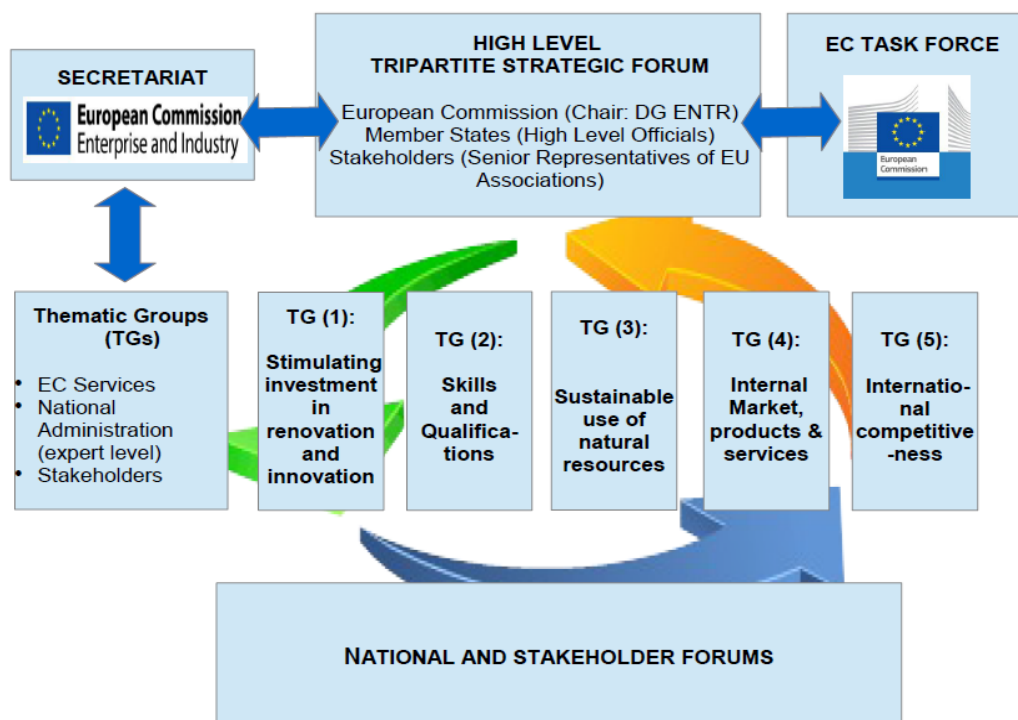
Introduction

In 2012 the Commission issued a **Communication on the “Strategy for the sustainable competitiveness of the construction sector and its enterprises”** (Communication COM (2012) 433 final), aimed at facilitating sustainable growth and development in the construction sector. This Communication was accompanied by an Action Plan, commonly known as **“Construction 2020”**, which aims to support the construction sector in its adaptation to key upcoming challenges and to promote the sustainable competitiveness of the sector. In order to help meeting these goals, the Action Plan is organised around five key strategic objectives:

1. Stimulating favourable investment conditions
2. Improving the human-capital basis of the construction sector
3. Improving resource efficiency, environmental performance and business opportunities
4. Strengthening the Internal Market for construction
5. Fostering the global competitive position of EU construction enterprises

For the implementation of the Action Plan, the Commission has created a dedicated governance structure:

Illustration of Construction 2020 governance structure



This structure aims to co-ordinate initiatives at EU level based on national good practice and identify potential synergies as well as provide concrete recommendations for initiatives to be supported by the High Level Tripartite Strategic Forum. The governance structure consists of:

- The **High Level Tripartite Strategic Forum** (HLF), which monitors the overall progress of the implementation of the Action Plan and its objectives, provides an opinion and follows up on the recommendations of the five thematic groups (described below). The HLF proposes new initiatives or revisions to existing initiatives and makes concrete recommendations for future action. The HLF is a tripartite group, consisting of the Commission, Member States (MS) and sectorial representatives. The HLF has met twice in 2013.
- Five **Thematic Groups** (TG), corresponding to the key strategic objectives which map sector needs and identify barriers to the implementation of the Action Plan and make specific recommendations for future action. Each group has met twice during 2013. The Thematic Groups are composed of EC services, MS authorities and sectorial representatives with expertise in relevant areas.
- The **Secretariat** is in charge of logistics arrangements, the preparation of discussion papers and background documentation to support the exchange of information among Thematic Group participants, as well as drafting Reports and co-ordinating draft Recommendations to the HLF. DG ENTR awards a service contract for support in the tasks.
- The **EC Task Force** on “*Sustainable industrial policy, construction and raw materials*” is a group which ensures co-ordination across EU services. From the point of view of the Action Plan, it ensures contributions of the construction sector to policy development on innovation, job creation, social cohesion, energy efficiency, meeting environmental goals and achieving international growth. Its main focus is on possible synergies, overlaps, inefficiencies and other co-ordination issues linked to the key contributions of the construction sector to the EU 2020 strategy, long-term Industrial Policy and other relevant EU goals.

Section 1: Recommendations from the High Level Forum

During 2013, each Thematic Group (TG) has met at least twice to discuss the initiatives set out in the "Construction 2020" Action Plan. Participants discussed specific recommendations that would foster the implementation of these initiatives.

The following sections provide a synthesis of those recommendations from the TG members which the HLF considers worth pursuing in 2014. Initially, the report identifies those recommendations for which the HLF members have expressed some reserve and which would require, in some cases, further investigation from the TGs.

Subsequently, the recommendations of each group are presented in summary – please see Annex A for detailed tables of the scope and possible actions to be undertaken.

THEMATIC GROUP 1 – "Stimulating investment in building renovation, infrastructure and innovation"

The HLF welcome the idea that energy efficiency is seen together with other basic requirements for construction works. As regards the extent to which a building can be renovated, some members are hesitant to promote specific measures or concepts, such as *deep renovation*, but would rather prefer a cost benefit approach to reassure most value for resources, so that energy efficiency is obtained in the most cost-efficient way when renovating.

Representatives from the financial sector should be associated to the Forum and the TGs as finance is essential to construction, renovation and innovation. In particular, the availability of mortgage loans and business finance on suitable terms for investors and SMEs is important for the development of the residential market. Today, various constraints are putting pressure on the availability of proper finance for investments in buildings and infrastructure construction, renovation and maintenance. Financing mechanisms should make long-term investments in construction works more attractive for property owners as well as for the financial sector.

As regards communication needs for EU funding and energy efficiency information, e.g. energy labelling and energy performance certificates, some members of the HLF are unsure that a EU wide dissemination campaign would be an efficient tool since the average person or landlord is likely to not identify with EU branding on this. More targeted campaigns should be organized at national level.

Furthermore, some HLF members believe that lowering the administrative burden on the (new) built environment would have a positive effect on the provision of affordable houses. They invite public authorities to carry out an inventory and an analysis of the different existing regulatory and policy measures affecting the provision and the commercialization of dwellings, in order to abolish and/or replace inefficient and ineffective measures. At the same time, they suggest that public authorities make sure that every new policy proposition is presented together with a socio-economic impact assessment. The European Commission could play a role in facilitating exchange of experiences and capacity building for administrative simplification at regional and local levels.

The HLF discussed also the need of modernising rent regulations in order to improve the general state of the building stock and address the split incentive problem in energy efficiency investments. Most members pointed it out that is a subsidiarity matter which should be dealt with specific approaches and incentives at national and regional levels. This question should be reconsidered once the Member State would have presented their national renovation plans in 2014 as foreseen by the Energy Efficiency Directive.

About fiscal instruments for sustainable construction, some members of the HLF remarked that some Member States have put in place schemes within the scope of the existing EU legal framework, particularly for energy efficiency in the housing sector. It was suggested that an exchange of experiences is organised within the ECOFIN context about how fiscal instruments impact on sustainable construction. The Economic Policy Committee (EPC) Working Group on Energy and Climate Change would be a possible place for such an exchange of information amongst Member States.

Key recommendations (see Annex A for full details)

In order to stimulate the demand for energy efficiency and infrastructure upgrading the HLF recommends to better align the existing EU instruments for sustainable building renovation and infrastructure maintenance. Moreover, in order to capitalise on research programmes, the HLF suggests to give priority to demonstration projects and market oriented activities fostering the take-up of new knowledge and innovative approaches in building renovation and infrastructure maintenance. Specific recommendations are:

1. A **mapping should be carried out of the various market segments' needs** related to residential and non-residential buildings, and guidance developed on blending the various available financial instruments. Particular attention should be given to the residential sector and providing the technical assistance required to aggregate small projects into 'bankable' projects. A framework for EU wide metrics should allow the **appraisal of the cost-benefits of financial instruments and other policy initiatives**, in order to monitor implementation effectiveness.
2. Encourage the property valuation industry to **adopt internationally recognised valuation standards**, in particular those developed by the International Valuation Standards Committee and the European Group of Valuers' Association, the Royal Institution of Chartered Surveyors, and collect information to properly assess the **impact of sustainability on market** expectations, market value and fair value.
3. Use a **life cycle costing** approach to anticipate the maintenance costs during investment decisions. Apply the **user-pays principle** to finance infrastructure maintenance and upgrading; ensure that funds collected are earmarked for this purpose. In addition, the Group suggests **better appraisal of the sustainability of infrastructure projects** at the decision stage, especially regarding maintenance and upgrading.
4. Support innovative "**lighthouse**" **projects** addressing various market segments and project sizes to strengthen synergies between public funds and private investors. Develop a **quality assurance** strategy specific to the respective needs of new materials, technology and services to ensure their take up by the market and insurance coverage.

5. Support **active ageing schemes**, both via an adapted building stock and by facilitating continued employment of older workers in construction.

THEMATIC GROUP 2 – "Skills & Qualifications"

As far as skills and qualifications issues are concerned, the industry's main focus seems related to the **consolidation of entrepreneurship** within the sector, particularly from the contractor's perspective. The construction sector unfortunately is not attracting young talents and **falls short in relevant skills in regards to low carbon economy and resource efficiency**, except for engineering and architecture. In general, HLF Members recognize that any initiative in respect to **exchange of best practices** is of vital importance to the sector, workforce and trainers, public and private, targeting socio-economic benefits at EU level. The exchange of best practice should also address the **link between career development and young talent attraction**.

The High Level Forum considers that the **BUILD UP Skills model has proven to be a useful step forward** to federate the various policy initiatives undertaken at national level, even beyond energy efficiency. Yet there are still different points of view when tackling the issue of **quality assurance** in relation with qualifications and skills, in particular, when it comes to initial vs. lifelong learning and informal training. However, a general agreement emerges for the necessity to further develop **partnerships that foster the transfer of good practices**, use of **ICT tools**, and exchange of experiences to overcome barriers. This process should ensure easy access to training for the self-employed and micro-enterprises.

Public procurement has to be driver to increase the supply of skilled/qualified workers/managers. Actions such as an EU Sector Skills Council for Construction would be of high esteem. Also, further development regarding the curricula for sustainable construction, in particular in the context of the Sector Skills Alliance pilots and the future ESCO model, could provide insight and where suitable, provide baseline for possible harmonization.

Where the construction industry is undergoing a major restructuration process, access to finance for training is of very high concern. MS as well as industry are aware of opportunities offered through ESI Funds and the European Globalisation Adjustment Fund (EGF).

Key recommendations (see Annex A for full details)

The HLF suggests to strengthen the implementation of existing EU and MS instruments to ensure suitably qualified and sufficiently numerous human resources for energy-efficient building renovation and infrastructure maintenance. European quality assurance schemes should facilitate the mobility of workers and construction professionals and increase the attractiveness of the sector to young talents.

6. **Support and extend the BUILD UP Skills initiative** (Pillar I & II) to cover building and construction site professionals and include other stages of the property lifecycle such as construction, building operation and management. In particular, identify which national

issues may benefit from similar solutions at regional or EU level. The group also recommends to **review the eligibility for funding measures for training to ensure fair access** for all workers, professionals and sizes of enterprise, especially for SMEs. The aim is to stimulate partnerships for trainings needs at regional and local level. In addition, the group should **provide guidelines for developing partnerships** to optimise uptake of training.

7. Provide **guidelines for developing partnerships** to optimise uptake of training. **Encourage training for jobs in the green economy**, and tapping potential new personnel streams. The group should also **review existing EU level initiatives and partnerships that support training** to compile and spread good practice.
8. **Facilitate mobility of workers and construction professionals** by following up the development and implementation of assessment tools and registries (professional cards), in construction. Finally, it was proposed to study Health & Safety innovative practices in the sector to spread good practice.

THEMATIC GROUP 3 – "Sustainable use of natural resources"

The HLF Members focused the discussion on the forthcoming Sustainable Building Communication (expected to be adopted in 2014) as well as the revision of the Waste Framework Directive.

The need for a voluntary, transparent, EU framework (baseline structure) for the measurement of the sustainability performance of buildings and other construction works was discussed with a view to boost future investments in resource efficiency, help to upgrade existing building stock and strengthen the internal market for construction products and services. As a first step, HLF Members advocate the benchmarking of existing assessment tools and available standards in order to ensure better comparability. The demand for sustainable buildings and related Research, Development and Innovation (R&D&I) activities should be boosted through available instruments, such as European Structural and Innovation Funds, Horizon 2020 and Green Public Procurement. The issue of available qualified and skilled workforce in the supply chain is vital (not only at the design stage but at the installation/maintenance phases) thus further synergies have to be developed between different EU instruments.

In the light of the actual revision of the Waste Framework Directive, it is important to define a realistic target for Construction and Demolition (C&D) waste, The HLF recommends improving the terminology and further developing on appropriate metrics to ensure proper monitoring and assessment. Deconstruction principles and assessment tools for material efficiency should be promoted throughout the entire value chain. Further exchange of best practice in regards to tools/guidelines for preliminary assessment of buildings before demolition in order to facilitate maximizing the valorisation of C&D waste. It is also necessary to support for R&D&I in line with market demand in order to improve resource efficiency.

Key recommendations (see Annex A for full details)

The HLF suggests to improve the comparability of the various existing methods for the assessment of the building environmental performances and to promote a single structure for the assessment of the environmental performance of construction products. Moreover, the factual information basis regarding C&D waste needs to be improved together with the promotion of assessment tools for material efficiency.

9. Encourage the creation of an EU framework for **building assessment** in terms of evaluation/comparability of the environmental performance of buildings. Promote a single structure for the **assessment of the environmental performance of construction products** building based on existing environmental assessment tools and European standards. Use existing instruments within the framework of ESI Funds and Horizon 2020 to **incentivise resource efficiency** in the construction sector. Consider Green Public Procurement as a tool to increase demand for sustainable buildings. Using **communication tools**, increase awareness/ knowledge about integrated design and sustainable buildings amongst different actors. **Collect data to assess building /product sustainability**. Consider feedback from buildings in operation, and transparent communication of operating data, to gain valuable information for future investment.

10. Explore ex-ante assessment of buildings prior to demolition to identify viable/potential opportunities to facilitate maximizing the **valorisation of Construction and Demolition (C&D) waste**. Identify **economic instruments that provide incentives for recycling C&D waste**. Improve the recycling infrastructure throughout Europe by **clarifying definitions** in the context of the Waste Framework Directive. Develop a realistic target for C&D waste recycling based on sound waste management statistics.

THEMATIC GROUP 4 – "Internal Market"

The HLF showed wide support for the proposed recommendations. It also highlighted the very important degree of interrelation of the internal market for construction products with construction services. While the assessment in regards to construction products is highly standardized and effective, the provision of construction services in the internal market, particularly in the provision of cross border services, is still far from satisfactory. The HLF highlighted the well-established contact points system throughout Europe and the importance to ensure their actual operability and further development of a network. Furthermore, it was noted that market surveillance, which is essential, shall also be exercised at regional level in Member States, so the regions should be explicitly mentioned.

At EU-level, a pragmatic mapping study on cumulative burden of existing legislation applicable to construction products and services based on representative case studies for services/professions/products would be welcomed and should be coherent with the European Commission's REFIT initiative. The HLF noted that cross-border liability is a complicated issue, and that clear regulation and rules are needed.

Eurocodes has proven as a tool which is gaining momentum, for cost-benefit reasons but also by enhancing the internal market for construction. However, some HLF Members, believe that, before starting studying the possible wider use of Eurocodes in new areas, efforts should be concentrated on the correct implementation of the current Eurocodes and more return of market experience should be shared. A specific effort should also be undertaken towards simplification.

Key recommendations (see Annex A for full details)

The HLF confirms that there is a need to assess the cumulative burden of EU legislation on construction products and service businesses. Further improved use of Eurocodes could also be beneficial for the Internal Market of construction services. Based upon the experiences gathered at MS level of market surveillance for construction products, the HLF puts emphasis on the need to guarantee enough resources by MS to ensure quality in the European construction industry. The HLF also suggests to assess how Member States have progressed with the integration of provisions related to sustainability in national building regulations and codes.

11. With regard to "**Fitness check**", assess the overall consistency and coherence of EU legal acts imposing obligations on the construction sector to identify/avoid/remove provisions creating overlaps, inconsistencies, obsolete measures or excessive cumulative burden. This

does not aim at deregulation. Priority areas would be: the Internal market, Environment; Energy efficiency; Health and safety.

12. Develop a comprehensive **network of national contact points for construction products and services** to provide harmonised, consistent and accessible information on **EU and national legislation** related to construction products and services, **covering both national and cross-border services**². Insurance for cross border services in construction. Facilitate the provision of insurance for cross border services based on the definition of common criteria for the assessment of equivalence of insurances and flexible conditions for temporary cross-border services.
13. Ensure that **Eurocodes** are more widely used in the EU, including in public procurement. Explore possibilities of **further clarification**, simplification, harmonisation and evolution of Eurocodes.
14. **Ensure effective market surveillance** of construction products, including legislative simplification. **Encourage MS to assign the necessary resources** and to guarantee proper market surveillance at national and regional level.
15. **Assess legislative sustainability provisions** in Member States: gather preliminary views about the aspects to be considered in relation to the EU internal market.

² Communication on Services COM (2012) 261 final "A partnership for new growth in services"

THEMATIC GROUP 5 – "International Competitiveness"

The HLF Members recognize the importance of international competitiveness in the construction sector, particularly regarding market access. It was noted that most of the existing support schemes target SMEs, but that a significant contingent of non-SME construction firms also face fierce competition and barriers when entering third markets.

The HLF appreciates the approach taken in regards to the construction sector and the establishment of future Free Trade Agreements (FTAs), notably the Transatlantic Trade and Investment Partnership with the US (TTIP). Industry underlined the importance of further promotion of European standards as a means of market access, but also a guarantee for quality in construction. The HLF established a list of priority countries for the international promotion of construction and maximising the benefits of trade negotiations.

HLF Members supported cooperation in "sustainable" construction aspects but also in broadening the international cooperation on regulation and standards beyond the current focus on construction design codes (Eurocodes), notably to include construction products and professional qualifications.

HLF Members did not reach consensus in regards to the new reciprocity instrument for public procurement.

Key recommendations (see Annex A for full details)

The HLF suggests to strengthen the promotion of EU construction industry know-how at international level and to maximize benefits of trade negotiations. Moreover, the HLF welcomes the current support measures and schemes for the internationalisation of EU construction SMEs and is keen to contribute to the development of possible new support measures and schemes.

16. **Focusing future work and collaboration** with international partners. Due to the particularities of trade in the construction sector, **a well-targeted selection of potential partner countries** for intensifying cooperation is necessary.
17. The Group recommends to the EU institutions, together with Member States, to address the issue of **access to finance and guarantees**, notably for trade and investment with high-risk regions and those where European companies suffer from unfair competition. Foster during the next programming period (2014-2020) the **participation of the private sector in EU External Aid projects** through blending mechanisms, in line with G20/8 conclusions and respecting OECD Rules.
18. **Foster the international cooperation on regulation and standards beyond Eurocodes** notably to include construction products and professional qualifications.

Section2: Priorities for 2014

In 2014, Construction 2020 and the HLF should aim to focus on four (4) main priorities:

2.1. Follow-up the suggested recommendations by the HLF (Section 1 of this document):

HLF Members are expected to ensure leadership, commitment and adequate resources are allocated to the implementation of the agreed recommendations. In parallel, a Commission EC Task Force involving various EC services will analyse to which extent existing policies and initiatives are responding to the HLF recommendations and assess the need to launch possible new actions.

2.2. Initiate Action Plan measures that have not yet been covered:

Stimulating favourable investment conditions

Actions associated with this objective aim to stimulate investment in the construction sector, particularly in renovation activities, and to improve the sector's capacity to innovate.

- Mapping of implementation of the financial instruments and mechanisms at MS level, including the expertise of the of the financial sector for sustainable construction/renovation
- Mapping of national permit granting process for TENs cross border sections from a technical perspective (to be further developed).
- Other ESI Funding mechanisms that could foster research-innovation-procurement, , interregional clusters, etc. to speed up the uptake of new knowledge and technologies at EU and regional levels in the construction sector.

Improving the human capital basis

Actions associated with this objective aim to gage skills and qualifications needs in the construction sector and to adapt trainings accordingly; to improve training and mobility options for workers in the sector; to increase sector attractiveness and to help harmonise qualifications across the EU.

- All actions have been covered under the scope of the actual recommendations issued. Thus, no new action in this field is envisaged.

Improving resource efficiency, environmental performance and business opportunities

Actions associated with this objective aim to harmonise understanding of sustainable and green buildings, to align assessment methods and to develop and exchange best practices to promote resource efficiency, improve environmental performance and promote life cycle thinking in the sector.

- Assessment of hindrances resulting from national legislation governing, the authorisation process for major construction projects, with a view to identifying good practices for streamlining the procedures, (with a particular view on the on-going revision of the EIA Directive).

Strengthening the Internal Market for Construction

Actions associated with this objective aim to facilitate cross-border provision of services and develop a common approach to product and building standards.

- All actions have been covered under the scope of the actual recommendations issued. Thus, no new action in this field is envisaged.

Fostering the global competitive position of EU construction enterprises

Actions associated with this objective aim to strengthen the EU construction sector's position in the global market, notably by facilitating international competitiveness of SMEs, promoting European standards beyond the EU and setting priorities for international collaboration to foster market access for construction products and the provision of services. Special attention should be paid to capitalise European political leadership in regards to the climate agenda

- Further collaboration with 3rd countries around sustainable construction, including in public procurement, both from a B2B perspective as well as in regards to regulation and standardisation.
- Possible sub-group to identify information and analytical needs in terms of trade flows and exports/investment opportunities for construction products/solutions/technologies

2.3. Communication Strategy:

Establish links with other EU-institutions, and platforms, think-tanks, forums at MS level that share the thematic spirit of the "Construction 2020 Action Plan":

The HLF suggests that a communication strategy is developed regarding its messages and the activities and reports from the Thematic Groups. In particular, this strategy should reflect on dissemination channels for the specific recommendations at national and regional levels, which will play a prominent role in the implementation of Construction 2020 in the coming year(s).

While opportunities for communication are diverse, a way forward could be dissemination:

- In written form via EU communication outlets (news items, memos, website, etc.)
- At relevant national and international construction forums or other similar events gathering a variety of key affected stakeholders
- National or regional construction forums in particular may present an interesting opportunity for the HLF to present its recommendations and interact with relevant stakeholders³. The High Level Forum is invited to inform the Commission about those national forums which seem more appropriate for the communication strategy.

³ For reference, a selection of upcoming construction forums in the EU is provided in a separate Annex below (Annex C: Selection of EU and non-EU 2014 construction forums). The HLF may wish to consider a presence at one or more of these non-EU forums to exchange information on EU and non-EU practices, though communication efforts should likely prioritise EU events. Also a list of relevant stakeholder/MS initiatives is being prepared.

- Liaison with the European Investment Bank, European Parliament, the Economic and Social Committee⁴ and the Committee of the Regions.
- Whenever appropriate for improving the capacity building of the Thematic Groups and the High Level Forum, other key stakeholders will be involved, amongst others, national administrations in charge of construction related affairs and business federations representing the financial and real estate sectors.

2.4. Prepare the criteria/indicators for assessment and impact of the Construction 2020 Action Plan

During 2014, the Secretariat will develop in consultation with the Thematic Groups an approach for assessing the progress achieved with the Construction 2020 Action Plan and its governance structure.

This approach should be discussed at the next meeting of the High Level Forum in 2014

⁴ In particular regarding the opinion raised by the EESC on the COM(2012)433 final, <http://www.eesc.europa.eu/?i=portal.en.ccmi-opinions.25196>

Section 3: 2014 Agenda of TGs and HLF

In order to pursue the implementation of the sustainable construction strategy, several meetings of the thematic groups and one of the High Level Forum will be organised in 2014.

For each Thematic Group two meetings are scheduled to take place in Brussels: one in April 2014, and the other one in September 2014. Further, the annual meeting of the HLF is expected to be organised in October 2014. While only one HLF meeting will take place in 2014 (in contrast to the two meetings that took place in 2013), the EC could help to arrange web-based meetings and webinars in order to facilitate HLF collaboration throughout the year.

A provisional meeting calendar for 2014 is presented below. All meetings are tentatively scheduled to last from 10 am to 5 pm and will be held in Brussels.

Calendar: Construction 2020 meetings 2014

Group	Meeting	Tentative Date
Thematic Group 1	Meeting 3	Tuesday, 1 April 2014
Thematic Group 2	Meeting 3	Thursday, 3 April 2014
Thematic Group 3	Meeting 3	Tuesday, 8 April 2014
Thematic Group 4	Meeting 3	Wednesday, 9 April 2014
Thematic Group 5	Meeting 3	Wednesday, 2 April 2014
Thematic Group 1	Meeting 4	Tuesday, 9 September 2014
Thematic Group 2	Meeting 4	Thursday, 11 September 2014
Thematic Group 3	Meeting 4	Tuesday, 16 September 2014
Thematic Group 4	Meeting 4	Wednesday, 17 September 2014
Thematic Group 5	Meeting 4	Thursday, 18 September 2014
High Level Strategic Forum	Yearly meeting (meeting 3)	Tuesday, 2 nd Dec. 2014 (tbc)

ANNEX A – DETAILED RECOMMENDATIONS THEMATIC GROUPS 1 - 5

Each recommendation is presented according to the following structure:

RECOMMENDATION	SCOPE	POSSIBLE ACTIONS
<i>Recommendation in regards to the Construction 2020 Action Plan deliverables</i>	<i>Fields to be covered or investigated by the recommendation</i>	<i>Proposed actions to be taken at EU/MS/sectoral level that could serve to pursue the aim of the recommendation</i>

DETAILED RECOMMENDATIONS THEMATIC GROUP 1

RECOMMENDATION	SCOPE	POSSIBLE ACTIONS
1.1 Better alignment of EU instruments for sustainable building renovation and infrastructure maintenance		
Building renovation: The Thematic Group (TG) suggests that further EU policies take into account aspects of structural stability, health and comfort in addition to energy efficiency requirements.		
1.1.1 Blending of different financial instruments	Map the specific arrangement needs for various market segments related to residential and non-residential buildings, and develop guidance on blending various financial instruments available. Particular attention should be given to the residential sector and providing technical assistance required to aggregate small projects into 'bankable' projects.	Develop guidelines for financing sustainable building renovation with typical project examples in the scope of European Structural and Investment Funds (ESI Funds ⁵), with special emphasis on technical assistance schemes and blending of financial instruments – Provide return on experience with these mechanisms
1.1.2 Monitoring and assessment of financial instruments and other policy initiatives	Develop a framework for EU wide metrics to appraise the cost-benefits of financial instruments and other policy initiatives, to monitor their implementation and to assess their effectiveness (in terms of jobs creation, new business opportunities, impact on the environment, etc.)	Create an Ad Hoc Group to develop analytical tools and guidelines for public and private entities involved in the measuring country performance with respect to Europe 2020 and ESI Funds implementation ⁶ .

⁵ http://ec.europa.eu/regional_policy/what/future/index_en.cfm

⁶ Measuring performance: country factsheets, http://ec.europa.eu/regional_policy/information/brochures/pages/country2012/index_en.cfm

1.1.3 Late Payment		Follow up on the Information Campaign on the new Late payment Directive⁷ , in particular regarding the implementation of the Directive in the construction sector and the identification of possible “hidden” delays at national level.
1.1.4 Property Valuation	Encourage the valuation industry to adopt internationally recognised valuation standards, in particular those developed by the International Valuation Standards Committee and the European Group of Valuers’ Association, Royal Institution of Chartered Surveyors, and collect information to properly assess the impact of sustainability on market expectations, market value and fair value.	Call for further evidence from relevant bodies to provide detailed justification for this measure. Professional valuation bodies to promote a minimum level of continuing professional development on sustainability issues amongst their members
Infrastructure: The Thematic Group suggests better appraisal of the sustainability of infrastructure projects at the decision stage, especially regarding the maintenance and upgrading of the infrastructure.		
1.1.5 Life Cycle Costing ⁸	Use a life cycle costing approach to anticipate the maintenance phase during construction investment decisions	Define a core cost classification criteria at EU level for LCC implementation taking stock of the work already done at EC level ⁹ - Investigate the possibility of applying a common methodological framework across the EU in compliance with the new proposed public procurement directive, as well as the possible ways of funding LCC Assess the needs in terms of ICT interoperability for LCC monitoring & control strategies ¹⁰ .

7 http://ec.europa.eu/enterprise/policies/single-market-goods/fighting-late-payments/late-payment-campaign/events/index_en.htm

8 This recommendation is also applicable for building construction, renovation and maintenance.

9 http://ec.europa.eu/enterprise/sectors/construction/studies/life-cycle-costing_en.htm

10 <http://www.connectandconstruct.eu/>

1.1.6 Financing infrastructure maintenance and upgrading	Apply the user-pays principle (via e.g. tolling) to finance infrastructure maintenance and upgrading; ensure that funds collected are earmarked for this purpose	Assess implementation within the context of relevant existing Directives ¹¹
<p>1.2 Take-up of R&D results and deployment of innovative practices and governance for the construction sector: The TG suggests that EU support to research and innovation gives priority to demonstration projects and market oriented activities fostering the take-up of new knowledge and innovative approaches in building renovation and infrastructure maintenance.</p>		
1.2.1 Development of Public Private Partnerships to fund pilot initiatives	Support “lighthouse” (flagship) innovative projects addressing various market segments and project sizes, which would strengthen synergies between various public funds and private investors, especially in the context of public procurement.	<p>Develop guidelines to help developing partnerships for innovation, regarding aspects such as adopting voluntary arrangements and a life cycle approach, using common language and tools, networking, etc. and to foster a systemic approach giving active support to a European network of focal points for such innovative approaches</p> <p>Support the transfer of know-how with regard to existing research results in the construction sector, particularly through appropriate training</p>
1.2.2 Quality assurance	Develop a quality assurance strategy specific to the respective needs of new materials, technology and services (e.g. Energy Performance Contracting) to ensure their take up by the market and insurance coverage.	Identify initiatives that provide quality assurance to insurers on know-how related to installation of new technologies and materials, based on among others the ELIOS ¹² experience. Compile a living database of projects and promote it.

¹¹ Eurovignette Directive <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1999L0062:20070101:EN:PDF>

¹² Railway infrastructure charges Directive <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2001L0014:20071204:EN:PDF>
<http://www.elios-ec.eu/>

1.3. Other recommendations		
1.3.1 Active Ageing schemes	Support active ageing, both via an adapted building stock to improve quality of life for the elderly, and by facilitating continued employment of older workers in the sector.	<p>Develop recommendations for adapting the building stock to demographic changes (e.g. promotion of innovative solutions and development of an impact assessment framework to evaluate them; development of an EU housing performance index to evaluate the adaptation of buildings to ageing) to facilitate a more inclusive environment.</p> <p>Develop recommendations for facilitating continued employment of older workers in the construction sector (e.g. continuing training, reconciliation of work and care, employment services for older workers, etc).</p> <p>Identify synergies with the work of other programmes (e.g. Design-led innovations for Active Aging (DAA) under the Stockholm programme).</p>

DETAILED RECOMMENDATIONS THEMATIC GROUP 2

RECOMMENDATION	SCOPE	POSSIBLE ACTIONS
<p>2.1. Better implementation of existing EU and MS instruments to ensure suitably qualified and sufficiently numerous human resources for energy-efficient building renovation and infrastructure maintenance</p>		
<p>2.1.1 Support and extend the BUILD UP Skills initiative (Pillar I & II) to cover building and construction site professionals and include other stages of the property lifecycle such as construction, building operation and management.</p>	<p>Draw conclusions from the BUILD UP Skills initiative's final reporting at EU and MS level; in particular identifying which national issues may benefit from similar solutions at regional or EU level.</p> <p>Explore the extension of BUILD UP Skills based on the evaluation of the initiative. Identify trades/professions, MS and market needs.</p>	<p>Further stock taking from the BUILD UP Skills and similar initiatives (national/regional).</p> <p>Assess the validation of informal skills acquisition in the BUILD UP Skills initiative.</p>
<p>2.1.2 Funding of training: Review the eligibility for funding measures to ensure fair access for all workers, professionals and sizes of enterprise especially for SMEs.</p>	<p>Stimulate the development of partnerships for trainings needs in construction at regional and local level, especially for crafts and microenterprises.</p>	<p>Follow-up on inclusion of BUILD UP Skills roadmaps under the priorities for the 2014-2020 European Social Fund financing.</p> <p>Capacity building and competency development of public procurement contracting authorities.</p>
<p>2.2. Accelerated implementation of skills and qualifications programmes/ initiatives/ regulations</p>		
<p>2.2.1 Provide guidelines for developing partnerships to optimise the uptake of the innovation process by suitably trained people.</p>	<p>Define a) innovation fields (particularly ICT, holistic project approaches, youth/active aging) and b) target groups and c) barriers to overcome as a matrix of these.</p>	<p>Compile examples (based on the "Innovation in Construction" conference) and draft guidelines for review by TG2. Ad Hoc Groups to draft EU guidelines.</p> <p>Better information flows to and from the sector to highlight 'green' links with BUILD UP, Connect & Construct, and similar programmes. Build awareness that construction is a field also for those who seek an 'environmental job'.</p>

		"Active aging" – passing on knowledge to the next generation.
2.2.1 Encourage training for jobs in the green economy.	The Green Jobs initiative - Communication on job creation in the green economy. Tap potential new personnel streams.	In line with 1.1.2 & 1.2.1, Strengthen synergies between different funding mechanisms (Horizon2020, COSME, Cohesion Policy Funds, Leonardo da Vinci, Erasmus+) regarding skills for the green economy
2.2.2 Review existing EU level initiatives and partnerships that support training, including sectorial trade and professional associations.	EU good practice	Support a Sector Skills Council for Construction or similar framework (if necessary, setting a mandate and governance frames with modus operandi.) Support the future European Classification of Skills, Competences and Occupations (ESCO) model in regards to construction. Foster accreditation for skills acquired through experience.
2.3. A common approach to learning outcomes		
2.3.1 Facilitate mobility of workers and construction professionals	Follow up the development and implementation of assessment tools, registries (professional cards), in construction.	Particularly follow up on continuing VET and its relation to EQF, EQUAVET and ECVET fostering mobility Develop competence testing and comparative gap analysis among the various professions.
2.3.4 Health & Safety innovation.		Monitor initiatives of a legal, voluntary or training-related nature.

DETAILED RECOMMENDATIONS THEMATIC GROUP 3

RECOMMENDATION	SCOPE	POSSIBLE ACTIONS
3.1. Environmental performance of buildings		
3.1.1. EU framework for building assessment	Evaluation/comparability of the environmental performance of buildings.	Mapping of indicators building on existing evaluation systems ¹³ that would enhance the comparability of these schemes or provide for streamlined evaluation modules on a voluntary basis. In coordination with the EC "Sustainable Buildings" COM by DG ENV ¹⁴ .
3.1.2. Environmental Performance of Construction Products	Promote a single structure for the assessment of the environmental performance of construction products building on existing environmental assessment tools and European standards.	In relation with recommendation 4.5.1., establish an Ad Hoc Group to gather views and information, on the basis of a pragmatic mapping of national sustainability legislation based on representative cases. If deemed necessary, launch a study on "state of the art" relating to Basic Construction Work Requirement 7 in the scope of CPR ¹⁵ . This initiative would be mainly focusing on the Single Market potential.
3.1.3. Incentives	Use existing instruments within the framework of ESI Funds and Horizon 2020 for resource efficiency in the construction sector. Consider Green Public Procurement as a tool to increase demand for sustainable buildings.	Under the scope of the new MFF ¹⁶ , MS have to report on the strategies put in place. The EC will continue to stimulate market uptake measures within the scope of H2020 and COSME.
3.1.4. Communication	Increase awareness/ knowledge about integrated design and sustainable buildings amongst different actors.	Taking stock of the development/promotion of training material, guidelines for specific target groups (architects, engineers, etc.) at MS level.
3.1.5. Data collection in regards to the assessment of building /product	Consider feedback from buildings in operation, and	On the EU level, a platform, specific but not exclusive to the

¹³ BREEAM (Building Research Establishment Environmental Assessment Method, <http://www.breeam.org/>), LEED (Leadership in Energy and Environmental Design), HQE (Haute Qualité Environnementale, <http://assohqe.org/hqe/>), etc.

¹⁴ http://ec.europa.eu/governance/impact/planned_ia/docs/2013_env_008_sustainable_buildings_en.pdf

¹⁵ European Product Declarations (EPDs) and the work of CEN/TC350 provide a good basis to develop.

¹⁶ http://ec.europa.eu/budget/mff/index_en.cfm

sustainability	transparent communication of operation data, to facilitate the assessment of the eco-efficiency (energy efficiency measures, product based performance) which would provide valuable information for future investment	construction sector, could provide a tool for data gathering.
3.2 Management and valorisation of C&D waste		
3.2.1 Valorisation of C&D waste	Explore the ex-ante assessment of buildings prior to demolition in order to identify viable/potential opportunities in order to facilitate maximizing the valorisation of C&D Waste.	Develop Tools/Guidelines based on existing incentives/practices on MS level, support research (H2020) and technological development, remove legislative barriers to increase resource efficiency Support training to construction companies on a voluntary basis on dismantling buildings, implementing separate collection on site to tackle contamination, assessing wastes (including hazardous waste) and planning for maximizing recycling and use of materials
3.2.2. Economic instruments that provide incentives for recycling of C&D waste.	Improving the recycling infrastructure throughout Europe.	Study on specific waste streams to identify and promote cost-effective recycling practices, including the needs for infrastructure and technologies
3.2.3. In the context of Waste Framework Directive clarify definitions (e.g. better definition of recycling, metrics, more reliable and comparable statistics etc.)	Develop a realistic target for C&D waste recycling based on sound waste management statistics, which takes into account the framework conditions, resource efficiency of the recycling process itself, the possibilities of improving separate collection of specific waste streams and the competitiveness of the sector	Assure that in the on-going waste review process the economic as well as sustainability aspects are balanced and based upon sound data.

DETAILED RECOMMENDATIONS THEMATIC GROUP 4

RECOMMENDATION	SCOPE	POSSIBLE ACTION
4.1. "Fitness check" concerning the Internal Market for construction products and services		
4.1.1 "Fitness check"	<p>Assess the overall consistency and coherence of a number of EU legal acts imposing obligations on the construction sector. The objective is to identify/avoid/remove provisions in EU legal acts creating overlaps, inconsistencies, obsolete measures or excessive cumulative burden. It does not aim at deregulation. Priority legislative areas:</p> <ol style="list-style-type: none"> 1. Internal market, including horizontal and sectorial legislation, public procurement, posting of workers and recognition of professional qualifications 2. Environment; 3. Energy efficiency; 4. Health and safety of workers, health and comfort of occupants. 	<p>A pragmatic mapping study on cumulative burden (including due to inconsistencies, incoherent and duplication) based on representative case studies for services/professions/products with significant cross-border trading.</p> <p>The study should include the involvement of stakeholders, especially SMEs, from the very beginning.</p> <p>The study should include a review of relevant available findings of other EC evaluation exercises, including REFIT, and be coherent with these other initiatives.</p>
4.2. Follow-up construction issues identified in the implementation of the Services Directive		
4.2.1 Network of national contact points for construction products and services	Develop a comprehensive network of national contact points for construction products and services to provide harmonised, consistent and accessible information on EU and national legislation related to construction products and services, covering both national and cross-border services ¹⁷ .	Building upon the actual initiative in the framework of the CPR National "Product contact points" ¹⁸ and the Services Directive "Points of single contact" ¹⁹ , ensure their actual functioning and develop tools for communication and share of good practices (a web-based <i>helpdesk</i> could complement this network).
4.2.2 Insurance for cross border services in construction	Facilitate the provision of insurance for cross border services based on the definition of common criteria for the assessment of equivalence of	Support DG MARKT action with insurers aimed at a pragmatic voluntary approach. In relation with recommendation

¹⁷ Communication on Services COM (2012) 261 final "A partnership for new growth in services"

¹⁸ <http://ec.europa.eu/enterprise/sectors/construction/legislation/>

¹⁹ http://ec.europa.eu/internal_market/eu-go/index_en.htm

	insurances and flexible conditions for temporary cross-border services.	1.2.2. concerning innovative products and services, develop an EU information platform to support risk appraisal by insurers (if possible, including information on construction defects) taking stock from the ELIOS experience (building pathology aspects) and DG MARK initiatives on insurance provision.
4.3. Boost the implementation of Eurocodes		
4.3.1 Eurocodes	Ensure that Eurocodes are more widely used in the EU, including in public procurement.	Study on the actual state of implementation and use of Eurocodes and on possible measures to enforce the use, including requirements for training & education and good practice exchange.
4.3.2 Analysis of Eurocodes	Explore possibilities of further clarification, simplification, harmonisation and evolution of Eurocodes, i.e. analyse differences regarding national safety factors (national determined parameters, NDP), and explore links with other basic work requirements than work stability and fire safety.	Standardisation mandate to CEN (ongoing) and research work from JRC
4.4. Strengthen Market Surveillance in relation to construction products		
4.4.1 Ensure effective market surveillance in construction products	Legislative simplification. Encourage MS to assign the necessary resources and to guarantee proper market surveillance at national and regional level.	Support the proposals under discussion by the co-legislators to simplify the market surveillance legislation of construction products ^{20 21} . Encourage MS to make a wider use of market surveillance alert systems such as RAPEX and ICSMS. Encourage MS for active communication and cooperation amongst market surveillance authorities, which could contribute to a more rational use of resources at individual Member

²⁰ http://ec.europa.eu/consumers/safety/psmsp/docs/psmsp-surveillance_en.pdf

²¹ http://ec.europa.eu/enterprise/policies/single-market-goods/internal-market-for-products/market-surveillance/index_en.htm

		State level.
4.5. Assessments of sustainability provisions in Member States		
4.5.1 Assessments of legislative sustainability provisions in Member States	In relation with recommendation 3.1.2., gather preliminary views about the aspects to be considered in relation with the EU internal market.	Establish an Ad Hoc Group to gather views and information, on the basis of a pragmatic mapping of national sustainability legislation based on representative cases. If deemed necessary, launch a study.

DETAILED RECOMMENDATIONS THEMATIC GROUP 5

RECOMMENDATION	SCOPE	POSSIBLE ACTION
5.1 <i>Establishing priority countries for the international promotion of construction and maximising the benefits of trade negotiations</i>		
5.1.1 Focusing future work and collaboration on the construction sector with international partners	Due to the particularities of trade in the construction sector, such as high dependence on local market conditions, geographical distance and high exposure to political risks, a well-targeted selection of potential partner countries for intensifying cooperation is necessary.	<p>A list with priority countries has been established²². Special emphasis will be put on maximising the benefits from on-going negotiations for Free Trade Agreements (FTAs), notably the Transatlantic Trade and Investment Partnership (TTIP) with the US and the FTA with Japan. Industry associations shall provide the EC with factual information and data about trade flows and investments in international markets.</p> <p>The full use of the Market Access Database shall be ensured for trade in construction products. In the mid-term, creating a market access panel for construction products chaired by DG Enterprise is seen as highly valuable.</p>

²² The EU's neighbourhood, including candidate and accession countries (e.g. Turkey) and the Euro-med region (e.g. Algeria, Morocco and Egypt); Asia-Pacific (e.g. China, India, Indonesia, Australia), the Americas (e.g. the US, Brazil, Mexico, Chile, Colombia, Peru), Russia and Central Asia (e.g. Georgia, Kazakhstan), Africa (e.g. South Africa, Angola, Nigeria, Congo). The Gulf region will continue to figure among the priorities, through the Group considers that that there is no need for immediate action.

5.2 New support measures and schemes		
<p>5.2.1. Funding and guarantees for international construction projects</p>	<p>The Group recommends to the EU institutions, together with Member States, to address the issue of access to finance and guarantees, notably for trade and investment with high-risk regions and those where European companies suffer from unfair competition.</p> <p>Foster during the next programming period (2014-2020) the participation of the private sector in EU External Aid projects through blending mechanisms, in line with G20/8 conclusions and respecting OECD Rules.</p>	<p>The proposal on blending of external assistance (“EU-Africa Infrastructure Trust Fund – blending 2.0”) shall be considered in the “EU Platform for External Cooperation and Development” and industry be involved.</p> <p>The important role of national Export Credit Agencies shall be recognised and Member States encouraged to reinforce national schemes, and/or including further possibilities for funding schemes at European level.</p> <p>The engagement of the EU and the Member States with major international partners, inside and outside the OECD, shall be reinforced to promote a level playing field for export credits and to reduce practices of unfair competition.</p>
<p>5.2.2. International cooperation on regulation and standards</p>	<p>Foster the international cooperation on regulation and standards beyond Eurocodes notably to include construction products and professional qualifications.</p>	<p>The following areas shall be explored for this purpose:</p> <ul style="list-style-type: none"> • Construction design: energy efficiency of buildings, structural design (Eurocodes), Eco-Management Audit Scheme (EMAS), • Construction products: promoting the international uptake of harmonised construction products, test methods and standards, including sustainability aspects (Construction Products Regulation and CEN/TC 350 standards), environmental requirements (green public procurement, eco-label), • Professional services: recognition of qualifications of engineers architects and works.

Annex B: Initiatives relevant to Construction 2020, proposed examples

What initiatives?

Construction forums tend to have a B to B focus, attracting construction professionals such as architects, contractors, installers, energy professionals, developers, engineers and consultants, as well as public sector representatives, land owners and trade associations, among others.



The EC welcomes relevant multi-stakeholder initiatives, regional or national, whose activities fall under the scope of Construction 2020 Action Plan. These initiatives may bring together a variety of key construction actors (e.g. contractors, professionals, workers, suppliers, clients, etc.) to discuss broad or specific issues related to sustainable construction. They may also directly involve or interface with public sector representatives in order to collaboratively drive growth and sustainability in the construction. Multi-stakeholder initiatives sometimes also involve NGOs whose activities focus on climate change, energy use or sustainable building, as well as scientific or technical experts who provide technical expertise and advice.

Relevant public, private and joint public-private initiatives exist in a number of MS. Their scope may be limited to very specific activities, such as developing building performance assessment systems, or may encompass a number of activities (policy development, awareness raising, training and capacity buildings, etc.) within an overall objective of promoting increasingly sustainable construction.








Select examples of MS-level initiatives and multi-stakeholder organisations share:

- Its holistic approach the overall spirit of the Construction 2020 Action Plan
- Those initiatives receive desirably a certain degree of institutional support/recognition

Proposed examples²³:

LOGO	EU -28	Initiative	Description	Web
	BE	CLUSTER ECO BUILD (Belgian Sustainable Building Council)	The Ecobuild Cluster, is one of the projects set up by Brussels-Capital Region to promote sustainable construction and renovation, especially as a response to the effects of climate change. It is part of a strategy of Sustainable Development which promotes the creation, growth and long life of companies.	http://www.cluster-ecobuild.com/en/about-us/ecobuild-cluster
	DK	Future Industrialized Sustainable Construction and Urban	The FISH program aims to provide a new and innovative business model to boost Danish presence in the foreign market for sustainable buildings and urban development. The program is specifically focused on driving market presence in China, Germany and Norway for Danish suppliers of technology for buildings and districts,	http://www.fishclusters.dk/

²³ Those examples do not represent any FINAL choice made by the EC Services.

		Development	architects and advisors, as well as research institutions.	
	FR	Institut Pour la Conception Ecoresponsable du Bâti	This organisation brings together a variety of sustainable construction experts in France, including professionals in the construction, architecture, urbanism, health and environmental sectors.	http://www.asso-iceb.org/
	FR	Association HQE	The Association HQE is non-profit association and platform for promoting sustainability in the construction sector. It brings together public and private actors and is responsible for the HQE certification scheme.	http://www.asso-hqe.org/
	DE	Roundtable Sustainable Building and Information Portal on Sustainable Building	The Roundtable Sustainable Building serves as an advisory body to the Federal Ministry for Transport, Building and Urban Development (BMVBS), to support implementation of sustainable building activities. It consists of representatives from the building trade, industry, chambers of architects and engineers, the relevant building authorities and researchers. A related initiative is the Portal on Sustainable Buildings, which is a communication platform for public and private actors, which provides information and promotes communication on sustainable	https://www.bnb-nachhaltige-sbauen.de/netzwerk.html
	ES	Fundacion la Casa que Ahorra	Forum created by different construction leaders, which aims to promote sustainability in the Spanish construction market. It further collaborates with a number of public institutions.	http://www.acasaqueahorra.org/inicio
None	ES	Foro del Ciclo Integral de la Construcción	The Confederación Nacional de la Construcción (CNC) is a business organization that involves the main construction organisations in Spain, from construction companies to promoters and industrial enterprises. The group has signed an agreement called Foro del ciclo integral de la construcción , which brings together industry and trade unions.	http://www.portal-cnc.com/
	UK	Strategic Forum for Construction	The Strategic Forum for Construction brings together the key actors of the UK construction sector. It further interfaces with the UK government on behalf of the sector. Sustainable construction is one of the key interests of the Forum, with a dedicated SFC Sustainable Construction Task Group driving work on this subject.	http://www.strategicforum.org.uk/
	UK	Construction Industry Council	Representative forum for the professional bodies, research organisations and specialist business associations in the UK construction industry.	c
	UK	Green Construction Board	The Green Construction Board brings together government and industry representatives and was established to drive implementation of the “ Low Carbon Construction Action Plan ”. The Board also works more broadly on green construction issues and relevant policy development and implementation.	http://www.greenconstructionboard.org/

Annex C: Selection of EU and non-EU 2014 construction forums

Selection of European national construction forums

Logo	Forum	Country	2014 date (some dates may be tentative)
	World Sustainable Buildings 2014	Barcelona	October 28/30th 2014
	Haus-Bau-Energie	Germany	Several dates in Jan / Feb 2014 (different cities)
	Bauen + Wohnen Salzburg	Austria	6 – 9 February 2014
	Bauen & Energie Wien	Austria	13 – 16 February 2014
	Energie Dresden	Germany	27 February – 1 March 2014
	Ecobuild	UK	4 - 6 March 2014
	CEB Stuttgart (Clean Energy Building)	Germany	6 – 8 March 2014
 Building Trade and Home Renovation 2014	Building Trade and Home Renovation	Finland	14 – 16 March 2014
	Écobat	France	19 – 21 March 2014

	Bluebat	France	April 2014
	Nordbygg	Sweden	1 – 4 April 2014
	Innovative Building	France	8 – 10 April 2014
	Haus-Holz-Energie Stuttgart	Germany	11 – 13 April 2014
	Building Holland	Holland	6 – 8 May 2014
	Construtec	Spain	6 – 9 May 2014
	Clean Energy Building Budapest	Hungary	15 -16 October 2014
	Baumesse Bad Kreuznach	Germany	17 – 19 October 2014
	Construire Naturel	France	21 – 23 October 2014
	Artibat	France	22-24 October 2014
	Restructura	Italy	27 – 30 November 2014

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Selection of international and non-EU construction forums

Logo	Forum	Country	2014 date (some dates may be tentative)
	World ECO Construct / INTERMAT	United Arab Emirates	14 -16 January 2014
	Green Building Expo	Qatar	28 – 30 January 2014
	ECO House & ECO Building EXPO	Japan	26 – 28 February 2014
	Building Lasting Change	Canada	2 – 4 June 2014
	Greenbuilding Brasil	Brazil	26 – 28 August 2014
	Construir Rio de Janeiro	Brazil	1 – 4 October 2014
	GBC - Green Building China	China	14 – 16 October 2014
	Greenbuild EXPO	USA	8 – 10 November 2014



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Strategies for the European Construction Sector

A PROGRAMME FOR CHANGE

A report compiled for the
European Commission
by W S Atkins International Ltd



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CONSTRUCTION
EUROPE

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Strategies for the European Construction Sector

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A Programme for Change

This document is the final report of the
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It was prepared for the European Commission

by

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in association with

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Strategies for the European Construction Sector

—

A Programme for Change

CONSTRUCTION EUROPE

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Preface

The Opportunity We Face

Construction is back on the agenda after two decades of declining markets. Environmental concerns, the building of European infrastructure networks, solving housing problems, reconstruction in Eastern Europe and the former Soviet republics, and the return to more rapid economic development in many parts of the Third World mean there is much to do and many markets to win.

Construction is an industry in which Europe can beat the rest of the world. We have world-class designers, and they can spearhead the industry and win markets. Tourists visit Europe to marvel at our architectural heritage and our well conserved countryside and go home with photographs of our villages, towns and cities. The diversity of our 12, soon to be 16, perhaps 20, distinct architectural and engineering traditions is a great strength, which will be stronger when they work and compete together.

But there is a danger of failing to grasp the opportunities, and allowing the markets in Europe and the quality of construction to decline. There is still much that can be done to make the industry stronger and to remove some of its weaknesses, and to improve the built environment of Europe. The main message for the sector is that it has to *compete* for markets, resources and recruits, with other sectors of the economy. The industry has to take an active role in improving performance, promoting demand, and mobilising finance, with the help of governments.

Growth and Employment Issues

This report deals with long-term strategies to improve the sector's competitiveness and quality, and raise the level of construction output. Increased output is needed not only to provide better infrastructure and housing, but also to contribute to improving the competitiveness of other sectors of the EC economy and raise investment and economic growth. Underlying these strategies is the need to increase productivity, partly through improved training and innovation.

This report was compiled and is published at times when there is great concern about the growth of unemployment in recent years and the recession which is affecting most of the EC. The Commission White Paper: Growth, Competitiveness and Employment proposes measures to tackle this employment crisis.

The report warns that the effective demand for construction is limited by restrictions on public financing, and that output might continue to decline, just when the needs for infrastructure and building are increasing. This would have the double danger of failing to provide the infrastructure needed to make other industries competitive, and also reducing employment and incomes in

construction, which is a relatively labour-intensive industry. Increases in sector output and increases in productivity through training and innovation must go hand-in-hand. In the short term there is spare capacity in many parts of the industry, but in the long run construction demand cannot increase without an increase in the quality of the workforce and the performance of the industry. This means that output should grow faster than employment in the industry, and that the quality of jobs should improve. The construction industry should not be seen as a source of low-cost jobs leading to low-quality and uncompetitive work, but as the major part of the investment in productive fixed assets which improve the capacity and competitiveness of manufacturing and service industries, and create a better living environment for people. This makes the measures discussed in this report of great urgency, if Europe is to enter a new period of growth, and of restructuring of employment.

The Objectives of the Study

This study is intended to assist the sector in developing a strategic response to the major issues which are creating change. As such, it is intended to inform the enterprises and their representatives in the sector, as well as government and the European Commission. The Terms of Reference required the study to "deliver a widespread and in-depth knowledge of the EC construction sector as defined by the construction of works, the production of construction materials and construction products, in the light of the internal market". The construction equipment industry was excluded. The study was required to "analyse the industrial structure of the sector, evaluate the present competitive position of the EC, evaluate in global terms the construction needs for the next decades and the demand deriving from this need, and ascertain technological changes and innovation".

The Report Contents

The report summarises the findings of a programme of research and industry consultations carried out by the Consultants during the Strategic Study on the Construction Sector. The work took place over the period January 1992 to October 1993.

The report focuses on the strategic issues and proposed strategies. It necessarily omits, for reasons of space, much of the background information and detailed factual data which the Consultants collected.

Chapter 1 is an overview of the strategic issues, and summarises the overall conclusions and recommendations of the study.

Chapters 2 to 5 cover the main issues of the structure of the industry, its processes, markets, costs and prices, and competitiveness. Chapters 6 to 9 then discuss four of the key areas in which the industry must take strategic action: quality, technology and innovation, human resources and training, and environment.

The final chapter summarises the discussion of the previous chapters into a set of proposals for action, and indicates the Consultants' view of the priorities for each of the main groups of actors in the sector. The chapter includes a review of the benefits of the proposed strategies and the consequences of failure to take action.

What Happens Next?

The report is intended to stimulate debate. There will not be universal agreement with our views of the future and the strategies to be pursued. The strategic proposals result from the Consultants' analysis of opinions presented to us during discussions with over 700 firms and representative bodies in the sector throughout the European Community during the course of the study, and with representatives on the Steering Committee. The initiative for action should be expected usually to come from the firms and their representatives in the sector, with support and legislation from national governments and from the Community where necessary.

The Consultants have not attempted to make detailed prescriptions for individual countries or firms. Each subsector, country and business will have to consider its own policies and actions in the light of the trends and scenarios which the report describes. Some of the strategies which are proposed are already being followed by many parts of the sector. We hope to help create a consensus on strategy at all levels and in all Member States, within which all can act.

WS Atkins International Limited

KEY FACTS ON THE EC CONSTRUCTION SECTOR

- Construction output:
 - 520 billion ECU 1992, 10% of GDP (1991 prices)
 - 550 billion ECU 1990, 12% of GDP (1991 prices)
- Value added by contractors: approximately 5-6% of GDP
- Employment (1990):
 - 9 million in contractors
 - 1 million in design and consultancy
 - 2.5 million in construction products manufacture
 - Estimated 14 million in services, government, distribution and other suppliers
 - Total: 20% of EC civilian jobs
- 60% of gross fixed capital formation in EC
- 1.8 million enterprises (including one-person firms)
- 90% of employment in enterprises with less than 500 employees
55% of employment in enterprises with less than 20 employees (97% of firms)
- Shares in EC construction output (1991)

New residential	23%
New non-residential	21%
Civil engineering	23%
Renovation and maintenance	33%

Chapter 1 - OVERVIEW AND SUMMARY

Our Vision of the Industry

- 1.1 There are two scenarios for the future European construction sector. We have a vision of an industry which is high in public esteem, applying the best technology to improve Europe's landscape and living environment, building beautiful buildings and creating towns in which people are happy to live and work, providing good and affordable housing, and efficient uncongested infrastructure. People will be glad to commission construction in the knowledge that it will normally be free of worry and conflict, and their property will be safe, healthy and easy to maintain. School-leavers and graduates will be proud to enter a prestigious, rewarding, creative and secure career which contributes to improving the global environment. Designers and managers will have the computer tools to liberate creativity and to select well-tested products and construction details. Many of the more difficult site tasks will be replaced by mechanisation, factory-produced components, and easy-to-use materials, leaving craftsmen free to use their skills productively. Construction will be viewed by government as the tool for building the future society, by providing efficient infrastructure when and where it will promote useful development, and reinforcing Europe's strength of diversity of cultures, traditions and systems.

The Danger

- 1.2 The alternative scenario, which we reject, is an industry which would increasingly be seen as a source of low-skilled low-wage employment, and as a fragmented non-essential industry which can be turned on and off to control public expenditure. It would come to be seen as a mere necessity which has to provide basic shelter from the weather and the minimum essential amount of infrastructure to resolve the problems of congestion, at the lowest price, irrespective of future problems of maintenance, operation and the negative impact on communities, business and the environment. Construction would be seen as acts of *destruction* which have to be controlled through legislation and litigation, not promoted for the public good. Demand and output would then continue to be low or declining as a share of national income, with serious implications for employment, social conditions, and the competitiveness of the rest of the economy.
- 1.3 This report is about ways of moving the construction sector towards the first scenario. In this overview we discuss the main issues facing the industry in Europe, and suggest objectives and priorities for action.

Key Factors of Change

- 1.4 Europe is at the early stages of a period of great social, political and economic change, as a result of European integration, the enlargement of the Community, changes in the emerging democracies of eastern and central Europe, and also through wider changes in world trade. This has a direct impact on the construction sector, through:
- new infrastructure and building needs, and changing regional patterns of investment;

- increased levels of trade and strength of competition, in construction work, products and services;
- changes in the regulatory framework in which the industry operates: product approvals, registration, procurement systems, liability and insurance.

1.5 There are also other changes affecting the industry at the same time:

- applications of new technology, creating needs for new skills and competencies;
- changes in the construction process requiring new roles and new management procedures;
- demographic and labour market changes, including immigration, affecting recruitment and the structure of the labour force;
- environmental pressures.

The Sector's Problems and Priority Issues

1.6 The construction sector faces a multiplicity of challenges arising from the changes outlined here, but it is a fundamental conclusion of this study that there is no single dominant problem. It is important to recognise this. Some other industry sectors have clear problems, for example declining demand because of technical change (such as coal-mining) or low-cost import penetration (such as consumer electronics). The construction sector on the whole is not seriously threatened in the short-term, although it has to take action to adapt to change and increase its share of economic activity, and there is considerable room for improvement in the delivery of its service.

1.7 There are, however, enormously important issues for the long-term welfare of society and the growth and performance of European economies. These can be categorised into demand issues and supply issues:

- Demand: The share of construction in the gross domestic product (GDP) of the European Community is too low. It has been in long-term decline. There is a crisis of demand caused by financing problems and declining public investment. The current recession makes the problem acute. This has a serious impact on Europe's economic growth, because construction makes up over half of gross fixed investment, and also on the competitiveness of other industries, and on employment. Construction output should be raised from its 1992 level of 10% of GDP to its previous level of 12%, with a long-term target of 14 to 15%.
- Supply: The quality and value-for-money of construction in most countries can be improved. Clients are often dissatisfied, and this directly affects demand for construction. There are also large potential savings in cost and time, which would enable a larger real contribution to be made with the resources available. Construction quality and value-for-money should be raised through training, innovation, standards, better procurement, guarantees and control.

1.8 The report's findings on these two main aspects, level of demand and performance of supply, are summarised in the remainder of this overview chapter. They are discussed further in the remaining chapters of the report, leading to the action plan in Chapter 10.

Demand Scenarios [Chapter 4]

- 1.9 There has been a fear in some countries that there might be a long-term, or a once-and-for-all drop in construction demand as population stabilises or declines, and as major infrastructure and housing needs are satisfied. We argue strongly against this view. Social and economic changes will generate increasing construction needs and the problem will be to satisfy these needs. The share of GDP for construction should increase, but this will be difficult to achieve, because it implies increasing macro-economic savings rates, at the same time as public expenditure is constrained by tax and public deficit restrictions and more expenditure is needed to meet the needs of an ageing population and long-term structural unemployment.
- 1.10 There has been a long cycle in European construction activity, with a peak in the mid-1970s, then a gradual decline until the mid-1980s, and a short boom up to a new peak in 1990/1. If nothing is done to promote private demand, to halt the decline in public expenditure, and to provide the necessary funds for infrastructure, there may be a new decline, and then construction will not be able to provide the new infrastructure and housing that is needed.
- 1.11 Chapter 4 considers three alternative scenarios for future construction and economic growth.
- An attainable, but optimistic, high-growth scenario, with successful improvements in construction performance, corresponding to our vision of the industry set out in para 1.1, shows construction output doubling by the year 2005, and employment rising rapidly at first and then more steadily, to create 5 million new jobs in construction and 15 million throughout the economies of the EC by the year 2000. This scenario promises continual improvements in housing and cities, and the infrastructure to enable Europe's industry to restructure and become increasingly competitive.
 - A more conservative scenario, with GDP growth and construction's share of GDP returning to historic levels of the 1980s, shows a return after about 4 years' growth to the output levels attained in the boom of 1990/1, and then steady growth in construction output, averaging 3% per year. This creates 2 million jobs in construction by the year 2000 and 6 million in total throughout the EC, reversing the decline in employment which took place over the 1980s.
 - In a pessimistic scenario, with low growth and a low share of construction, and also low innovation and low productivity growth, the construction output continues to fall for several years, and then grows slowly, but never returning to the levels of 1992, let alone the boom levels of 1990/1. A further 2 million construction workers and 6 million workers in total become unemployed, despite continuing labour-intensive technology. In this scenario, corresponding to the dangers described in para 1.2, the living and working environment will deteriorate, and European industry will become increasingly uncompetitive, and the standards of construction are likely to decline.
- 1.12 One of the sector's greatest concerns is the volatility of construction demand. This is of particular concern at present when most countries are in recession after a very rapid construction boom. The volatility is most apparent in prices, since output is smoothed by the effect of lengthening and shortening planning and construction periods. Profitability is therefore very volatile and this severely inhibits long-term planning and investment in training, research and capital equipment. It is essential, therefore, that any measures to increase

construction output should not be done merely to respond to the short-term recession, which might begin a damaging stop-go cycle of over-reaction followed by new restraints, but should be part of a long-term growth and employment strategy gradually to raise construction levels to a new steady state.

Competitiveness and Industry Performance [Chapter 5]

- 1.13 In one sense the competitiveness of the European construction sector, compared to that of other countries, is not seen as a real problem. The EC industries on the whole are as good as those anywhere in the world, and in many ways much better. Europe has a very diverse and attractive built environment, although with many severe needs for urban renewal, infrastructure and housing improvement. It has many of the world's best designers and most beautiful cities. Europe's contractors and consultants are successful world-wide - much more so than Japan's, and US firms really compete only in a few activities which include heavy engineering contracting, and high-rise commercial projects. There are some lessons to learn from both the USA and Japan on major projects: the economies of standardisation of components and designs in the USA; rigorous management of time and quality performance in Japan. At the level of the great mass of small local projects, however, each has a sector adapted to local conditions.
- 1.14 The level of import penetration in construction is not a major problem either, although it is seen to be so by some sectors of the construction products industry in some countries. Rather, it is desirable to encourage a little more trade in products and more inward activity by contractors in areas where they have new products to offer or techniques to teach us.
- 1.15 There is, however, a belief in several countries that the industry is not giving as good a service as it could, because of low skill levels, poor cost and time performance in project management, problems of building defects and a slow adoption of new techniques. This belief is not universal in the industry, but there is clear need for improvement. Many clients are highly critical of the industry and view construction as a harrowing and difficult process.
- 1.16 There is also a specific problem of the vulnerability of small consumers to poor workmanship and business practices, particularly in those countries which do not have strict regulation of small builders and good control by architects or other technical control arrangements. Conversely, where strict regulation exists construction is often a difficult process and can be prohibitively expensive for small jobs.
- 1.17 The efficiency and responsiveness of the construction sector depends on its structure, with a very large number of very small enterprises. 97% of the 1.8 million firms have less than 20 employees; and about a quarter are self-employed persons. This reflects the large number of small contracts, the extensive use of subcontracting, the wide variety of technologies, specialisms and clients, and the very local nature of most of the business. Half of employment in contractors is in firms of less than 20 employees; 90% in firms of less than 500. So SMEs will be the main source of new employment and need support.
- 1.18 Its highly fragmented nature, however, means that the industry does not invest enough in training, research and marketing. Many small firms have weak management, and a few have inadequate technical capacity. Many very small firms evade controls and regulations. Employment in micro-firms is insecure and often unregulated. For these reasons training, information and other forms

of support need to be specially targeted at very small firms, but the level of self-employment and unregulated activity should diminish and micro-firms should be helped to grow and create informal or formal links between themselves and with the main contractors on which they depend. Overall, the relative shares of large, medium, small and very small firms is unlikely to change, but there should be fewer, but on average slightly larger, micro-firms.

- 1.19 On the supply side, the main concerns of firms in the sector can be summarised as:
- recruitment and skills problems, partly resulting from poor working conditions on site and a poor industry image;
 - poor profitability, partly a result of characteristics of the market which lead to cut-throat competition, resulting in inadequate investment in training and research;
 - increasing costs due to stricter environmental, health and safety, and trade legislation.
- 1.20 An analysis of available data on project costs, along with materials prices and wage costs, seems to indicate that differences in construction cost between EC states are largely due to differences in the general price level. This is despite large differences in real wage rates between Member States. It appears that the low-wage countries (which include Portugal, Greece and the UK) also have low productivity.
- 1.21 There are very wide differences in the prices of construction and products between countries, but there is no clear pattern of high- and low-cost countries. Differences are due to local market conditions, and the fact that there is very little trade in construction products because of the low value-to-weight ratio of most construction products, as well as very different standards and specifications, and barriers due to differing testing and product certification requirements. There is therefore potential scope for cost savings from harmonisation of European construction product standards and the increased trade which will be permitted by the Construction Products Directive. In many cases the savings will be limited by transport costs, but nevertheless many product producers will have to improve their product development, their cost performance and their marketing in order to compete. They must do this and not seek protection.

Quality in Construction [Chapter 6]

- 1.22 Quality is considered in many EC Member States to be a basic problem of the industry. Lack of quality has two distinct aspects:
- defects of either design or workmanship. A certain level of problems is inevitable, but excessive problems are a consequence of poor care and attention to detail, poor supervision and control, or insufficient definition of the client's needs;
 - a low level of specification: in other words sacrificing performance, long life, appearance or long-term operating costs for lower initial costs. These are deliberate decisions taken as a consequence of short-term vision, high financing costs, or inefficient cut-throat competition.
- 1.23 There is a general belief that both aspects should be improved in order to:
- raise the quality of the built and indoor environment;

- reduce life-cycle costs of construction, by reducing maintenance and redevelopment cost, and shifting construction output away from high-cost maintenance activities to efficient new-build activities;
- reduce the costs of defects, including the costs of rework and repairs as well as the administrative and legal costs;
- make construction a less risky activity for clients and hence promote investment in good construction;
- give EC constructors and product manufacturers a reputation and technical advantage which will contribute to improving export capabilities.

1.24 This involves most of the issues and strategies discussed in this report. In particular, it is important that the sector, particularly designers and contractors, should be able to compete on quality and not just on price. Among the proposals that would contribute to improvement in quality are:

- improved procurement procedures, which take account of quality, and life cycle costs, and of bidders' capabilities and past performance, not just lowest initial cost;
- improved training systems, and better dissemination of new technology;
- registration and qualification systems for firms and individuals;
- a widespread and effective system of guarantees and liability insurance, founded on a clear system of liability legislation which is both flexible with respect to clients' needs and provides a high level of consumer protection;
- an appropriate level of independent supervision or control, whether by architects, consulting engineers, technical architects, *Prüfingenieurs*, municipal building control officers or insurers' technical control bureaux, but leaving the responsibility for quality and defects clearly with the designers and constructors;
- the continued development of the system of standards and technical approvals for products and services;
- development of appropriate systems of quality assurance, adapted to the needs of construction firms and consultants, leading on to development and adoption of Total Quality Management systems;
- improved organisation and management on site, including more detailed planning (which should be fostered by implementation of the Temporary or Mobile Construction Sites Directive), and good information systems.

1.25 Efficient systems of registration and qualification are essential to maintain quality and enable clients to choose properly qualified contractors, consultants and craftsmen. They should not be obligatory, but should be strongly supported by the industry and by its insurers and financial institutions. Insurance-based systems, in which firms' claims records are taken into account and which influence premiums for guarantees, liability insurance and latent damage insurance are likely to be the most effective. There may be national qualification systems, or even several competing systems, but to common standards and classifications so they are mutually recognised. There should be common approaches for all professions, and for all contractors, and for individual craftsmen. The registration and qualification of professionals, covering architects, engineers and project managers, must avoid corporatism, and permit the exercise of specific skills through alternative educational and career routes. The design and specification of these systems need careful study, so that they do not create bureaucratic burdens, are flexible and simple enough for small firms and do not lead to abuse.

- 1.26 The industry, with the insurance sector, should take the lead in promoting good guarantees, making this an important factor in competition and marketing.

Consumer Requirements and the Changing Construction Process [Chapter 3]

- 1.27 In most Member States the range of contract forms and procurement processes is changing, and this affects the roles of the participants and the allocation of risk. The construction industry serves all sectors of the economy and a wide range of types of customer, from individuals with an occasional need for home repairs, to multinational corporations requiring major projects which are replicated world-wide. Their needs differ and it is right that a range of different types of procurement process should be available to meet their needs.
- 1.28 The great majority of customers are individuals or firms who have a once-only need for a construction project and are not experienced. They need a high level of protection and assurance, which can be provided either:
- by the traditional system of the independent consultant working for the client's interests, properly registered, regulated and supervised by a professional body, under a regime of liability and professional indemnity insurance; or
 - by insurance-backed guarantees in cases where the client chooses a design-and-build, speculative build (i.e. buildings built without a final customer and then offered for sale - a common system with private housing) or other one-stop system.
- 1.29 Experienced customers ought to be free to choose whatever procurement system is convenient, subject to controls on public safety and urban planning which are assured by a clear and universal system of construction permits, followed by an appropriate degree of independent inspection either during construction or on completion.
- 1.30 Consumer protection requires that clients and consumers have reliable information on the qualifications, capabilities and competence of their contractors (constructors, designers, suppliers, supervisors and project managers), and an assurance that unqualified individuals and firms with a bad record or inadequate technical and financial capacity are not allowed to practise. This requires registration and qualification systems which consumers can trust, and which take account of the contractor's or consultant's past performance record, as discussed above.

Technology and Innovation [Chapter 7]

- 1.31 In the long-term the rate of adoption of new technology in construction and in construction products determines the future competitiveness of construction and the value for money and choice available to clients and consumers. It also determines the level of employment in the industry and the future skills requirements.
- 1.32 Technology has changed over the last decade and the pace of change is likely to increase. New materials, information technology, increasing prefabrication of elements, and more on-site mechanisation are some of the areas of innovation. They are outlined in Chapter 7.
- 1.33 Most significantly, changing technology has induced changes in the construction process. There is continually more choice of products and materials, more off-

site manufacture and simpler and more mechanised site work, in building and in civil engineering. Projects are more complex and the choices wider, so the design process is more important and requires greater input and a wider range of skills and disciplines.

- 1.34 The rate of innovation is considered to be too slow, however, because of the uncertainty and volatility of markets, short-term management attitudes, low skills, low profitability and the large number of very small firms. There are three priorities for action to improve innovation:
- better training and dissemination of existing technology;
 - coordination of European research activities;
 - an increase in research levels to the average of other industries.
- 1.35 New and existing technology and product information needs to be disseminated better, especially to small contractors and small professional practices. This requires networks of local training and information centres, targeted at small firms. In general the education and training system needs improvement, and the obligation for continuing professional development for craftsmen, managers and professionals needs to be enforced through registration and qualification systems. Innovative products, equipment and processes need active marketing. In some cases franchising of know-how and equipment to small firms would assist dissemination and innovation.
- 1.36 Until recently there was no coordination of construction research between EC countries. ENBRI has now begun a process of networking between government research bodies, and consultation with the sector's research community. Much more needs to be done to create a flow of information across Europe, and to begin to create a system by which research needs are identified and research is channelled to the most suitable research bodies.
- 1.37 Better cooperation between all actors in the construction process is also needed. The major constructors need to work closely with product suppliers to develop new products and their applications together, as the automotive industry does, and to develop suitable site processes. Suppliers need to work also with clients, specifiers and training bodies to provide support in information, standard design solutions and training material. Closer interaction between designers and contractors will also help promote innovation.
- 1.38 Finally, the total level of construction research is low, and needs to be raised nearer to the average for other industries. The EC spends much less than Japan on construction R&D. The level is low partly as a consequence of the structural characteristics of the industry: many small firms, volatile markets which create short-term attitudes, low profitability because of cut-throat competition, and fragmentation of the industry into separate interest groups - architects, engineers of several separate disciplines, project managers, site contractors, specialist contractors, technical controllers. These disincentives to R&D could be overcome by a system of incentives, financial support and possibly the inclusion of research activity as a criterion in prequalification for appropriate high-technology contracts. An effective system of guarantees, linked to effective monitoring and feedback on defects, would also create strong incentives for firms to do research to solve recurrent problems.
- 1.39 The problem of the slow adoption of new techniques will only be solved when there is a positive attitude to innovation, in a technology-rich environment. The positive encouragement of innovation in public projects as in the French *Grands Projets*, and the technology required for unique projects such as the Channel Tunnel, are important in creating these attitudes. They will only fully be

achieved when clients and users will demand better and innovative works, secure in the knowledge they are backed by good guarantees, insurance and an effective system of technical approvals.

Skills, Training and Labour Market Issues [Chapter 8]

- 1.40 To improve quality, productivity and value for money, the industry must attract and retain competent people. Recruitment of young qualified people into the construction sector will be an increasing problem, particularly for site operations. Construction site work is often seen as poorly paid, dangerous, unhealthy, hard and unpleasant, with poor job security, and uncertain working hours. New technology will demand appropriately trained operatives. It is said that the level of skills on construction sites now is worse than a generation ago, partly because the ready availability of unskilled immigrant and temporary labour who work below nationally agreed rates is a disincentive to invest in training and skilled labour. Work in construction has also become relatively less attractive to well educated school leavers than occupations in manufacturing and services, and so the general level of education has declined.
- 1.41 It is generally agreed that training arrangements in all countries can be improved; some systems are much less effective than others and need major strengthening. In particular, training must be directed at developing and updating people's skills in their current work. Keeping the trainers up-to-date is a special problem. A wide-ranging study is needed of different countries' training systems, for crafts, professions and management, to identify the best elements of each. The labour unions have an important role, working with employers and government, to identify training needs, propose solutions, and assist the training institutions.
- 1.42 Future training needs will be even greater as the pace of technological change increases. Technology will reduce the need for some specialised manual skills on construction sites and create new needs. One of the objectives of technology will be to increase the degree of off-site manufacturing and make site assembly processes easier and less labour-intensive, and so reduce the need for some skills, but different and more flexible skills will be needed, with new training needs. On the other hand, the large volume of maintenance, refurbishment and preservation work will continue to need traditional skills with new materials and methods. Generally, training needs will shift away from manual and technical skills towards literate, numerate and problem-solving skills, and workers will need a broader base of competence.
- 1.43 It is essential to promote the free movement of construction labour and professions. It is an industry where the product doesn't move: the labour force moves to the site. Completing the process which was begun with the 1st and 2nd Directives on mutual recognition of qualifications would be a catalyst in promoting good training systems.
- 1.44 Professions must also adapt both to new technology and to changes in the construction process. The design professions will need to have a deeper specialisation but with a broader-based education, and the flexibility to work efficiently in multi-discipline teams.
- 1.45 Improved training will need to go hand-in-hand with improved employment conditions, to provide an adequate return to individuals and firms for their investment in training, and to encourage more stable employment patterns. Countries with higher labour costs and more secure long-term employment have more incentive to provide good training, which improves productivity and quality.

- 1.46 The impact on the labour market of raising employment conditions will be significant in those countries which at present have low levels of wages and conditions. There is a very important issue for national economic policy. The industry, which directly employs some 9 million people in the EC (in contractors and design firms), has traditionally absorbed large numbers of the poorly qualified school leavers and unskilled immigrant labour, and has sometimes been seen as a tool for short-term employment generation through public works spending. This conflicts with the policy of developing a stable and well-qualified work-force to improve quality and productivity. Moreover, technology will reduce the site labour requirements - also a way of reducing errors of workmanship - and we believe this will tend to shift employment from site to factory as well as increasing overall productivity. At a national level therefore there would be a problem of absorption of unskilled site labour unless construction output grows to maintain existing total employment levels. The employment levels in the EC industry are much higher than in the USA or in Japan, which have similar output, which indicates that productivity will have to be increased in Europe to maintain competitiveness. The discussion of growth scenarios (para 1.11) shows that if the objectives set out in this report are met, total employment will increase, generating up to 5 million new jobs in construction by the year 2000.

Environment [Chapter 9]

- 1.47 Construction is the industry of the built environment. Environment is one of the handful of major global issues for the next few decades. The construction sector has enormous challenges and market opportunities, as well as new constraints and costs. The industry needs to develop new services and products to take advantage of the opportunities, and promote its image for positive contributions to the environment. The construction sector should be concerned with applying the principles of sustainable development and seeking quality in design. The built environment is to a large extent synonymous with our cultural heritage. It is difficult to exaggerate the importance of this heritage, and conservation is a major task for the construction industry. It is also worth emphasising the importance of local building practice in creating the diversity which is such an attractive feature of Europe's towns and villages. Small firms of designers and craftsmen continue to have a valuable role in maintaining this cultural dimension.
- 1.48 About half of Europe's energy consumption is related to buildings. Energy conservation should remain a priority issue. The architects and engineers have a role to promote the design of energy-efficient buildings, including the use of passive thermal principles. The existing stock of buildings has potential for refurbishment to conserve energy. Construction materials production also needs investment in energy-efficient processes and there is likely to be substitution of materials. These changes will be accelerated if energy prices rise through a carbon tax or other macro-economic energy conservation measures.
- 1.49 In some parts of the EC there is growing concern over the availability of natural resources for construction, and the consequences of meeting future demand. This focuses attention on effective use of materials, and recycling. Waste management and the recycling of construction materials need more research and development. There will need to be changes in site practice, and in design principles in order to minimise the use of materials which are damaging or are not recyclable, and to design for ultimate demolition.
- 1.50 The internal environment of buildings is an emerging area of concern, which requires more research and the development of standards related to air quality, microbiology of buildings, allergenic and toxic effects of materials, and emissions from land and buildings.

- 1.51 Energy- and eco-labelling of buildings and products will become widespread and create a market mechanism favouring these changes, and should be accelerated. The logical next step would be a system of log-books for all buildings, recording original construction, materials and performance; all subsequent changes; and maintenance carried out, possibly with periodic independent inspection and tests to be recorded for insurance purposes. This would promote good initial quality and low maintenance, and monitor any possible environmental or health and safety threats.
- 1.52 The analysis of the environmental impact of specific projects is improving, through development of techniques and enforcement of impact assessment requirements. There is a need for further development of techniques, ensuring the proper consideration of environmental impacts in construction permission approvals.

The Role of Government

- 1.53 The State has a role as regulator and as major client for the construction industry. Both roles should be used to improve quality and value for money in construction and the quality of the built environment. The State is also often a major supplier of in-house services, and funds research, training and support services. Throughout Europe, as a result of privatisation, government's direct role as a customer is declining in volume but not in importance.
- 1.54 It is a conclusion of this study, overwhelmingly supported by the majority of people consulted in the sector, that the sector must take action itself to face the challenges of the future, with a minimum of new intervention or new legislation; but that government has an essential role in providing a stable and certain regulatory, planning and market environment; providing support services in training, research, information; and as a responsible major consumer.

Regulation

- 1.55 An industry which provides 10 to 15% or more of GDP, and in which commercial relationships between private clients and contractors affect the every-day lives of all citizens, must receive a large share of government attention. It could well be argued that governments in Europe pay too little attention to the well-being of the construction industry, compared to the attention they give to other sectors. This report has concluded that more support is needed for training and for research and innovation, which because of the structure of the industry and its markets are not adequately provided by firms acting alone. On the other hand, intervention usually distorts markets, creates opportunities for corruption, and creates bureaucratic inefficiencies and additional costs, which must be avoided. Government has an essential role in the regulation of the industry and its markets which should in general be maintained, but streamlined and simplified where possible.
- 1.56 Regulation is required to protect the interests of consumers and future generations. This means efficient land use planning and construction control, and a clear regime of liability legislation, with an efficient system of claims litigation. It also means ensuring vigorous and well-trained professions of town planners, architects, engineers and building controllers. Since most clients select their contractors and consultants without previous experience of working with them, regulation is needed of the training, qualifications, capacity and record of those practising in the industry.
- 1.57 The nature of construction (see Chapter 2) makes the free market mechanism inefficient. This is why all countries have building regulations and planning

controls to ensure essential minimum levels of building quality and to control land speculation. There are still characteristics, however, which tend to bias demand towards low quality and unrealistic low prices. In particular the time lag between contract and completion and the fact that most projects are to some extent unique, means that clients have incomplete knowledge of the product they are purchasing. This can lead to myopic choice, selection on price rather than quality, and underbidding with a reliance on later claims and litigation. Combined with easy entry for new firms, and volatile markets so that established firms have to defend their market share aggressively in recessions, this leads to cut-throat competition, which depresses quality and profitability.

- 1.58 Cut-throat competition also, regrettably, leads to an element of 'murky practices' to evade the disciplines of the market. These practices include bribery, corruption, and collusion in bidding, and also organised theft of materials and plant which government must continuously fight against.
- 1.59 Whereas governments can regulate to control prices and the quality of service in monopolistic industries where competition is inadequate, they are not able to regulate to control *excessive* competition. They can, however, ensure that systems exist to make sure that those who practice in the industry have proper qualifications and their capabilities are registered, to prevent excessive competition from debasing quality.

Economic Management

- 1.60 It is generally considered that government management of the economy includes maintaining stable and adequate levels of employment, reducing the volatility of business cycles, and optimising the rate of growth and hence the level of savings and investment. In a market economy, it is not the business of government to plan and control the level of activity of individual market sectors. Construction, however, is intimately linked to the level of investment and growth of the economy. Construction output is generally about half the total gross fixed capital formation: increased investment requires buildings and infrastructure, and conversely increased investment in infrastructure increases the competitiveness of industrial and commercial activities, and generates new opportunities for profitable investment. It is therefore right for government to be concerned about the level of construction activity, over and above the concern for housing and social infrastructure.
- 1.61 It is frequently argued by the industry that government should act to even out the fluctuations in construction activity by managing the programme of public expenditure on construction. Stability is important because the volatility of local construction markets has a damaging effect on investment in training and technology. In practice, however, government intervention for short-term sector demand management will almost certainly be counter-productive because the timing is likely to be wrong, and will be economically inefficient because the wrong projects are promoted, and hence depress growth. Investment should respond to demand and go where the return or the benefit/cost ratio is highest.
- 1.62 There is a more specific argument against using construction spending for counter-cyclical purposes. To do so would entail in practice varying the investment in major infrastructure projects, over which government has most direct control. This would be damaging to the civil engineering sector, and would do nothing to help the building sector.
- 1.63 It is strongly in the interests of the sector to keep public construction spending steady, and avoid stop-go cycles. Cutting infrastructure and building programmes to balance budgets when social security spending is high in the recession, will create more unemployment. The public purse benefits in the long run by letting contracts when prices are weak, not during the boom.

- 1.64 What is needed is for governments and public authorities to set out long-term infrastructure investment plans and public building programmes based on a realistic target level of total construction output in relation to GDP, and the share of public infrastructure spending within that, keeping regional development objectives in mind, and then to stick to the plans. This would enable private developers and industrial investors to plan accordingly and reduce volatility.
- 1.65 In most countries governments also intervene in housing and building markets, by controlling mortgage interest rates, providing interest rate subsidies, tax allowances on housing costs or interest payments, grants to housing associations, rent controls, etc. Government also directly affects building levels by its policy on land use and the release of land for development, and some have development taxes or other tools. In all of these interventions the government should try to keep construction activity at a steady, achievable long-term level.
- 1.66 The economic environment in late 1993 and early 1994 is one of recession and growing unemployment throughout Europe, so that growth, competitiveness and employment are the most important political issues. Construction output has fallen to 10% of GDP (see Chapter 4). The seed-corn financing of structural funds and other EC instruments can help governments to lift national construction output back nearer 1989 levels to give an average share of at least 12% of GDP, not just as a short-term kick-start measure, but to maintain construction at these steady levels or gradually increasing in the long-term, to create steady growth and employment.

Government as Customer

- 1.67 Public bodies also have a special duty to act as ideal clients, by using professional procurement techniques in which:
- quality is as important as price;
 - life-cycle costing is applied to safeguard the future;
 - professional designers and consultants are properly used and selected;
 - training is ensured;
 - innovation is encouraged;
 - only properly qualified and registered firms and individuals are employed; and
 - fair prices and contract terms are applied.
- 1.68 Although Government has a duty to safeguard the use of taxpayers' money, it should not use its purchasing power to obtain lower prices than a private purchaser would obtain.

Policy Objectives for the Sector [Chapter 10]

- 1.69 Any policy objectives for the construction sector should be tested against three inter-linked fundamental objectives:
- (a) to permit the construction sector to contribute better to the *economic and social objectives of the European Community and the Member States*: improving

the built environment and the living conditions of our towns and countryside; meeting the need for better housing; preventing environmental damage; and the maximisation of economic growth and industrial competitiveness, and in the buildings and infrastructure required by industry and commerce;

- (b) to improve the *quality* of construction in all its aspects: firstly by raising the level of quality - better design and suitability, better workmanship and higher performance specifications, better quality products; and secondly by reducing defects and backing this up by better consumer protection and effective guarantees;
- (c) to improve *value for money* in construction, and raise the competitiveness of the industry: in this, quality is a major part, as well as better time and cost performance, improved labour productivity, and the continuous introduction of improved design and technology of products, equipment and processes.

- 1.70 In simple terms this requires that the ultimate goal is to fit construction output to consumer demands, and make the sector more consumer-oriented. Underlying the action plan is a fundamental thesis (set out in Chapter 2), that the characteristics of the construction process and its output are such that competitive market forces do not of themselves create an efficient industry. This market failure is not generally the problem with construction product manufacture, for which very little specific action is required, other than ensuring increased competition through the removal of barriers to trade.
- 1.71 The achievement of these objectives requires sector-wide cooperation and long-term strategies at enterprise, local authority, national and European levels. In practice the sector in contrast is characterised by short-term attitudes, conflict between parties, and great differences in process between countries and regions. There has up to now been no 'European construction industry'.
- 1.72 For this cooperation and strategic planning to occur there must be less uncertainty and variability, and more exchange of information in the sector, about markets, practice and procedures, regulations and standards, and the legal, institutional and policy environment. The need for better exchange of information has been a common theme throughout our discussions with the sector. Much of the information and statistics about the sector are misleading or inconsistent: better information is a prerequisite of good strategies.

The Elements of Strategy

- 1.74 The boxes in Appendix A set out a summary of strategic objectives, for each of 12 themes, which are related to the key issues reviewed in this chapter. The benefits and costs of achieving each strategic objective, and the problems and constraints which are foreseen in achieving the objectives, are identified. For each theme a checklist of the key actions or areas of action is then set out. These actions are discussed in more detail in the body of the report.
- 1.75 The strategic objectives which the action programme addresses are the following:
 - (i) *Market growth*: Halt the historic long-term decline in the share of construction in GDP and then increase it in order to provide the efficient infrastructure needed by EC industry and the housing and social infrastructure needed by its people. In the short-term, return from the low level of 10% of GDP to which it had fallen in 1992 back to at least the 12% of GDP it attained in 1989. In the longer term, aim to achieve

the levels of 14% or more which have been typical of EFTA countries in recent years (and were probably typical of EC countries during the 1970s).

- (ii) *Market stability*: Reduce the short-term fluctuations in construction markets which create employment problems and are disincentives to investment, training, research and product development.
- (iii) *Value for money in construction*: Improve the relationship between quality and cost, and improve the reliability of the service provided to customers in terms of achievement of quality, cost and time targets, and worry-free construction.
- (iv) *Competitive construction products*: Encourage trade and competition, to promote product development and increased competitiveness in construction products, especially by continued removal of technical and administrative trade barriers.
- (v) (a) *Quality levels*: Gradually and continuously raise the typical levels of specification of buildings and infrastructure products.
 (b) *Non-quality*: Reduce the levels of defects and the cost of non-quality.
- (vi) *People*: Improve working conditions and job satisfaction, to raise the level of skills and competence and adapt to changing technology.
- (vii) *Technology*: Facilitate the rapid adoption of new technology and products, in-site construction, design and construction product manufacture. Improve dissemination of best practice; improve coordination and effectiveness of the EC's R&D system; and increase R&D spending from less than 1% to 2 or 3% of industry turnover.
- (viii) *International trade*: Become the style leader in construction in world-wide markets, building on the strength, reputation and diversity of Europe's designers, as a flag-bearer for the industry. This will build on Europe's comparative advantage: not cheap labour, not low cost finance, not strong government intervention, not cheap materials and energy - but great designers, engineers, managers and high quality product manufacturers.
- (ix) *Environment*: Be seen as the protector, developer and champion of sustainable development; and apply new technologies to capture new markets.
- (x) *The construction process*: Develop a legal and institutional framework which permits customers to choose from a range of procurement processes, to suit their own circumstances and capabilities, within the context of a system of guarantees, insurance and legal liabilities which offers the customers the level of protection they require.
- (xi) (a) *Structure of industry - contractors and consultants*: Avoid intervention in the industrial structure, but the industry should develop a structure which combines the flexibility of many small specialist and local firms, with a number of large world-beating EC firms.
 (b) *Very small firms*: Raise the performance of very small firms and self-employed persons, and ensure they have the qualifications for the work they undertake. The overall share of small firms (less than 20 employees)

will probably not change, and may increase, but the result of these actions should be to strengthen and stabilise the segment comprising very small firms by reducing the number of self-employed persons and micro-firms (currently over 1.7 million enterprises accounting for half of employment) and increase their average size (say from the present average of 2 members per firm to 3 or 4).

- (xii) *Information*: Provide a better flow of accurate and timely information, at national and EC levels, on which technical and strategic decisions can be taken, and to help create better informed clients (economic and market data, product data, defects data, research information).

Priorities

- 1.75 Given the objective of achieving a high growth scenario and increasing competitiveness to meet the vision set out in para 1.1, there are certain short-term priorities. In the longer term, the priorities may change, depending on the success in achieving these various objectives and the growth scenario that evolves.
- 1.76 In the short-term, we are beginning from a position of recession, low construction output, with variable quality and value-for-money. The first priority must now be to *revive construction demand*, urgently. At the same time those actions which will take a long time to bear fruit, but which will be essential to the health of the industry when high output and employment are achieved must be begun now. These include:
- *People*: action on *training*, beginning with a detailed review of existing systems and needs, aimed at improving facilities, targeting the small firms, adapting to new technology, and developing systems of registration for individuals. Action on *recruitment*, including working conditions, health and safety, and improving the industry image.
 - *Innovation*: improving dissemination of information, coordination of research efforts, and incentives to increased research.
 - *Quality*: improved procurement, development of systems of *guarantees and insurance*, development of the systems of *registration and qualification*, and development of quality consciousness, with appropriate QA systems for firms in the sector and leading on to total quality management.
- 1.77 If a high growth path is achieved, the actions aimed at improving value for money, quality, human resources, technology and the performance of very small firms will continue to have a high priority. There will be pressure on recruitment and skills, so it will be essential to increase productivity through training and innovation and promote recruitment through better employment conditions. Actions to respond to environmental pressures, changing construction processes, industry structure and provision of information will take their course but may not need much government action or pressure. Conversely, action to increase trade, increase demand and ensure stable markets will not be needed if demand is already growing.
- 1.78 If, however, demand fails to grow so rapidly, then the measures to increase demand, ensure stability and promote exports will remain a high priority. Regrettably, quality, improvements in recruitment and training will not be seen as high priorities by the industry, but measures to improve innovation, value-for-money in construction and products, to develop environmental markets, to provide more flexible construction processes, and to improve small firm performance are all measures which will help to stimulate demand.

1.79 These short-term and long-term priorities are illustrated in table 1.1.

TABLE 1.1 - CHANGING PRIORITIES FOR ACTION

	Short-term Priority	Long-term Scenario		
		High Growth	Historic Growth	Low Growth
i Market Growth	•••	—	•	•••
ii Market Stability	—	—	••	•••
iii Value for Money	••	••	•••	••
iv Competitive Products	•	••	•••	••
v (a) Quality Levels	•	••	•••	•
v (b) Non-quality	•	••	••	•
vi People	•••	•••	••	•
vii Technology	•••	•••	••	••
viii International Trade	—	—	••	•••
ix Environment	••	•	••	••
x Process	••	•	•••	••
xi (a) Structure	•	•	••	••
xi (b) Very Small Firms	••	••	••	••
xii Information	•	•	••	••

••• High priority
 •• Continuing action needed
 • Likely to be solved by the market
 — Not necessary

Chapter 2 - STRUCTURE OF THE SECTOR

- 2.1 This chapter describes the general nature of construction and the construction process. The following chapter describes the ways it is changing. This has general implications for the form of industry policy.

The Actors in the Sector

- 2.2 The scope of this study includes a wide range of industry subsectors and types of enterprises, which will often have very different interests. Moreover, in considering public policy, it is the consumers of today and of future generations whose interests should be paramount.
- 2.3 At the simplest level the construction sector has two main constituents: the constructors of works (construction firms, professionals, craftsmen and employees of construction firms) and the suppliers and manufacturers of construction materials. These groups are not distinct, particularly because of the increasing role of specialist contractors who may both manufacture and install subassemblies (such as structural steelwork, curtain walling, air conditioning).
- 2.4 Value added by construction (NACE 500 activities) typically produces 6 to 8% of the gross domestic product of EC countries (Eurostat, *National Accounts ESA*, detailed tables by branch). The gross output of the construction sector (including purchased services, construction materials) is typically about twice that - some 10 to 15% of national consumption. The EC average, however, has recently fallen to around 10%.
- 2.5 The structure of the sector varies from country to country, and in no country is there a clear division of firms into activity subsectors, but it is useful to consider the sector in terms of the following interest groups:
- (a) clients and investors
 - (b) *'constructors'*:
 - general contractors (building and civil engineering)
 - general building contractors
 - civil engineering (*travaux publics*) contractors
 - engineering construction contractors
 - specialist housebuilders
 - craftsmen and very small construction firms
 - specialist contractors and subcontractors and their immediate suppliers
 - [most larger contractors are active in several or all of these activities]
 - (c) *manufacturers*:
 - prefabrications and subassemblies
 - manufactured components
 - construction materials from extractive and process industries
 - (d) *services*:
 - design and management professions
 - research, control and standards bodies
 - (e) *the labour force*.

- 2.6 The current divisions between parties are a cause of many problems which could be mitigated by more interaction, information exchange and common understanding between the parties. The list is a recognition of different supply and demand factors affecting different market subsectors, and serves to emphasise the fact that many of the problems and issues described in this report, at a general level, are unlikely to apply to all interest groups. There are also clear differences in the interests of large and small firms. This is discussed in the following sections.

The Fragmented Nature of the Construction Sector

- 2.7 The construction sector is very fragmented. There are a number of factors that cause this, resulting from the diversity of technology, customers, projects and market sectors.

Distinct Technologies

- 2.8 An important factor in shaping construction industries is that modern buildings and other constructed facilities make use of a multitude of specialised technologies which provide individual elements of these facilities. Many of these specialised technologies require the coordinated work of a long series of firms to transform basic raw materials into the elements of buildings and other constructed facilities. This is especially true of the factory-produced components which form an increasingly important part of modern buildings and large industrial plants. The chain-linked nature of much modern construction technology is changing the way in which the industry needs to be managed.
- 2.9 A peculiar characteristic of construction, which increases the number of separate technologies with which it must deal, is that old technologies are not generally replaced by new ones. The need to repair, maintain and alter the existing built environment means that the industry needs to retain a competence in most of the technologies that were ever used in construction, no matter how long ago. Consequently, the construction industry's technologies range from traditional, labour-intensive, site-based crafts to sophisticated industrialised technologies in, for example, the control systems in intelligent buildings.
- 2.10 Construction firms tend to specialise in one technology or in a small group of related technologies. Even general contractors, to a large extent, have become specialists in managing the work of specialist contractors who undertake the direct construction work.
- 2.11 Construction projects use many separate technologies and because the industry relies on one-off designs, each project brings many specialised firms together to form a unique project team. Therefore, in addition to individual specialised technologies, the industry uses technologies that help to create an overall design and management framework for individual projects.
- 2.12 Running through the different kinds of individual developments are strong trends that are changing the character of construction. Computer-aided design (CAD) systems are gradually integrating traditionally fragmented processes. Prefabrication is moving work away from construction sites into factories. At present this is mainly 'light prefabrication' of subcomponents such as building frame members and modules like toilet pods, but discredited large-scale building systems may again become viable using CAD and flexible manufacturing technology. Electronic control and communication systems are providing a basis for intelligent buildings and infrastructures that are linking the industry's products with its processes in ways that were previously impossible. Environmental demands are calling into question many of the industry's

established methods of manufacturing and constructing its products. For example, there are increasing demands that materials and components should be capable of being recycled.

Types of Consumers

2.13 The sector is also fragmented because of the particular requirements of different types of customers.

- Most customers are small firms or individuals who have a problem that can be solved by simple construction work, e.g. repairs, maintenance or alterations. They want a guaranteed service provided quickly, with the minimum of administration, at a fixed price, established before they are committed to the work.
- A second category of customer needs more substantial construction work but is not an expert in construction matters. They need professional advice that they can trust and they want to be involved in determining the design, the price and the schedule, but beyond that they want the work carried out quickly and reliably for a fair price, established before they are committed to the work. They want a simple, clear contract and a guarantee that the finished work will perform satisfactorily.
- A third category of customer needs construction work and is experienced in employing an appropriate mix of consultants and contractors to provide what they want. They tend to determine contract conditions to suit their own ways of working and to buy specific services to suit the needs of individual projects. They often deliberately build long-term relationships with consultants or contractors. Included in this category are many clients in the public sector and utilities who are required by the Public Procurement Directives to organise competition among suppliers.

2.14 There are yet further types of customers. In general their demands have increased over time for such things as early completion, reliable quality, value for money, control over internal environments, standards of comfort, etc. In addition to the demands of individual customers, society at large has legitimate requirements of the construction industry which also have steadily become more demanding over time.

The Variety of Projects

2.15 In addition to dealing with a great variety of technologies and different customers the industry has to deal with demand that is made up of individual projects that are geographically dispersed and vary in size. Most projects are very small, but significant numbers are medium-sized and a significant proportion of the total value of construction demand is provided by a relatively small number of large projects. As a result of its geographical spread and size distribution, construction demand is divided into separate local, regional, national and international markets, each of which tends to be served by different firms.

End-product Sectors

2.16 Demand is differentiated also on the basis of the function of the end-product. Thus housing, general building, repairs and maintenance, civil engineering and heavy engineering all provide separate markets served, to a large extent, by distinct sets of firms.

2.17 Between these end-product sectors there are wide differences in interests and performance. For example:

- The engineering construction sector (i.e. construction for process plant), which is frequently omitted from consideration, includes many world-class firms, operates world-wide, and there is a strong presence of US firms in Europe. It operates with technology at the forefront of practice, and it has in past decades undergone radical restructuring.
- Specialist housebuilders have most to gain or lose by standardisation, modularisation and new products, and are most affected by social and demographic changes.
- General contractors are most concerned by changes in contractual relationships, procurement processes and professional roles.
- Civil engineering contractors are most affected by the changing role of public spending, privatisation of utilities, and changing infrastructure needs.

Separate Markets

- 2.18 Each of these factors: technology, customer demands, geography, size and the function of constructed facilities tends to create separate markets for construction firms. An important fact of life for most construction industries is that the level of demand in these separate markets fluctuates unpredictably, even when total national construction output is relatively steady.
- 2.19 The combined effect of these characteristics is a complex pattern of fragmented, partially overlapping construction markets, each serviced, in the main, by small and medium-sized firms. The firms in each separate market must compete fiercely, so for most construction firms survival depends on minimising fixed capital assets and being extremely flexible. Within such an industry, firms often engage in damaging, cut-throat competition with each other for work and take a very short-term approach to managing their businesses. They concentrate on cost cutting, making claims against their customers for more money and minimising their liability for such things as the quality or performance of their products. Innovation is therefore most likely to come from customers demanding better service, not from initiatives by the industry itself.

Construction is Special

- 2.20 The special characteristics of the construction industry have frequently been quoted. They mean that in many respects the construction sector will require different policy and legislative treatment from other sectors of the economy. In particular, market forces do not always operate in the public interest, there are many 'external' effects, and long-term benefits can be pre-empted by short-term decision making. For these reasons the sector needs regulation and public support, and, although inappropriate regulation can be damaging and there are areas in which deregulation is needed, an over-enthusiastic policy of deregulated and excessive price competition is not in the best interests of the industry or the public.
- 2.21 All countries do indeed regulate construction and government intervenes directly in a variety of ways. These include land use plans and planning controls (which affect land prices), building regulations and standards, planning permits, building inspection, registration of contractors and professions, regulated fee rates, etc. Governments also directly control a large share of construction work, and provide research, training and information services. This report argues against additional regulation except in a few specific cases (e.g. registration and qualification in countries where it does not exist), but it also argues against reducing consumer protection.

2.22 The important economic differences which support these conclusions include the following:

- *Input to other economic sectors:* Construction is always carried out in order to facilitate other economic or social activities, and all economic activities require investment in construction of buildings or infrastructure as their first and fundamental input. The competitiveness of all economic activities, and the growth performance of the economies, depend critically on the cost effectiveness, efficiency and appropriate technology of construction.
- *Investment and economic growth:* Construction is investment for the future of society. Gross fixed capital formation in the EC is typically around 18% of GDP, of which around 60% is output of the construction industry, and a further proportion would be fitting out, in-house construction activities, design services and other construction-related activities. Consequently construction is essential to macro-economic growth.
- *Linkages and multiplier effects:* As well as being an input to all other sectors, construction has an extraordinary range of direct inputs from other sectors providing construction products, materials, machinery, professional and financial services. In turn, these purchase capital goods, materials and services from all other economic sectors. Downstream also, construction generates demand for furnishing, household and office equipment, maintenance and decorating, insurance and legal services, heat, power and water, and travel services. Moreover, investment in construction generates further demand for construction - new building generates infrastructure needs and new infrastructure creates building demand. The employment effects are discussed at the end of the chapter. Overall, it is estimated that one direct job in construction creates around three jobs in all sectors combined, which represents about 20% of all civilian employment in European economies (26 million out of 130 million).
- *Consumer risk:* Constructed works are used by the general public who (except for the actual client) have no part in the original design, procurement and construction, and whose voice and political influence is weak. Consequently, the general public relies on strong and expert public sector clients supported by competent and impartial designers and consultants, and on careful regulation and control of private sector construction by public authorities or third-party controllers (insurers, QA bodies, professional colleges, etc.). Otherwise, the public could be at physical risk from defective buildings; and the future living environment could be seriously damaged by short-term decision making, by planners, developers and the commercial interests of a few individuals and enterprises.
- *Markets with information deficiency:* Even expert clients are not able perfectly to relate initial bid prices to the final quality and cost of projects. Most one-off customers have very little information about materials and processes and are unable to judge final quality, or even to know whether the bid price has any relation to the final cost. For this reason normal competition mechanisms break down, often leading to unrestrained 'cut-throat' competition which is severely damaging to quality and good performance. Price-only competition is never sensible for construction projects where neither the end-product nor the process can be perfectly defined.
- *Prototype projects:* Most construction projects are prototypes, so:
 - there is a large design input and it is difficult to discriminate between 'routine design' and research and development;

- there are few opportunities to achieve economies of scale in the final assembly process;
- management is difficult, requiring high skills and large resources and can be a significant cause of cost inefficiencies.
- *Site work:* Construction is, in its final assembly stage, carried out on site, out of doors, in public. Hence:
 - working conditions which are sometimes unpleasant, dirty and dangerous make recruitment of capable people difficult: the site labour force tends to be drawn from the lower strata of educational achievement;
 - labour must be mobile and hence security of employment is very poor;
 - weather delays make productivity poor;
 - problems of waste, dust, noise, traffic disturbance create costs for other activities and for the public;
 - because most construction activity is visible and the labour mobile, there are limited opportunities for firms to retain ownership of innovations, and so to profit from them. This creates a strong disincentive to spend on research and development except for specific project problems.
- *Long life:* Constructed works have a very long life, from several years for temporary accommodation modules to many centuries for monuments, infrastructure and landscaping work. Consequently,
 - life cycle costs are not often properly accounted for in the investment decisions;
 - investment can usually be delayed, so that construction is the most volatile sector in the economic cycle;
 - a large proportion of the capital stock is old and unsuited to its purpose.
- *Time lags:* There is a long period from the investment decision to completion of the works. Consequently, construction has its own in-built tendency to unstable fluctuations of demand and supply. Governments and international agencies maintain buffer stocks of agricultural and mining commodities which suffer from similar fluctuations as a result of long crop or exploitation cycles, but there are no deliberate buffer stocks of buildings!

2.23

These factors indicate that unrestrained competitive markets are not economically efficient, and that government has a very important and inescapable role in the regulation and support of the industry in order to ensure:

- appropriate quality and technical standards;
- consumer protection in the widest sense;
- optimal investment in training and research for the cost effectiveness and competitiveness of the construction industry;
- the contribution of infrastructure to the competitiveness of the rest of the economy;
- the adequate availability of land for development at reasonable prices;
- optimal investment levels for the economy as a whole;
- stable markets and employment.

- 2.24 They also indicate that construction needs specific policies which may be quite different from the policy and legislation for manufacturing industry or for services. On the other hand it is quite clear that legislation which is not responsive to the extremely wide range of different interests, circumstances and environments of clients, projects and firms in different business sectors and countries, could be very damaging.

Harmonisation Issues

- 2.25 Trade in many construction products and in construction projects is by its very nature limited except across short distances, because of the high transport cost in relation to value and the degree of on-site work. Consequently there has in the past been less progress by the industry in the harmonisation of standards, procedures and legal regimes, for products or for construction processes, than for products where the technical barriers were the main cause of substantial unrealised gains from trade.
- 2.26 In the construction sector, harmonisation is desirable mainly because familiar regimes make the free movement of professionals and craftsmen easier, and enable designers in one Member State to work on projects in another State, with familiar technical standards and codes. This facilitates the dissemination of technology.
- 2.27 The fact that it is the work-force which moves more readily than the product means that the first priority should be the measures on mutual recognition of qualifications, and registration. This was borne out by interviewees, who were often concerned about lack of progress on mutual recognition and the poor implementation and lost momentum on the 1st and 2nd Directives on Mutual Recognition of Diplomas, yet on the other hand see progress on construction products standards as a long and difficult process, which if taken too quickly would threaten to add to administrative costs, particularly for small firms.
- 2.28 Nevertheless, there are many construction products in which substantial trade already takes place, particularly products with relatively high value added, such as air conditioning equipment, top-of-the-range bathroom fittings, quality doors and windows, or curtain-walling systems. It is in these sectors of the industry that the enterprises will press most strongly for the development of *de facto* industry standards, and the removal of technical barriers.
- 2.29 There are increasing gains to be made from trade in the simpler construction products, such as bricks, glass, tiles, etc., which are increasingly capital intensive in manufacture and where unit plant capacity is often constrained by availability of raw materials. For these products, economies of scale are important, there is much local specialisation, and the ebb and flow of trade even over short distances is important in response to market fluctuations. Common standards (especially environmental standards and packaging standards) are becoming increasingly necessary for these products.
- 2.30 Of even more importance, technical progress will lead to more prefabrication of subsystems, structural components and sometimes whole buildings. Standard industrial units, superstores, motels, particularly for Europe-wide chains and franchises, are eminently suitable for a degree of prefabrication for erection anywhere, with very significant cost savings. Moreover, this sort of technical progress requires the benefits of economies of scale which are only likely to come from a European market or a world market. There will thus be increasing desire for some degree of harmonisation of building regulations and controls.

- 2.31 There is very strong feeling among the bodies interviewed that they do not want to have the construction *process* harmonised by legislation, but do want to have good systems of information about procedures, regulations and standards in each country or region. They want barriers to be vigorously removed and the minimum amount of essential regulation evenly enforced. Free movement of people and information will in time lead naturally to the best aspects of each system being adopted at the initiative of individual governments and industries, rather than the lowest common aspects being imposed. Flexibility in forms of contract and procedures is widely desired: nevertheless, many firms would like to see the essential requirements for contracts (but not the details of them) established at an EC level, to reduce some of the uncertainties which can be a disincentive to working in unfamiliar legal regimes, particularly for small and medium-sized firms.
- 2.32 On the other hand, increasingly open markets, to investors, property developers, contractors and designers, may require some harmonisation, and tighter control, of the essential planning and approval stage of the construction. This would make it easier for developers and designers to operate across borders, and also protect the public interest from any unwitting or deliberate deviations from specific local planning and construction regulations.

Construction is dominated by SMEs

- 2.33 In all countries of the EC (and it is probably true of all free market economies) construction activities are dominated by a large number of SMEs, with a very long tail of very small businesses. This is not the case, in general, in the construction materials sector, except in those products where installation is often carried out by manufacturers.
- 2.34 The number of firms of contractors and employees in construction is shown in Table 2.1. The data also include some self-employed persons but not all, depending upon whether these are considered to be one-person enterprises or casual employment. This shows that 97% of enterprise units have less than 20 employees, and 93% less than 10. Of these, a few countries where data are available show the number of enterprises with no employees to be between a third and a half of all micro-firms with less than 10 employees.

TABLE 2.1 - EMPLOYMENT AND NUMBER OF CONSTRUCTION ENTERPRISES (NACE 500), EC 12 (1988)

Size of Firm (Employees)	Number of Firms	% of Firms	Number of Employees	% of Employees	% of Total Turnover
0-9	1 700 797	92.8	3 512 969	43.3	36.1
10-19	76 618	4.2	1 025 263	12.7	12.4
20-99	48 695	2.7	1 820 354	22.5	24.7
100-199	3 543	0.2	492 320	6.1	7.2
200-499	1 585	0.1	483 257	6.0	7.5
500+	585	0.03	761 345	9.4	12.1
All firms	1 831 822	100.0	8 095 509	100.0	100.0

Source: Commission/Eurostat, Enterprises in Europe, Second report, 1992.

2.35 These data do not present a full picture of the employment patterns, because it is difficult to record the true number of self-employed persons. FIEC data show the average level of self-employment in the EC as 24% of total employment in 1991. This had grown from 21% in 1983. The UK has higher levels: 42% in 1991 up from 27% in 1983. (Some researchers say the true proportion is now 60% in the UK when all forms of non-permanent employment are taken into account.) Many workers in employment at any one time may in fact be temporarily employed for a short period or for the duration of a project, and then move on or become self-employed for a time, so that their employment pattern has the characteristics of self-employment. Conversely many people registered as self-employed may have long-term employment relationships with a firm, but are registered as self-employed to take advantage of more favourable tax and social security terms. It is probable also that the number of self-employed varies with the business cycle. Workers made redundant in the recession phase may change to self-employment or set up a small firm to carry out repair and maintenance or short-term contract work, and such enterprises may be wound up when employment conditions are better.

2.36 The statistics on the number of SMEs among contractors disguises the fact that there are a number of distinct types of small firms:

- small general contractors, in either building or civil engineering, working in a local market or a specific market sector. These are really medium-sized firms in the context of construction. They may have several or many contracts, and use a network of subcontractors and self-employed craftsmen. Such firms have a certain stability, but may be family firms which have a life limited by the active life of their managers;
- specialist contractors, mainly in the finishing trades but also in specialist structural work, such as roofers, piling contractors, glazing firms, painting contractors, who may operate over a wide geographical market. These if successful will grow and may become quite large, or be taken over by larger groups (and may or may not then continue to trade as independent companies);
- self-employed craftsmen who may be properly registered as small firms, and may work with family members or casual help;
- opportunistic start-ups by individuals, or partnerships, who are made redundant or seek more independence than they have when working for a larger firm, or by craftsmen expanding their range of activities. In some countries these firms are strongly favoured by advantageous social security and other wage related costs for independent workers. Some of these may only last a short period, because they are unsuccessful, or because the owners voluntarily cease trading to go back into employment;
- one-off companies set up for tax or liability reasons by larger firms to develop a single project. There may be a very large number of these in existence which cease to have any life after the end of a project. These are not in any real sense SMEs, yet may appear in statistics on the number of firms.

2.37 The structure of the contractors' sector is similar in certain aspects in most countries. As a general rule, markets are strictly national, regional or local, with no truly European or multinational firms, although some of the major firms are now developing activities in several EC countries, and many have significant export activity. There is a small number (usually 5 to 10) of large firms in each country, a relatively less significant band of medium-sized firms, and then the mass of small firms which are either specialists or work in extremely local

- (travel-to-work) markets. Although each country has a number of well-known names, there are no dominant firms - the very largest have less than 5% of their home markets.
- 2.38 Some of the large firms are expanding by acquisition of medium-sized specialists or by taking interests in firms in other EC countries. Some medium-sized firms disappear either as a result of acquisition by larger firms (although the large firms are often a constellation of medium-sized firms which usually act independently) or by bankruptcy or break-up, in which case they may spawn a larger number of small specialist firms set up by individuals. The number of small firms and self-employed persons increased in the late 1980s, but fluctuates with the cycles, and has a high turn-over of entrants and wind-ups.
- 2.39 There are no adequate data over a period of time to prove these trends, but they are generally believed to be true. In practice, however, any changes in the structure of the sector are likely to be small. We do not expect any major shift in the relative shares of large, medium and small firms, which is very much determined by the pattern of demand in terms of contract size and location. There is, however, a dynamic process by which very small firms are formed; some grow to be medium-sized, and some medium-sized firms either break up into smaller ones or are assimilated into large firms. These experiences of individual firms do not necessarily in aggregate indicate a change in industry structure.
- 2.40 The nature of the industry described previously (cyclicality, local markets, management difficulty, recruitment problems, cut-throat competition) creates difficulties for large and medium-sized firms, and so favours the creation of small firms, yet creates obstacles to their efficiency and long-term growth. In most countries, entry is easy because there are low technology and training levels in most trades, poor control of qualifications, low capital requirements, and a well-developed equipment rental industry. The German system of registration of artisan firms is an exception. Tax systems in most countries favour self-employed persons and very small businesses, and evasion of tax and bureaucratic control is often easy. It therefore seems unnecessary to positively aid and favour the creation of small firms, but it is necessary to help existing small firms to function better. This is discussed in detail in the chapters on training, technology and quality.
- 2.41 It is true, however, that single market legislation, by removing barriers which only trouble a very few larger firms working across borders, benefits mainly the large firms. This shifts the balance of favour away from SMEs. It is also leading to more cross-border acquisitions. This should not be a matter of concern *per se* because it is simply the result of removing previously existing market distortions which prevented an optimal allocation of resources, protected the more inefficient large firms and prevented the achievement of economies of scale. The cross-fertilisation of ideas, and the emergence of real competition from new approaches, are very positive benefits of increased cross-border activity and the development of a few truly European firms.
- 2.42 What is of concern is that much new EC legislation creates new administrative costs and learning obstacles which can be a significant burden for small firms. This creates a high aggregate cost because of the large number of individual firms. Moreover, these costs may create new barriers to entry, inhibit the role of the very small firms in allowing supply to respond to fluctuations in demand, and inhibit innovation, although as the next paragraph argues, higher barriers to entry and higher capital requirements may not be a bad thing.

- 2.43 The perceived advantage of small firms in providing rapid response and flexible supply may be a disadvantage. The volatility of markets is a major problem. In construction an increase in demand and prices brings out an over-response. Instead of the industry meeting capacity constraints, so that the prices rise and so cut back demand and ensure that only the most viable projects are implemented, the supply increases and brings in lower-quality producers. The time lag between starts and completions then ensures a volatile cycle of boom and bust. It would be better to have more restricted entry to the industry to stabilise supply (as well as to increase quality), by the wider application of registration and qualification systems.
- 2.44 Some types of very small firms can be highly innovative, namely those specialists set up to exploit a niche market or new process, but these are a minority. On balance, the dominance of the industry by very small firms is a real obstacle to the coordination, promotion and dissemination of research. Positive measures need to be taken to assist very small firms to improve their performance, quality and productivity, by providing better access to training and information about new products, techniques and procedures.
- 2.45 The problems of small firms are mainly related to:
- training;
 - information availability;
 - management time and ability;
 - payment problems, delays, and financing costs.
- 2.46 The main problems relate to micro-firms, self-employed persons and family businesses. The working proprietor has little time for administration, accounts, keeping abreast of technical regulations and new products. This problem is tackled very well in some countries by a network of local business training centres (discussed further in Chapter 8).
- 2.47 The problem of payments to firms when they act as subcontractors is a particular cause of inefficiency in the sector. Cash flow is a concern for all contractors because there can be quite long delays between execution of work and payment by the client. With low fixed assets, contractors have limited borrowing capacity, and financing costs can be very high. When there are chains of subcontractors, main contractors usually manage payments to subcontractors on a pay-when-paid principle. Consequently delays to subcontractors' payments mount up. Many small firms close because of cash flow problems which may be outside their control. This results in re-work, delays and social hardship. The overall result is that it is the weakest and smallest firms who bear the financing burden, and they have poor access to bank credit. They frequently depend upon trade credit from suppliers and builders' merchants, which puts up materials costs. As a result, total financing cost of construction is much higher than it should be, with additional costs resulting from business failures (see also para 3.13).
- 2.48 The German *Handwerk* sector is a special case of small and medium-sized firms. The 24 construction crafts are among the crafts where firms must be registered with the *Handwerkskammer*. A precondition for the establishment and management of an artisanal construction firm, as well as for the training of apprentices, is the *Meister* certificate, gained by examination and with at least 5 years' experience after passing a trade examination. This gives the German industry the essential concern with training and quality which is lacking in some other countries, and creates the controls on entry to the industry which maintain stability of supply. It outlaws the casual forms of employment which can be damaging to quality, health and safety and financial stability, but it also makes it difficult for workers laid off during a recession to take up self-

employed work. On the other hand it forces workers to be mobile, which in practice will mean seeking work in the former East Germany or foreign markets. For foreign firms and craftsmen, however, the system is a barrier which makes it more difficult for them to work in Germany, especially for countries like the UK and Ireland which do not have an equivalent system of registration of firms or equivalent qualifications.

Quasi-firms

- 2.49 The fragmented nature of the industry is somewhat reduced by long-term networks of firms, or quasi-firms. This is a well developed feature in Japan, and quite significant in the USA and the EC. Many firms work with regular subcontractors. Some small firms collaborate to share common administration and sales service.
- 2.50 It is also increasingly common for major customers to develop groups of consultants, contractors and subcontractors that undertake all their work. The important point about these networks is that they provide a practical solution to the problems of small firms. The bigger central, paternal firm (either customer or contractor) ensures that the small firms with whom they work are reliable, efficient, up-to-date and innovative. Their reputations depend on this being so. Franchising is also relevant in this context, especially in repairs and maintenance. The parent franchising firm ensures the competence of the small firms who buy into the franchise.

Large Contractors

- 2.51 The EC has some very successful big contractors. Table 2.2 shows Europe's top 20 in 1991. These are mainly based in the larger EC countries, the UK (8), France (7) and Germany (3). Other lists of top contractors in other publications

TABLE 2.2 - EUROPE'S TOP 20 CONSTRUCTION FIRMS (1991)

	Contractor	Country of Origin	Turnover* (ECU million)
1.	Bouygues	France	9 228
2.	Société Générale d'Entreprises	France	6 409
3.	BICC	UK	5 406
4.	Holzmann	Germany	5 365
5.	Iritecna	Italy	5 282
6.	Tarmac	UK	4 600
7.	Trafalgar House	UK	4 568
8.	Société Auxiliaire d'Entreprises	France	3 909
9.	GTM Entrepouse	France	3 857
10.	AMEC	UK	3 335
11.	Hochtief	Germany	3 138
12.	Spie Batignoles	France	3 096
13.	Beazer	UK	2 749
14.	Bilfinger & Berger	Germany	2 582
15.	Wimpey	UK	2 500
16.	Dumez	France	2 423
17.	CEGELEC	France	2 283
18.	Laing	UK	2 263
19.	P&O	UK	2 129
20.	FCC	Spain	2 039

* Turnover figures include non-contractor activities.

Source: *Le Moniteur*, November 1992.

show some differences. Nevertheless, despite contractors appearing in different positions in the various lists and some big contractors not appearing at all in some lists, the general picture is consistent. The EC has about 35 big contractors; that is firms with an annual turnover in excess of 1 250 million ECU at 1991 prices. None of the big EC contractors has a turnover (which includes their payment to subcontractors - often 80 percent of their turnover) which reach 5% of their national market.

- 2.52 Many of the EC's biggest contractors are part of groups of companies that work in several industries of which construction is just one. In many cases these groups engage in work in several construction subsectors, e.g. manufacturing materials and components, providing various services (such as transport, water, waste treatment) and owning property-related businesses. This can make it difficult to determine the size of their construction business. This tends not to be the case in the USA and Japan, where contractors generally concentrate on direct construction work.
- 2.53 The EC does not have any contractors as big as the largest US or Japanese contractors, for example, Fluor Daniel (turnover ECU 17 380 million), Bechtel (ECU 14 900 million) and Shimizu (ECU 25 535 million). It is perhaps significant that all of the very big US contractors are super-specialists in engineering and infrastructure work and operate as turnkey contractors providing mainly the design, procurement, finance and project management services in-house (but with large numbers of contract staff who are not permanent employees). They subcontract nearly all site and manufacturing work. The EC general contractors, that is contractors engaged in both building and civil engineering site work, are bigger than their US equivalents. However, the biggest contractors of all are the Japanese, who also undertake a wide range of building and engineering work.
- 2.54 The EC needs some big contractors which are able to compete with the world's giants. It is expected that such firms will play a leading role in shaping the industry and its public image, and a number of the big contractors feel that government has a role in encouraging such firms to undertake R&D. This does not mean that governments or the European Commission should intervene in the structure of the sector, but helping contractors become more internationally competitive should be a specific objective of EC policy. The big contractors emphasise that it is necessary to keep an industry structure with a large number of small firms, because the supply offered by the construction industry must reflect the demand of the clients. Big contractors will never contribute more than a small share of total construction output, employment and value added (9% of employment for firms with over 500 employees in 1988, see Table 2.1).
- 2.55 Within the EC it is increasingly common for several contractors to joint-venture in bids for major construction projects. For example, the construction and financing of the Channel Tunnel involves international cooperation between some 10 contractors and over 200 banks and other financial institutions. Many of those interviewed in all sizes of contractors believe that new opportunities are to be found through joint-ventures, strategic alliances, mergers, acquisitions and cooperation generally. There are several kinds of advantage from cooperating. It spreads risks, provides access to a range of technical knowledge and experience not possessed by any one contractor, may well provide access to a wide range of sources of finance, and increases the pool of labour that can be called upon.
- 2.56 Some contractors in EC countries such as Germany, Spain and France, have formal links with industrial banks. This can provide important advantages in

FIGURE 2.1 - TYPICAL INDUSTRIAL STRUCTURE IN SELECTED CONSTRUCTION PRODUCT AND SPECIALIST CONTRACTORS SECTORS

Cement

A capital intensive industry with important economies of scale, requiring large investments. There are about 190 companies in Europe, 140 in the EC, with an average production of 1 million tonnes. Japan has around 22 companies averaging over 4 million tonnes per company. For reasons mainly of transport cost and population density, European plants are on average smaller than in Japan. Some individual national or regional markets may have few companies and may be dominated by one company, but in some countries there are too many small plants.

Cement suffers from 'territorial competition' - firms compete vigorously on price to maintain their control of local markets because of high transport costs and weak product differentiation. Profitability is then seen to be too weak to justify much investment in larger and modern plant, in energy saving technology and in product research and development, particularly when demand is stagnant or declining as it has been for the last 20 years. Nevertheless, over 20 years, production per man has doubled, average kiln sizes have increased, energy consumption has been reduced, and dust emissions reduced tenfold in some plants.

There has been a certain amount of restructuring recently, with the larger firms making acquisitions. In the past few decades EC firms acquired much of the US capacity, where profitability has previously been very low. Privatisation in eastern Europe presents new opportunities for acquisition.

Brick Manufacture

Throughout Europe the bricks and clay tiles sector consists mainly of small and medium-sized firms, with family ownership still common. Firms mainly serve small local markets, mainly because of transport costs, and the need to be near clay pits. There are very many different types and specifications of brick. The industry has been concentrating and the number of firms reduced from 2 825 in 1980 to 1 781 in 1991, and employment also fell by 38% during the 1980s. There are still, however, relatively few large efficient plants, except in the northern countries. Further restructuring is likely to be caused by the costs of compliance with environmental legislation.

Ceramic tiles

The ceramic tile industry is largely concentrated in a few regions of Italy and Spain, which have large numbers of small firms, and a few large groups of companies. Italy and Spain have 560 companies with 45 000 employees (average 80 employees per firm), while the rest of Europe has around 60 firms with 17 500 employees (averaging 290 employees per firm). The geographical concentration of small firms generates economies of training, marketing and distribution.

Flat Glass

The flat glass industry is highly capital intensive, with a large minimum size of plant relative to the markets. Worldwide it is dominated by 10 firms of which 3 are European, including two of the largest, Pilkington and St Gobain. Each has many plants in many countries. US and Japanese firms also have plants in Europe. Distribution and secondary processing of glass, for example laminating, toughening and shaping, is normally in the hands of smaller specialist firms, and glass is not normally distributed through the general builders merchants.

Windows and Curtain walling

These two segments are considered together as some of the larger firms are active in both markets. Unlike the basic construction materials markets, the window sector is segmented several ways (for example by material: metal, wood and uPVC, and into new and replacement markets) and has highly differentiated products. It also markets directly to customers in the replacement market, and design is important, so the industry is more pro-active in marketing, product research and development than many other sectors.

The sector is also divided into the companies which make the profiles and sections from which frames and systems are made (for example aluminium and uPVC extruders, who supply many other customers), and the fabricators of the windows. The fabricators are often small local companies, producing both standard products and windows to order. In the metal windows segment alone there were 21 500 firms in Europe in 1989 with 130 000 employees.

Constructional Steelwork Fabrication

The steelwork sector has two segments: the fabricators who cut, form, weld and assemble components in yards and factories; and erectors who perform erection work on site. Some fabricators also erect, and may also do design work so they are in effect design and build contractors. Some erection is done by general contractors. In 1989 there were in the EC around 70 medium to large fabricators (producing over 10 000 tonnes per year); 100 medium fabricators (3 000 to 10 000 tonnes per year); and 3 000 small fabricators (under 3 000 tonnes). Most of these also do erection, and it is estimated that there may in addition be around 1 000 specialist steelwork erectors

The larger constructional steelwork firms are part of a wider steel fabrication industry making process plant for the power generation, oil, chemicals, steel and other industries, and some firms are closely related to the shipbuilding industry. The larger and more modern fabricators are very capital intensive factories, with CAD and automated handling and welding equipment. At the other extreme, many of the smaller fabricators have simple cutting and welding equipment and small yards, serving very local markets for light fabrication.

Air-conditioning Suppliers and Contractors

The ventilating and air-conditioning (VAC) sector is an example of a subsector supplying a wide range of products and subassemblies, with a high level of manufacture with mechanical, electrical and electronic subcomponents. At one extreme, the centralised systems in large buildings are complex, assembled on site from many subcomponents from different manufacturers (fans, ducting, attenuators, air-handling units, coolers, electronic control systems) and at the other extreme are individual compact room units. There is thus a complex of different types of manufacturers and installers. There are a few large international (mainly US) manufacturers, but since the manufacturing process is simple there are many very small firms serving a local market from small premises. Installation is particularly fragmented, with some national firms and many small local firms. Installation also overlaps with other parts of the building services industry: installation may be by VAC specialists, electricians, plumbing and heating specialists or refrigeration engineers. There are also in each country a number of large mechanical and electrical contractors who provide a completely integrated building services design, supply and install service, subcontracting many parts of the manufacturing to small suppliers.

The sector is becoming more capital intensive, with high research input and more demanding design requirements. This will lead to more integration between the parts of the business, with many of the small firms being absorbed into larger firms.

access to finance and allow contractors to take a long-term view in developing their business. (Conversely, the very large number of small and micro-firms, with very poor access to finance, hence relying largely on expensive trade credit, leads to instability and higher costs for very small firms, as discussed in para 2.47.)

- 2.57 To some extent there appears to be a direct relationship between the size of the biggest contractors and the size of their home market. The Netherlands provides one exception within the EC. It has several big contractors. This may be a result of the industrial policy for construction pursued by the Dutch government. Generally, big contractors come from big countries and this suggests that as the single EC construction market becomes a reality, some of the big EC contractors will become bigger. Indeed, this has already happened to a large extent, in anticipation of the completion of the single European market. In the main, this growth in size has been achieved by international mergers and acquisitions. It is reported that there were 198 new intra-European mergers and acquisitions amongst contractors in 1991; the number fell to 86 in 1992. These are mainly acquisitions of shareholdings in other firms. There have been few outright takeovers or mergers. The countries most active in 1992 were France (17 acquisitions of foreign contractors), Germany (14) and the UK (9) (source: European International Contractors: 'Mergers and Acquisitions in the European Community' September 1992).
- 2.58 In most of the EC countries, concerns were expressed by many of the medium-sized contractors interviewed about the future viability of being medium-sized. However, the actual size of firms in this category is a function of their home market. For example, in the UK, medium-sized contractors have annual turnovers of about ECU 250 to 1 250 million, and a high proportion of these appear to be financially weak. However, in say Greece, Portugal, or Ireland, contractors of this size are regarded as big and tend to be financially stable.

The Structure of Other Subsectors

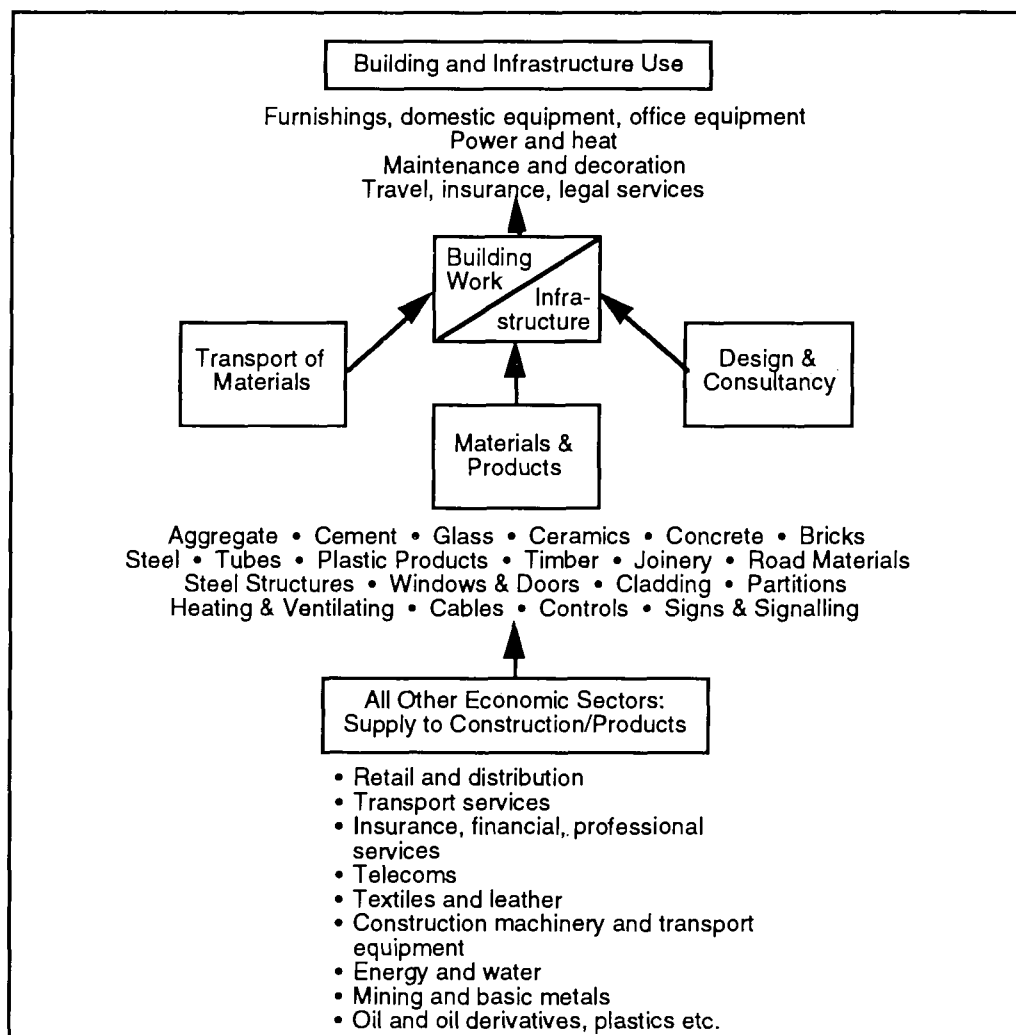
- 2.59 The preceding paragraphs deal principally with construction firms. In the case of designers and consultants, almost all firms are very small - typically less than 5 employees. Even the very few large design bureaux and engineering consultants have only 3 000 to 5 000 employees and turnovers of around ECU 100-200 million.
- 2.60 In the case of manufacturers, there is a wide range of structures, from flat glass which has only 3 major EC firms, to products such as air conditioning units and ducting which are mainly assembled by small firms. Examples of the structure of selected product subsectors are shown in the box (Figure 2.1). In many construction product sectors a period of restructuring and rationalisation is inevitable as the trading patterns in the single market develop, and as harmonised standards permit increased trade and economies of scale.

Employment Impact

- 2.61 The construction sector directly or indirectly generated employment for around 26 million workers in 1990, a fifth of the total EC workforce, broken down as follows:
- | | |
|---|--------------|
| Direct employment in construction and consultancy | 9.6 million |
| Direct employment in materials and products | 2.5 million |
| Indirect employment in other supplying sectors | 14.3 million |

The estimates upon which these figures are based are shown in Table 2.3. In addition, construction can be said to generate employment in all the sectors which supply services to building and infrastructure use and maintenance, such as furnishing, domestic and office equipment, power and heating, insurance and legal services, etc. These interlinkages are illustrated in Figure 2.2. There are no major sectors of the economy whose output does not to some extent depend upon construction activity, and the web of linkages to construction is probably more extensive and complex than for any other industry.

FIGURE 2.2 EMPLOYMENT AND INCOME GENERATION EFFECTS OF CONSTRUCTION ACTIVITIES



- 2.62 From the direct and indirect employment estimates in Table 2.3 (which are not based on a full input-output analysis) it is estimated that each direct job in construction firms generates about 3 jobs in total, through the chain of supply. This does not include the induced impact of aggregate income-multiplier effects (in the Keynesian sense) of addition expenditure on construction.
- 2.63 In the long-term, it is the dynamic effects on economic growth which have the most important impact on employment. Construction is an investment good. More construction means higher saving and raises growth rates. The effect on employment of alternative scenarios for growth and construction output are discussed in Chapter 4.

TABLE 2.3 - ESTIMATES OF EMPLOYMENT IMPACT OF CONSTRUCTION

Employment Sector	Million Employees/Owners 1990					
A: Direct Employment (NACE 500 - Builders & Contractors)¹	8.8					
1988 = 8.1; 1990 = 8.1 x 1.08 (output growth - assuming no productivity change)						
B: Consultants (Architects, Engineers, Surveyors)²	0.8					
C: Construction Products³						
	<i>Activity</i>	<i>Employment (Firms >20)</i>	<i>% in Firms <20</i>	<i>Total</i>	<i>% of Output to Construction</i>	
	Iron & Steel	0.3	6	0.32	40	0.13
	Quarrying	0.100	38	0.160	100	0.16
	Clay Products	0.090	23	0.120	00	0.12
	Cement	0.082	23	0.106	100	0.11
	Concrete Products	0.247	23	0.32	100	0.32
	Glass	0.245	23	0.32	50	0.16
	Ceramics	0.254	23	0.33	50	0.17
	Paints & Dyes	0.480	8	0.522	30	0.26
	Metal Structures	0.316	28	0.410	50	0.21
	Wood Products	0.073	46	0.095	70	0.07
	Carpentry	0.168	46	0.218	50	0.11
	Other metals & tubes (WSA estimate)					0.2
	Other plastics and chemicals (WSA estimate)					0.2
	Electrical and mechanical equipment					0.3
						2.5
	Total Construction					12.1
D: Secondary indirect effect of purchases from all other sectors⁴						
	Total civilian employment = 131.6 million					
	Construction = 12% of GDP, direct employment = 12.1 million					
	Total employment of other sectors = 119.1 million					
	Construction impact = 12% x 119.5 = 14.3 million					
	Total Indirect Effect					14.3
	TOTAL DIRECT & INDIRECT					26.4
	MULTIPLIER	26.4/8.8 = 3.0				

NB Direct employment may be underestimated because of the levels of casual employment, self-employment and black labour.

- Sources:
1. Commission/Eurostat, *Enterprises in Europe, Second report, 1992* (FIEC data gives 9.3 million).
 2. Table 3.1, various sources.
 3. Eurostat databases.
 4. Assumes average input from all other sectors.
 5. Eurostat, *Basic Statistics 1992*.

Chapter 3 - THE CHANGING CONSTRUCTION PROCESS

Procurement Processes

- 3.1 As described in the various country reports, there are widespread trends towards the adoption of new construction processes, particularly design-and-build, construction management, and management contracting forms. There is generally a call for more flexibility in the selection of contract forms. A brief description of typical procurement routes is given in the box below (Figure 3.1). There are of course many variations on these typical forms both within countries, and between countries. The proportion of work carried out by each route also varies between countries, but there are no firm data available on this.

FIGURE 3.1 - SOME DIFFERENT PROCUREMENT ROUTES

Main contractor: The client has a single construction contract with a main contractor, who in turn may subcontract parts of the work. Design is done by a consultant (architect or engineer) working for the client, who provides plans to the contractor and usually has some part in supervising the work. The lead designer will also usually subcontract specialist parts of the design (e.g. foundations, structures, building services).

Separate trades: The client has separate direct contracts with each designer and specialist contractor (e.g. foundations, structures, electrical, air-conditioning, etc.). One of the contractors, usually the lead designer, may coordinate the contracts and the work of all the contractors.

Management contracting: A project manager or contractor takes on a turnkey contract to provide all design and construction work by subcontracting all or most of the work to others. They take responsibility only for the management and are reimbursed all subcontract costs plus a management fee.

Construction management: Similar to separate trades, with the project management carried out by a consultant who acts on behalf of the client and is paid a fee, but all separate specialist contracts are directly paid by the client.

Design and build: A single contractor is appointed by the client to carry out a turnkey project including all design and construction activities, based on conceptual design or performance specifications. The contractor may subcontract design to a consultant or design bureau or do it in-house, and may subcontract most of the site construction to specialists.

- 3.2 The main changes discussed by interviewees were:
- the desire for greater choice between the main contractor, separate trades or construction management forms; and
 - the trend towards design-and-build processes.
- 3.3 In general, there is a trend towards design-and-build or similar methods. In Spain, where the legislation on compulsory use of architects does not permit design-and-build for buildings, there is nevertheless a trend for more detailed design work to be left to the contractor or the specialist supplier, and design-and-build is used more for complex civil engineering projects (motorways, nuclear stations) where the protected role of the architect does not apply. The design-and-build trend has gone furthest in UK, and some consider it has now

passed its peak. As disillusion has set in, the 'construction management' forms are receiving more attention. Nevertheless only a small proportion of projects is procured by design-and-build. In a range of surveys of customers design-and-build accounts for just under 20% by value of construction work in the UK. Construction management accounts for less than 5% and management contracting for a little under 10%. The rest, over 65%, is general contracting with a main contractor and consultant.

- 3.4 In the building sector, construction management, design-and-build and other turnkey forms respond mainly to the underlying problem that as building projects become generally larger, and the technology of construction becomes more complex, the architect (or engineer) no longer commands all the technology and is increasingly distant from the practical problems of site construction. The relationships between parties have become much more complex, and lead to more conflict. The right professionals are not always brought in at the right time. A single point of responsibility for coordinating all the inputs is therefore preferred by some clients.
- 3.5 There are very divergent views on the benefits of design-and-build methods. Many clients who choose design-and-build do so because they believe that it reduces time and costs by reducing the costs of coordination and liaison between designer and contractor, and because the contractor is able to work with the designer to select the most efficient and economical method of building. It is also held that it eliminates errors of detailing which lead to defects later; and that the client's own management time is saved by having a single point of responsibility. In response, architects and some clients now say that design-and-build can lead to uninteresting design, and pressure always to use the lowest cost method and materials with no regard for lifetime costs or quality of finish. The client loses control of the design and can end up with a project which does not meet his requirements. Quality may be poor because there is no independent control. It is also argued that time and costs are not always reduced.
- 3.6 One consequence of turnkey methods is that design work is usually subcontracted to design bureaux and engineering consultants, who then work for the contractor and not the client, and lose their independent advisor status. In practice, the contractor may assign design work to anyone, without control on their training and competence although this is unlikely to be a problem with a reputable contractor. The client loses some protection because the construction firm can be liquidated and there is also no other party to accept liability. Turnkey methods can be a good solution, in appropriate cases, if they are backed by a good insurance-based guarantee, which to some extent gives the assurance which in main contractor forms should be provided by independent consultants.
- 3.7 One solution proposed in response to these problems is to recognise a clear division between the initial conceptual design phases leading up to the construction permit, and the subsequent detailed design and execution stage. The first stage needs careful regulation to protect the client and assure the general public that urban planning, environmental, energy conservation and health and safety aspects are properly considered and that the client receives proper advice on options, life cycle costs and procurement methods. This would require use of appropriate designers and consultants and have a well defined construction permit procedure (for both public and private projects). The initial advice and permit application need not necessarily be by an independent architect but should be by appropriately qualified and registered individuals or firms. In many cases, for example simple industrial or agricultural buildings, an independent consultant would not be necessary. The initial designers of some projects might, arguably, be contractors with the

necessary registered expertise in-house (for example, their own design unit employing registered architects), if the client chose. In the execution stage, clients would be free to use any appropriate method with only health and safety aspects being regulated. The extent of regulation and control of the site process is discussed in Chapter 6.

Construction Methods

3.8 Changing technology, discussed in Chapter 7, is generating changes in construction methods which will affect the structure of the industry, the roles of the parties and procurement methods. There are three main factors:

- *Increasing standardisation* of products and design solutions allied with a greatly extended choice of materials, products and modules (the actual number of products on the market should decrease, but their availability and suitability will increase). The Construction Products Directive has given a stimulus to the process of standardisation, and the power of CAD will make it feasible to use databases of products and standard design details. One of the lessons of the USA is the power of standardisation to reduce costs and speed design and construction without sacrificing design choice. The product manufacturers must be the driving force in creating this change by overlaying *de facto* industry standards onto the harmonised European standards based on essential requirements.
- *Mechanisation and labour-saving innovations*. This continues a process which has already led to very much work on site being carried out by specialist contractors with specialist plant. It will continue to lead to reduced demand for unskilled labour, more plant operators and more specialist supply-and-fit contractors, including the beginnings of the practical use of robots on site, by reorganising site practices.
- *More off-site manufacture* and prefabrication and less on-site work. This is a consequence of standardisation and mechanisation, and should put more importance on the manufacturers, with a greater role in design, research, training and marketing. It is likely to further reduce the relative demand for some traditional site crafts, with demand for more flexible erection skills.

3.9 These changes apply to new construction work, in which there is already a spectrum from traditional skill-intensive activities to more capital-intensive methods. Repair, maintenance and refurbishment work will continue to rely more on traditional crafts, while at the other extreme most new civil engineering work is a highly mechanised activity in which the main contractors are mainly concerned with project development, design, management, financing and coordination, with relatively few of the contractors' own site employees.

Subcontractors

3.10 A consequence of the changes outlined above is that the proportion of construction site work carried out by specialist contractors has increased over the last decade. Some countries, such as France, have for a long time had a system which favours construction by a series of separate trade contracts (*lots séparés*) with a construction coordinator (*pilot*) and an independent project manager (*maître d'œuvre*). In most cases, however, specialist consultants work as subcontractors to a main contractor. Increasingly, construction sites have few direct site employees of the main contractor, except for site preparation and clear-up. In the UK, it is estimated by the specialist contractors' associations that over the last decade the share of site construction work provided by subcontractors has increased from 20 to 80%.

- 3.11 This change has been driven partly by:
- the increasing share of services (electrical, mechanical, hydraulic systems, etc.) in projects;
 - increasing prefabrication;
 - increasingly specialist technology, and the economic benefits of buying in the services of specialist plant operators rather than owning expensive plant;
 - the economics of integrating supply and fit of components like windows or lifts;
 - the benefits of being able to vary the labour input in response to changing workload;
 - the increasing cost of social security and other employment benefits for permanent employees.
- 3.12 The UK is an exceptional case in which there are income tax advantages for self-employed workers, so that there is now a large proportion of employment in the hands of 'labour-only' subcontractors who in turn may in some cases use nominally self-employed workers on a casual basis. This is not the case in other more regulated EC countries, and in some Member States labour-only subcontractors are forbidden.
- 3.13 Where specialist or labour-only contractors work as subcontractors to a main contractor payment problems are common. In many cases, the main contractor's profit is made or lost by timing of the cash flow on the project rather than value added of the work done, so there is a strong incentive to delay payments to subcontractors when there are difficulties. (Often, of course, delays are caused by subcontractors within a chain of responsibility for which all firms in the chain suffer because payments are delayed from the client.) The main contractor is also in a strong position to drive down subcontractors' prices by successively asking potential subcontractors to undercut prices already agreed with others. This has the effect of creating insecurity in subcontractors and frequent company failures, both threatening the completion of projects and creating a very insecure labour market. This in turn threatens training and innovation. It also increases the overall resource cost of construction for two reasons. Firstly, some projects are interrupted by failure of subcontractors and work has to be redone: secondly, the financing of the project is in effect borne by the small subcontractors at the bottom of the pyramid. These have to run a negative cash-flow but do not have access to low-cost credit and mainly rely on expensive credit from merchants and suppliers, whereas the large contractors with good credit ratings can run cash-flow surpluses.
- 3.14 The law and practice on subcontracting varies between EC countries. In some countries subcontractors need to be registered for public contracts, in others not. In Italy, as well as the need for registration, there was until 1992 a ceiling of 40% on the maximum share of work which can be subcontracted. This has inhibited the development of specialists in Italy. France has a law protecting subcontractors. Subcontractors in most countries can expect to carry a share of responsibility, but in some the main contractor carries all liability. Other countries have laws making main contractors responsible for ensuring that subcontractors comply with social security, tax and health and safety legislation. The latter is now enshrined in the Temporary or Mobile Construction Sites Directive, which may inhibit the development of construction management and separate-trades types of contract arrangement.

3.15 There is a need for more readily available information to contractors about the contract and legal requirements in EC countries, and eventually a simplification of the many differences in existing contract arrangements and related legislation.

The Professions and the Role of Consultants

3.16 The construction consultants - architects, engineers (with various specialisms in different countries), surveyors (and construction economists) and variants on these specialisms - have a pivotal position in the construction process. They act in different roles, as designers and project managers, with different responsibilities according to the contract and circumstances and the customary practice of the country. Overall their role encompasses:

- safeguarding the public interest in terms of aesthetic and functional quality of the built environment (mainly architects and town planners, or engineers for civil engineering projects);
- helping clients define their needs, conceptual design, decision on options and costs (mainly architects and engineers, supported by surveyors);
- representing clients in negotiation with contractors, project management and coordination, cost control (any profession);
- technical control of the site execution, for compliance with plans and contract, and for health and safety, on behalf of the client, the insurer or the local authority (different professions depending upon the country, and often by specialists with practical and technical training);
- inspection, valuation, facilities management of existing property (mainly surveyors).

3.17 The total numbers in the various professions in the EC in 1990 are shown in Table 3.1. Note that the columns cannot be compared; the table shows all registered architects, wherever they work, but only shows engineers working as consultants in EFCA (European Federation of Engineering Consultancy Associations) firms.

TABLE 3.1 - NUMBERS OF CONSTRUCTION PROFESSIONALS IN EC (1990)

Country	Registered Architects	Consulting Engineers*	Cost Consultants and Surveyors
Belgium	7 718	5 150	na
Denmark	5 700	9 060	50
France	25 746	27 880	6 100
Germany	67 533	28 000	na
Greece	12 240	3 200	na
Ireland	1 300	630	810
Italy	53 300	21 500	na
Luxembourg	265	384	na
Netherlands	4 665	9 400	5 400
Portugal	4 198	1 960	2 000
Spain	19 243	14 820	15 000
United Kingdom	31 000	49 260	19 000
Total of above	233 951	171 244*	na
Estimated total**	[250 000]	[400 000]	[100 000]

* Only EFCA member firms of engineering consultants, estimated 40% of total.

** Including non-registered employees.

- 3.18 There is a need for a better understanding of the practical operation of the roles of consultants in each country, both to assist practitioners operating outside their home country, and to help identify the best elements of the training and practice in each to improve training and professional competencies. The changing construction process and technology has brought about many changes in practice and the balance of responsibilities and risks, and will continue to do so. The professions will need to keep changing in response to this.
- 3.19 As many projects become more complex, a deeper specialisation is needed by individual professionals, along with a greater need to work in multi-discipline teams. This has implications both for the individuals' attitudes and approach, the organisation of professional firms, and the training arrangements and definitions of competencies. There needs to be a careful examination of professional training and specialisms. This will be a long and difficult task. It will be difficult to reconcile the different national approaches. It will be even harder to institute changes. Those who need to make the decisions on change are those in current practice, and particularly those in the professional institutions, who have had a life-time in the existing system, and even when changes in practice and training are implemented the new graduates will be working for professionals experienced in the old system, so change will take time and gradual adjustment.
- 3.20 Some of the issues and options which need to be considered by the professions are:
- whether there should be a common initial core syllabus for all construction professions, with increasing deepening of specialisation in successive stages;
 - whether all construction professions should be taught in the same academic institutions and schools to promote cross-fertilisation and a positive attitude to multi-discipline working;
 - whether a specialism or specialisms are needed for project supervision and management, including health and safety planning, quality control, and technical control (akin to the technical architect in Spain);
 - whether there should be more building services engineers, with more specialist training.
- 3.21 The future is likely to see a shift in the demand for construction professionals' services. Overall the total professional input into the construction process is likely to take an increasing share while the direct labour input on site declines. The mix of professional services will also change, with increasing need for management and coordination, and increasing volumes of information being available and needed. An increasing share of the professional management and design input will be by manufacturers and contractors, and a declining share of independent consultants.
- 3.22 Computer-aided design (CAD) technology will become increasingly powerful. It has simplified the routine tasks of detailing, measurement and generation of drawings and amendments, and given more power to the design team to consider options of concept, products and materials. More detailed designs can be produced with more frequent updates, enabling much better day-to-day planning of the construction process. It will be possible to integrate better the design inputs from specialist suppliers and different specialists on the design team. The management of this information will be an important part of the design team's task.

- 3.23 The design professions and their educational and professional institutions have a major task to enable this leap in design power to take place, and it requires also a major effort from the computer and software industry to provide the tools and systems to enable it to work.
- 3.24 The environmental aspects of building design are becoming more important, both in terms of the external impact of projects on their surroundings (energy consumption, traffic, effluent, air and water flows, ecology, visual impacts) and the internal environment. The needs of energy conservation place a particular requirement to optimise the initial design, to use the passive performance of the structure and to minimise the use of mechanical and electrical services. In most EC countries there are too few specialists in building services engineering, and they are usually identified as 'electrical and mechanical engineers' specifying add-on plant and services rather than 'environmental engineers' involved in the total design. This service needs to be an integral part of the design process from the concept, and include all the environmental aspects (comfort, air quality, energy, health and pollution) including materials properties, toxicological and microbiological aspects, and the thermodynamics of structures, as well as the external impact of the projects on the local and global environment.
- 3.25 Greater design input to the process requires a better integration of design and execution, and hence a greater level of interchange of information between parties. This is very much linked to the system of liability and insurance, and the contractual responsibilities of the parties. The parties carrying the greater risk will need to have control of the design and information process. As it becomes more difficult for independent architects and consultants to accept responsibility for the ever more complex projects and larger numbers of participants, so the main design task will tend to be under the control of the prime contractor, whether that be a construction firm, or a professional project manager. The distinction between contractor and consultant is also becoming blurred on large projects as main contractors predominantly become managers and financiers of projects and the erection work is carried out by subcontractors. For all types of projects, guarantees should become more important than the legal regime of liability, and the party offering the guarantee - the prime contractor - will then control the design and subcontract the other parties.
- 3.26 This means that the traditional concept in Anglo-Saxon countries of 'independent' consultants, meaning architects and engineers who are always contracted to the client and can have no links with 'contractors' who are the employers of site labour, is no longer the only way of exercising the profession. There are many options. A large proportion of architects and engineers will continue to be self-employed individuals or employees in firms specialising in conceptual design, client advice and activities up to the construction permit, and in some monitoring or contract management activities during construction - the 'traditional' consultant role. A growing proportion of architects and engineers will in future be employed either directly by project contractors or supply-and-fit manufacturers, or by design firms whose main business is supplying design services to project contractors. Others again will be technical controllers acting for clients or insurers during execution. Professional services firms employing architects, engineers and project managers and no site execution staff could in some projects be prime contractors for large projects, and they may subcontract design services as well as site services.
- 3.27 It also means that the strict Napoleonic concept of the controlling architect responsible for everything from aesthetic concept through supervision of the contractor - which exists as the rule only in the Spanish system - is not viable as

a universal solution, because for complex projects it is unreasonable to expect any individual to master all the technologies and to carry legal responsibility for all aspects of design and execution.

- 3.28 It is particularly important that the right skills are used efficiently for the right purpose, so that projects are designed efficiently, with the best value for money, responsive to the practical problems of construction, optimising use of materials and minimising health and environmental dangers. First of all it is essential that the architectural and town planning aspects of design are assured: one of Europe's greatest assets is its architectural heritage, which has been eroded already in many towns and cities by bad planning and design, particularly in the 1960s and 1970s. In order to ensure that the right skills are applied to the various aspects of design, effective registration systems are required which cover all the professions, and clearly indicate the specific competencies and level of training and qualification of each individual.

In-house Services

- 3.29 A large proportion of design, planing and project management and supervision work for public sector clients is carried out by in-house departments of municipal authorities and central government. The extent of this, the lines of responsibility and the degree of centralisation varies between countries. Conceptual design, planning and supervision is commonly carried out by in-house departments for:
- roads, bridges and road maintenance (usually central government for motorways and trunk roads, municipalities for others);
 - schools, colleges, sports centres, hospitals and health centres (municipalities);
 - water supply, sewerage and waste water treatment (often at municipal level);
 - sometimes gas and electricity distribution.
- 3.30 These in-house services have in the past not been subject to competition, so that there is a tendency to inefficiency. In the cases where engineering and design work is done at a municipal level, projects may be infrequent, and small in scale, so there is inadequate development of expertise. There is insufficient exchange of expertise between departments, so research, development and learning from experience is restricted. In several countries it is common practice for engineers and architects employed by public authorities also to work in private practice or in teaching, which may generate a flow of expertise, but means that the in-house public services are inefficient, and in fact are also subsidising private practice. This distorts competition, and creates unrealistically low prices in private practice leading to poor service and quality.
- 3.31 Many in-house design and project supervision teams achieve standards of excellence, and ensure that high quality projects are implemented. They are able to commit research resources which would not be possible in a competitive environment, particularly the sort of aggressive competition common in construction markets, or when there is unsophisticated price-only procurement. In-house services can concentrate expertise in one specialist body, and economies of scale are achieved. This is important in new technologies such as occurred in the past initiation of motorway programmes, new transport systems, nuclear power, or defence systems. The unfortunate result of such in-house work, however, is the proliferation of distinct sets of technical standards,

which is a major source of inefficiency, waste, and barriers to trade. It really has no place in mature technologies.

- 3.32 Some authorities, for example in the UK, have begun compulsory competitive tendering, market testing or privatisation of in-house services. There would be benefits from extending this approach throughout the Community. Competitive tendering for services such as design and project management, however, should be based on transparent and fair prequalification, and bid selection should be based on quality and technical criteria, for example, using two-envelope procedures, not fee-only bidding.

TABLE 4.1 - CONSTRUCTION INDUSTRY GROSS OUTPUT 1981-92

(Billion ECU at 1991 constant prices)

Country	1981	1983	1985	1987	1988	1989	1990	1991	1992
Belgium	16.70	14.88	14.17	15.43	17.21	18.60	19.57	19.35	19.6
Denmark	10.67	10.97	12.40	14.50	13.88	13.27	12.86	11.99	11.7
France	89.45	81.72	78.13	84.10	88.48	92.75	95.13	95.43	93.9
Germany	141.89	137.19	129.60	133.12	137.12	144.24	151.15	159.10	142.2
Greece	2.69	2.80	2.92	3.04	3.06	3.20	3.39	3.21	3.2
Ireland	2.58	2.68	2.79	2.91	2.97	3.41	4.02	4.15	4.2
Italy	98.94	94.86	92.36	93.55	97.54	101.23	103.46	104.92	99.2
Luxembourg	(not available)								
Netherlands	21.67	19.39	20.50	21.92	24.20	24.97	25.33	25.28	25.7
Portugal	4.95	5.15	5.36	5.58	5.69	6.00	6.30	6.58	8.5
Spain	37.45	37.37	35.57	40.79	46.62	51.35	55.62	58.70	55.5
United Kingdom	50.44	53.83	55.80	62.29	66.75	68.89	68.73	62.27	53.2
Total EC 12*	477.43	460.85	449.60	477.23	503.53	527.90	545.56	550.98	516.9
Austria	17.83	16.85	17.37	18.35	19.35	20.11	21.26	22.50	24.5
Finland	14.44	16.01	15.64	15.41	16.95	19.50	19.20	17.22	10.6
Norway	11.38	11.57	11.60	13.73	13.68	11.65	10.16	10.03	9.3
Sweden	22.59	23.10	23.67	25.50	26.25	28.31	28.64	28.31	25.1
Switzerland	22.18	23.12	24.86	27.31	29.02	30.77	30.87	29.46	25.6
Total EFTA	88.42	90.65	93.14	100.30	105.25	110.34	110.13	107.52	95.1

NB: * Excluding Luxembourg.

1992 deflated to 1991 prices by 3%.

Totals are only indicative, since the statistical basis is different for different countries.

Source: Euroconstruct.

TABLE 4.2 - CONSTRUCTION MARKETS IN EC, JAPAN AND USA (1992)

(at 1991 prices)

Country	Size (Billion ECU)	% GDP	Trend
EC	520	10	Recent fall, after 3% 1985-89
USA	510	11	-1% pa since 1986
Japan	520	18	Recent fall, +10% pa since 1985

Source: WS Atkins estimates.

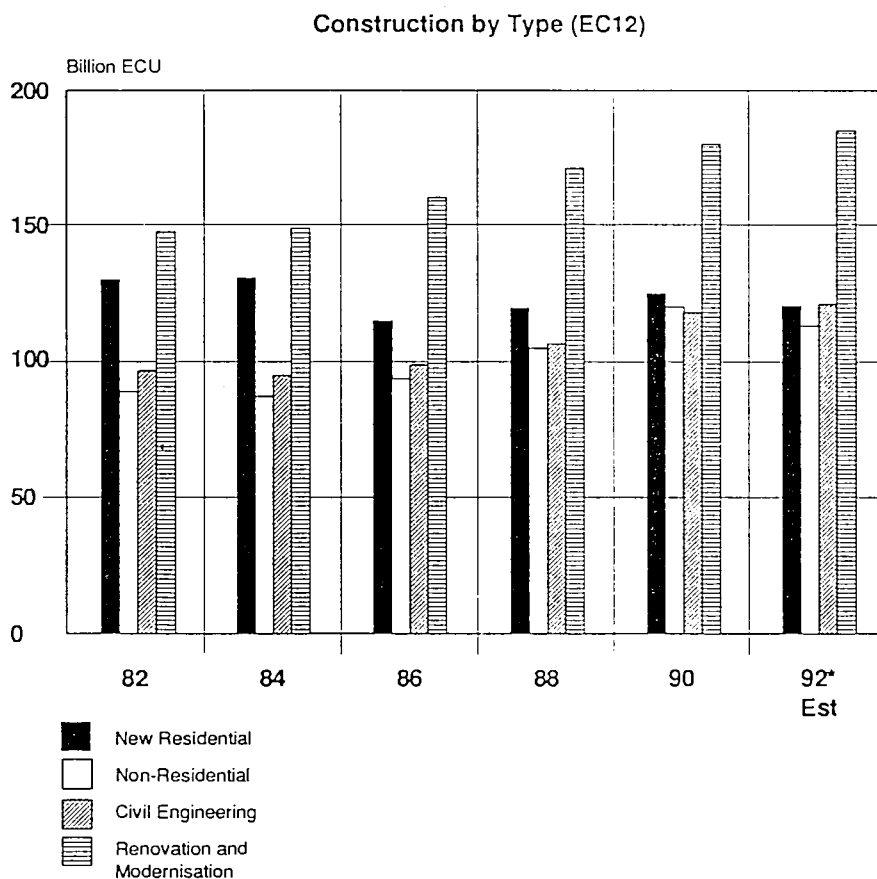
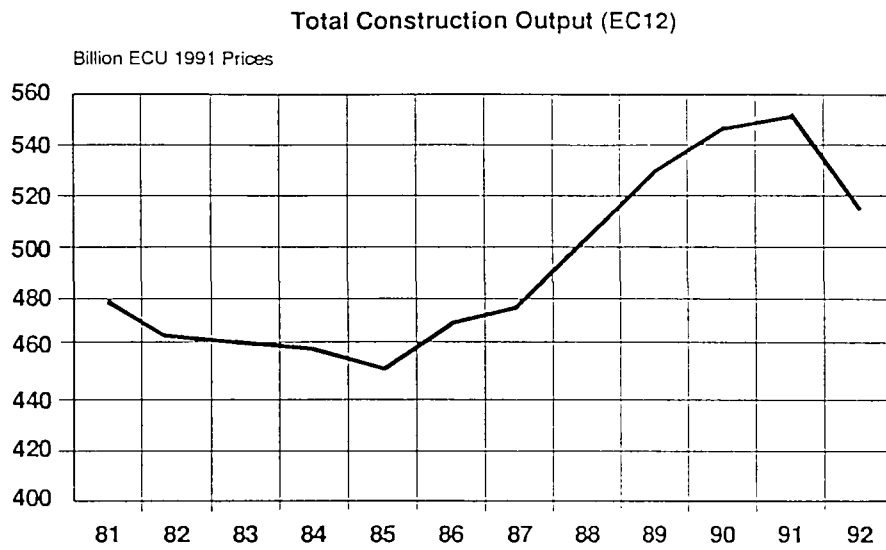
Chapter 4 - LONG-TERM MARKET SCENARIOS

Long-term Trends

- 4.1 Construction is a highly cyclical market. It suffers from the normal 4- to 5-year business cycle, but its own demand variability is greater than in most sectors because private-sector demand is dependent on investment by other sectors and it is highly sensitive to interest rates. In practice, prices are affected more than volume, because the construction permit system acts as a rationing mechanism, and the long gestation time of most projects means that queuing and delays have the effect of smoothing output variation.
- 4.2 In addition to the short business cycle, there are long-period fluctuations in demand which do have an obvious effect on output levels: these fluctuations are usually caused by wars and major political changes. In Europe's recent past there is a fairly clear long-cycle pattern, shown in Table 4.1 and Figure 4.1, which has dominated the medium-term business cycle. Although comparable data are not available pre-1981, various indicators (e.g. cement consumption) suggest that a peak of activity was reached in 1974, after which the oil crisis caused a slump in European construction (and a corresponding boom in OPEC countries) for a period of 10 years until about 1985. The recovery really began in 1987, coinciding with the period from the signing of the Single European Act and the accession of Spain and Portugal, and construction generally boomed until 1990/1. The downturn in 1991 is partly a cyclical reaction to the inflationary pressures of the boom and the stock of new empty properties. It also coincides with major structural change in world trade, caused by the end of the cold war, the break-up of the CMEA (Comecon) and the collapse of the centrally planned economies. The downturn coincides with a general recession in EC economies.
- 4.3 The long-term future is, as always in construction, uncertain. Within the EC, future growth will depend, amongst other things, on the speed of convergence towards monetary integration and the constraints that convergence imposes on public spending, and on the success of national governments in managing the economies in this period of transition. The greatest uncertainties arise from the influence of external factors on the EC economies. These could include, amongst other things, the economic and security situation in the former Soviet Union, consequent immigration from the east, the speed of recovery in central and eastern Europe, the success of GATT, and the effect on world trade of economic development in Japan (which is faltering) and South China (which is booming).
- 4.4 This chapter looks at some of the more predictable influences on construction demand in the medium to long-term. It first looks at 'needs', which represent suppressed demand, and then at economic factors affecting investment decisions and financing, which determine the effective demand for construction.

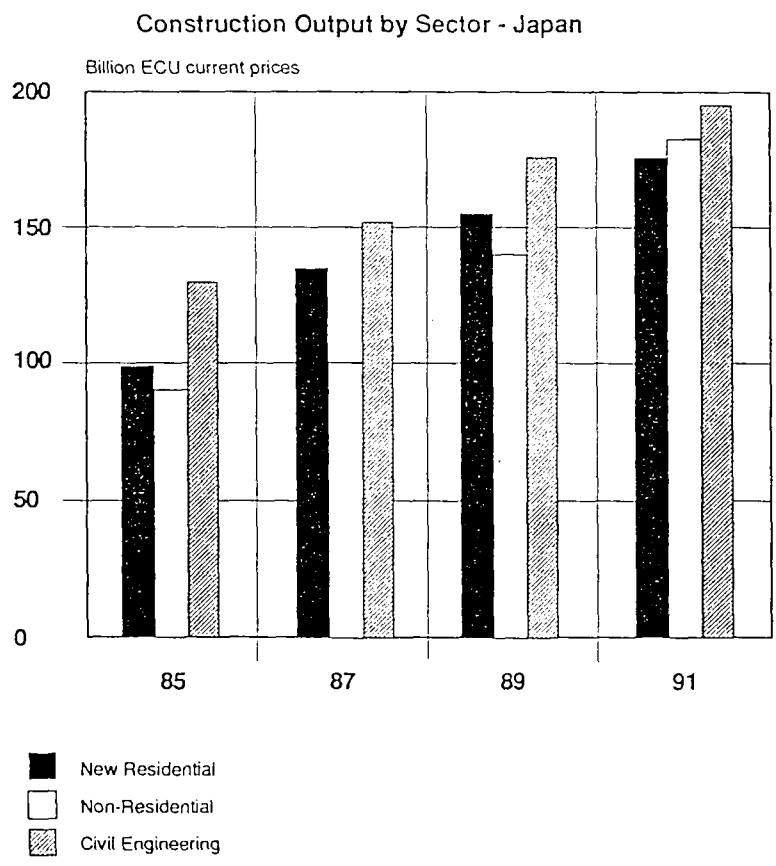
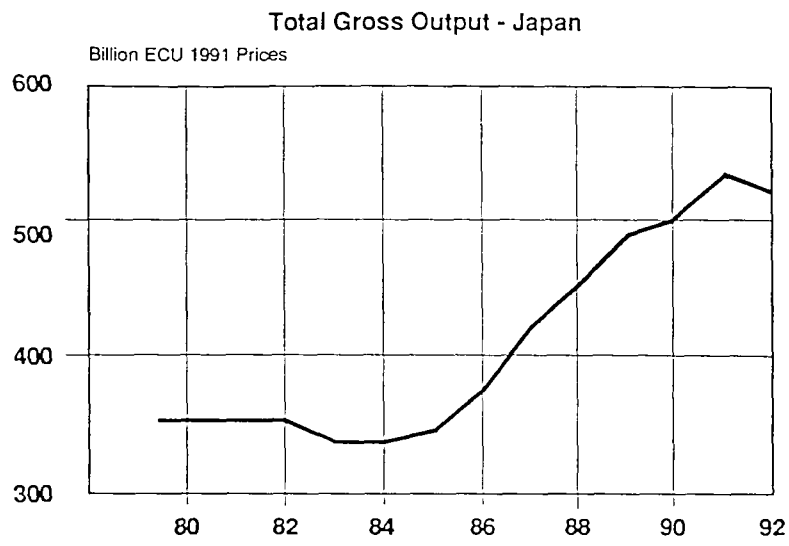
Market Size and Relation to GDP

The EC market for construction is estimated from Euroconstruct figures at ECU 520 billion per year at 1991 prices. This is equivalent to 10% of GDP (but construction output in value-added terms, that is the net output of contractors, is about 5-6% of GDP). These figures may understate the repair and maintenance, DIY and 'black' elements of the total. Table 4.2 compares EC, US and Japanese markets.



Source: Euroconstruct

Figure 4.1 Construction Output, EC12, 1981-1992



- New Residential
- Non-Residential
- Civil Engineering

Source: Research Institute of Construction and Economy

Figure 4.2 Construction Output - Japan 1985 -1991

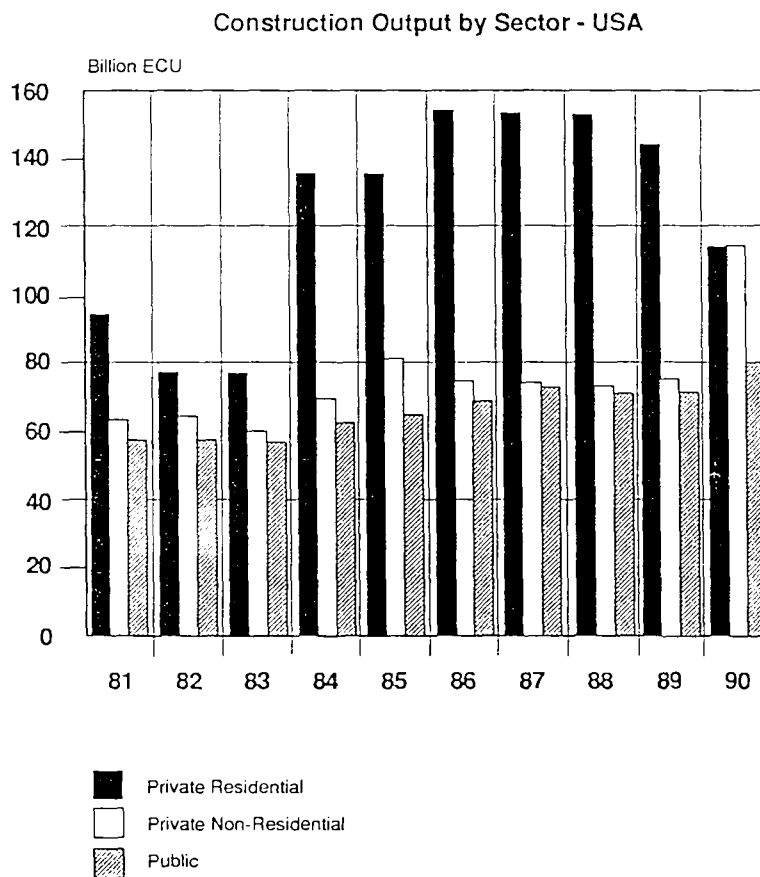
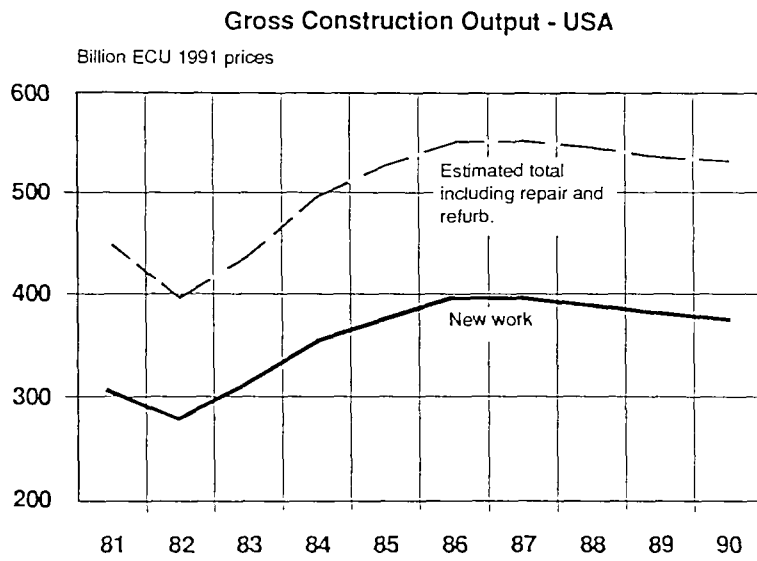
- 4.6 Construction output in Japan is of about the same value as in Europe (but prices are generally believed to be higher than in Europe, suggesting lower physical volume of output). Japanese gross output rose steadily after 1985 from 15 to 18% of GDP, and construction output per head of population, at over 4 000 ECU is 2.5 times as high as the EC average (Figure 4.2). Japanese construction demand faltered in 1992 as the economic growth fell. The government instituted a policy of major public works investment to help economic recovery, but construction output still declined in 1993 (partly due to delays in placing contracts because of a series of corruption scandals).
- 4.7 The US construction market is also of a similar size to that of the EC and has recently been overtaken by Japan. The gross value of construction was 11% of GDP in 1992. US construction markets have been declining since 1986 as shown in Figure 4.3.
- 4.8 Construction intensity (as a share of GDP) has been lower in the EC than in EFTA countries throughout the 1980s. Recently, construction output has been falling in the Scandinavian countries so the gap between EFTA and the EC in construction intensity has narrowed. Nevertheless a big difference remains, as Table 4.3 shows. In terms of construction output per capita, the differences between European countries are most marked: in 1992 these range from 314 ECU per head in Greece to 3 700 ECU per head in Switzerland. The EC average is 1 570 ECU and the EFTA average 2 900 ECU in 1992.

TABLE 4.3 - CONSTRUCTION INTENSITY, EC, EFTA, USA AND JAPAN (1992)

	(ECU)			
	EC	EFTA	USA	Japan
GDP/head	15 500	18 850	17 460	22 100
Construction output per head	1 569	2 896	1 940	4 062
Construction as % of GDP 1989	10.1	15.4	11.1	18.4
GDP/head	15 030	21 290	20 720	23 280
Construction output per head	1 763	3 698	2 357	4 316
Construction as % of GDP	11.7	17.4	11.4	18.5

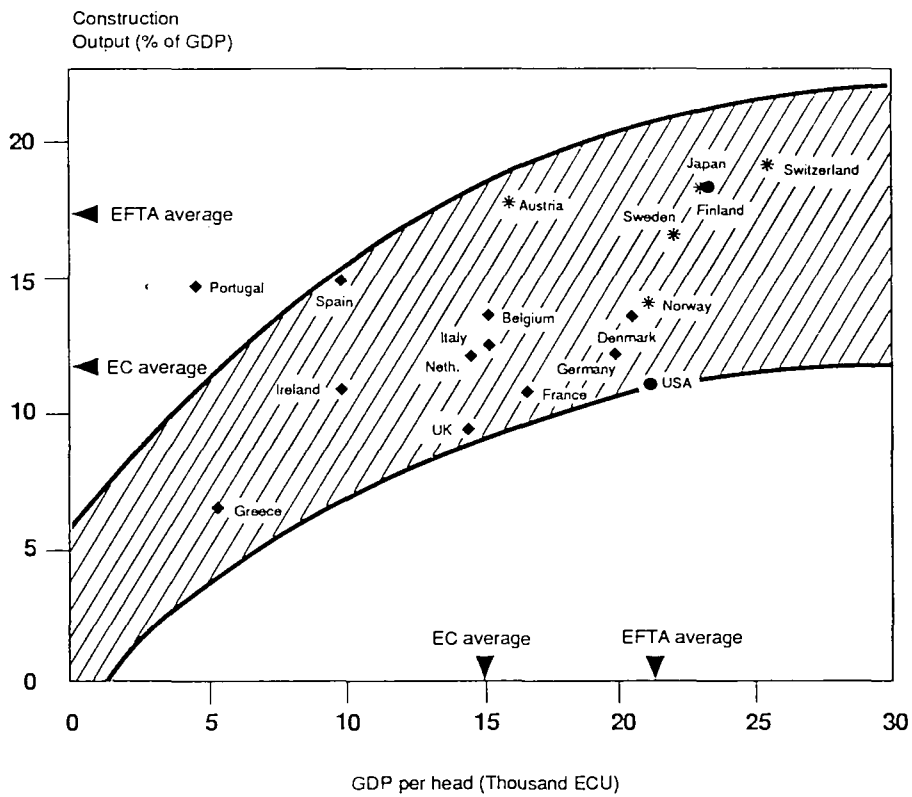
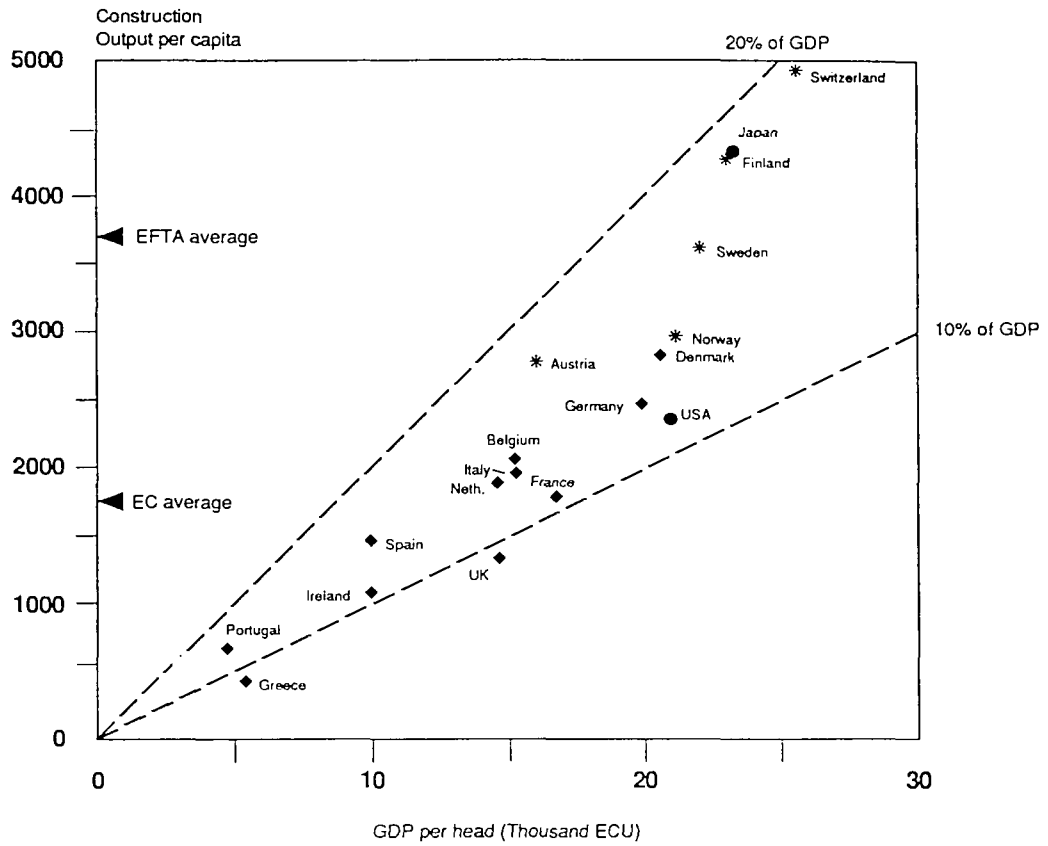
NB: Data in current ECU, but at constant 1991 domestic prices.

- 4.9 The European data suggest that higher levels of construction per capita and per GDP are associated with higher living standards. These data are illustrated in Figures 4.4 and 4.5, which very clearly show not only increasing construction output per head as incomes rise but also an increasing share of construction in GDP. Certainly higher construction intensity is likely to be associated with higher saving and investment ratios and higher economic growth. On the other hand, the colder, mountainous countries of EFTA and northern Europe require much higher costs of construction to meet basic needs: a family house or a road link costs more in Switzerland than the south of France, increasing GDP but not standards of living.
- 4.10 There is clearly no indication from these data that as EC infrastructure is 'completed' new construction demand will decline. In fact, countries with higher levels of infrastructure stock also have high levels of construction output. A simple 'thought experiment' will illustrate this. What will the world look like in 1 000 years' time? Additional needs for food, clothing and personal services decline with increasing consumption, and improving technology reduces the cost of production so that a smaller share of income is needed to satisfy demand for these consumption goods, but opportunities for development of the built environment are increasing. Science fiction worlds have elaborate cities,



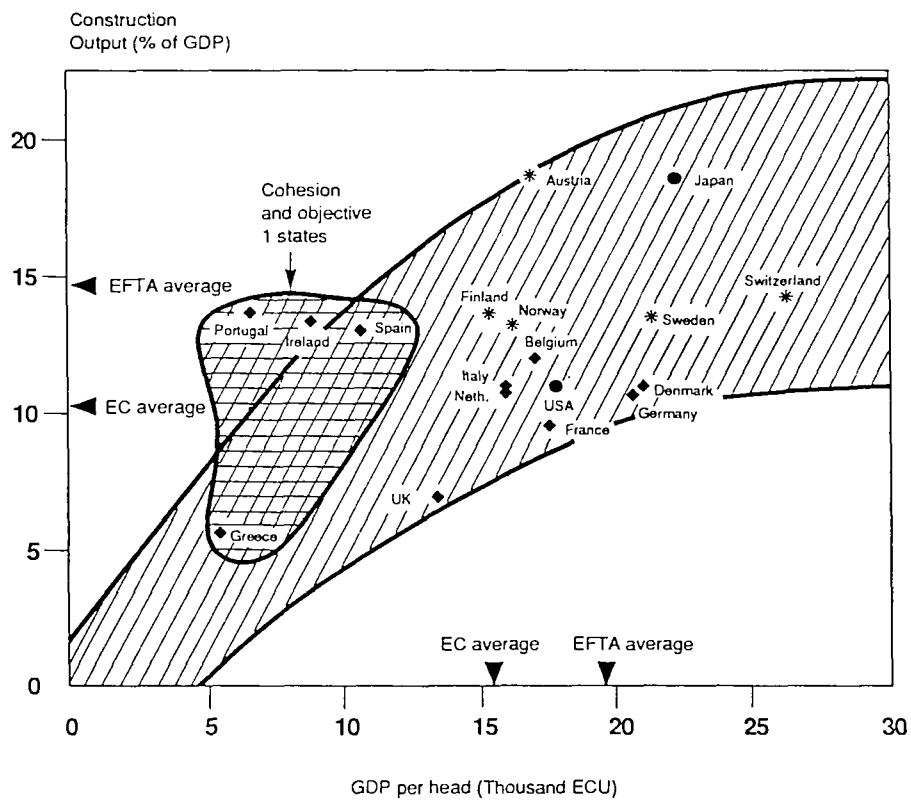
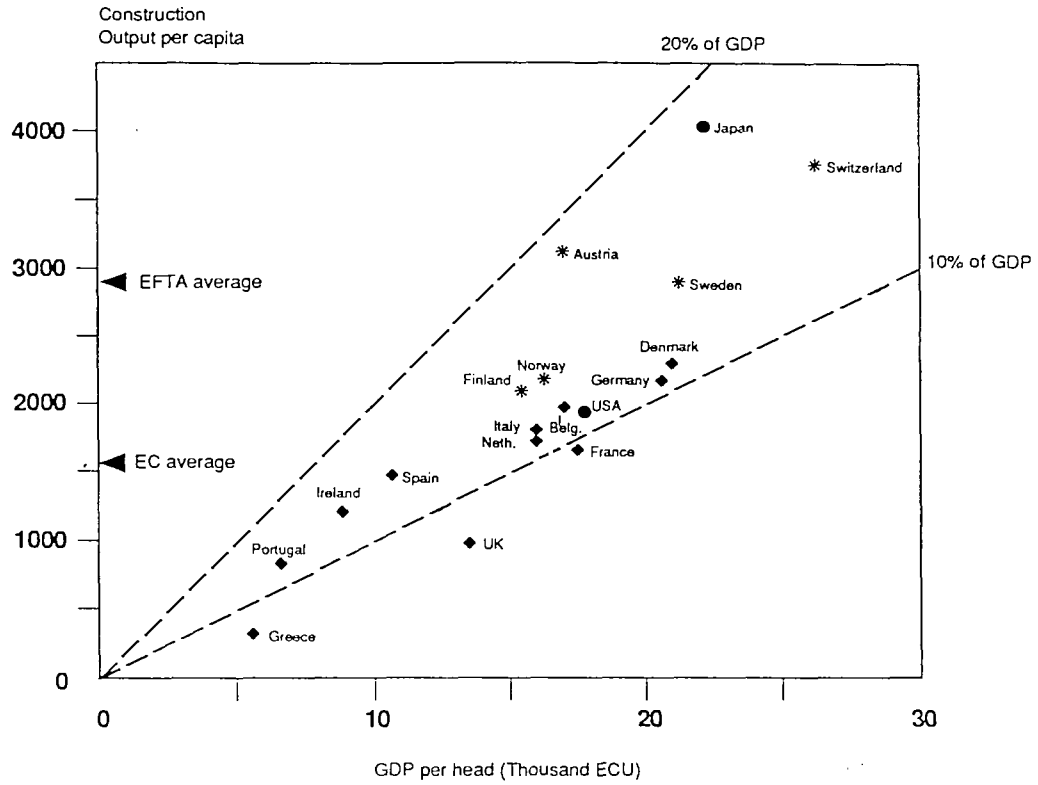
Source: US Department of Commerce

Figure 4.3 Construction Output - USA 1981 - 1990



Source: Euroconstruct, Eurostat and WS Atkins

Figure 4.4 Construction Output per Head and Share of GDP - 1989



Source: Euroconstruct, Eurostat and WS Atkins

Figure 4.5 Construction Output per Head and Share of GDP - 1992

transport networks, fixed networks of piped and wired services, and leisure facilities, including subterranean, subsea and outer-space habitats. The main growth industries in Europe over the coming decades are likely to be leisure, health care, travel, security and defence, and home improvements. All these require high levels of investment in construction.

- 4.11 Scenarios for future construction growth and employment are discussed later in this Chapter.

Trends in User Sectors

- 4.12 Figures 4.1 to 4.3 show the changing composition of construction output between residential, non-residential, civil engineering and repair and refurbishment. These data are only indicative because the definitions and the way data is collected vary between countries. In particular, there are two major problems with the data. Firstly, civil engineering is not well defined. (In UK official data until 1993 there was no category for civil engineering, which was included simply as public or private non-residential.) In most cases civil engineering output may be underestimated, since the roads and services for housing estates and industrial projects are usually classified as building. Secondly, repair and refurbishment is not always separately identified and tends to include a large 'black' component which may be underestimated.
- 4.13 The pattern in the EC over the period 1981 to 1991 shows a declining share of new housing, and a slightly increasing share of both non-residential and civil engineering (Table 4.4).

TABLE 4.4 - CHANGING COMPOSITION OF DEMAND, EC 12, 1981-91

(Billion ECU at 1991 prices and %)*

Activity	1981		1991	
	ECU bn	%	ECU bn	%
New residential	137	29	123	23
New non-residential	91	19	120	21
Civil engineering	99	21	123	23
Renovation and maintenance	150	31	185	33
Total	477	100	551	100

* Billion = 10⁹.

Source: Euroconstruct data.

- 4.14 Surprisingly, renovation and maintenance has only increased slightly, whereas most analysts expect R&M to take an increasing share in future. However, the definition of renovation is imprecise: many inner-city redevelopments are really new construction but preserving a historic façade or parts of existing buildings. In the very long-term the share of repair and maintenance ought to decrease, as increasing initial quality and level of specification lead to reduced maintenance and long life. There is still a huge need for renovation of buildings in European cities, and a large market in existing buildings for energy conservation improvements, so this part of the market may grow. If general renovation and maintenance grows significantly in the long run, however, it would be a sign of the failure of the industry to improve quality and performance and so win customers for new build rather than refurbishment.
- 4.15 Civil engineering grew steadily as infrastructure was improved. In the regions which benefit from the structural funds it grew very quickly in the 1988 to 1991 boom years. The present share of civil engineering varies from 15% of construction in the Netherlands and Belgium to over 30% in Spain and Denmark (but these may be underestimated for the reasons described above).

Infrastructure Stock and Construction Needs

- 4.16 Overall, there are enormous needs for infrastructure investment in Europe, and in most areas there is a problem of housing quality or housing stock. These must be growth areas. Commercial property needs are weaker. The needs of these sectors are summarised below. The final part of this chapter will consider the factors which determine effective demand to enable these needs to be met.
- 4.17 *Housing:* Statistics show a small excess of dwellings over households in almost all countries, but there are large numbers of households with poor housing conditions and there is a continuing concern in most countries about a housing problem. Because people's housing expectations rise in line with their ability to pay, it is to be expected that there will always be a proportion whose needs are not met. Because of population movements (rural-urban migration in Iberia; inner city to commuter belt in richer areas; de-industrialising north to high-tech south in the UK and France) the housing stock is not in the right place. The number of households is increasing as household size gets smaller. Large numbers of rural and inner city dwellings in the less advantaged regions are substandard. Many older houses everywhere need modernising and energy efficiency improvement. There is a particular need perceived in most countries for affordable housing of an adequate modern standard.
- 4.18 *Commercial and industrial buildings:* In most cities there is now a surplus of office and commercial space, but still a large need for upgrading offices to suit modern IT-based work practices, and improving shopping areas. Many industrial and commercial buildings are energy-inefficient and need upgrading. Additional needs for new commercial building stock will be mainly in the developing regions, but there will always be new needs to meet changing business requirements and locations of economic activity.
- 4.19 *Transport infrastructure:* There are increasing needs for investment in transport infrastructure, to cope with increasing trade and movement of people in the single market, to reduce the cost of transport to European markets from the peripheral regions, to promote development and cohesion in the less developed regions, and to reduce the increasing problems of congestion and air pollution in cities.
- 4.20 All modes of transport have urgent needs. The emphasis in the near future will be on completion of European rail networks, and the development of a high-speed railway network. Nevertheless, the largest volume of expenditure will be on upgrading and maintaining the road systems, and there are still major motorway programmes to be completed. There are important missing road links, particularly across the Pyrenees and the Alps, and to Portugal, Ireland and Greece. Major new road corridors are also needed to link up to East European centres, and the whole of eastern Europe has huge road building needs. There will also be increased air traffic, needing development of the single European system of air traffic control, and many new airport developments. Further investment in ports and inland waterways is being planned.
- 4.21 The European Commission is taking an active role in the strategic planning of major EC transport infrastructure, and also in planning the links with eastern Europe. There will be EC financing from the structural funds, the EIB and for eastern Europe from the aid funds such as PHARE and TACIS.
- 4.22 Car ownership continues to grow rapidly even in the richer EC States (except Denmark). The poorer States will continue to catch up in car ownership. Transport infrastructure and the superstructure of towns will have to be improved for several decades to cope with the motorcar, but for the longer term there will have to be massive investment in improved public transport and

people-movers. This may be supported by increasing taxation on fuel and cars and increased application of road-user charging which will help finance infrastructure and public transport systems.

- 4.23 *Telecommunications:* It is expected that there will be a rapid increase in telecommunications investment in the next two decades, both to bring the peripheral regions up to the level of the centre, and to cope with the demand for new value-added services, mobile communications and ever increasing electronic data interchange. Most of the direct investment is in equipment, but it will generate construction work in cable networks, and in upgrading of buildings.
- 4.24 *Energy:* The emphasis of energy-related investment for the next two decades will be on energy conservation, and reduction of pollution from existing energy sources. There has been a long period of little investment in new power-stations in Europe: investment is likely to continue on a low but probably increasing level, particularly for replacement of older stations by cleaner energy-efficient stations (including gas-fired stations). The main energy investment will be in extending the networks of gas pipelines and power transmission networks and their interconnection.
- 4.25 A major source of new construction industry demand will come from the rebuilding or decommissioning of nuclear power-stations. In western Europe many nuclear stations are now reaching the end of their useful life and will need replacement in the next decade. More importantly there is an urgent threat to public safety caused by the nuclear stations in the newly emerging democracies of eastern and central Europe. Solving this problem will require a major focus of western aid resources. In many respects the technology for dismantling and disposing of the materials from these stations does not exist. In addition, the size of the civil engineering problem for nuclear waste recycling and radioactive waste repositories, likely to involve deep underground construction, is enormous.
- 4.26 In the longer term new alternative energy sources will become important. Wind, wave, tidal and solar power have not often been viable up to now because they have very high capital costs - largely construction - but low or zero fuel and manpower costs, and because R&D which would bring down costs has not been funded on as large a scale as, for example, nuclear power.
- 4.27 *Water:* Total water use is likely to grow, but more slowly than in the past as irrigation and industrial uses are conserved: nevertheless, average household consumption varies enormously between regions and is likely to continue to increase as living and housing standards rise. Recent problems of drought and flood, and past lack of investment in several Member States, will lead to increasing investment in water collection, transport and storage. Enforcement of EC water quality directives will require increasing construction of water treatment. The environmental legislation and municipal waste water directives will require continuing increases in waste and effluent treatment for at least the 20-year horizon of this study.
- 4.28 *Other Environmental Needs:* Waste disposal and contaminated land are further important sources of future construction work.

Demographic Factors

- 4.29 The population of the EC has been growing slowly in the past and is projected to increase by 2% per year to 2000 and then to begin to decline. The future level of migration, however, is an unknown: it is expected that there will be increasing pressure for immigration from both the Third World (ex-colonies and

north Africa) and from the CIS and eastern Europe. Immigration policy may well be conditioned by the ability of the housing and social infrastructure to absorb immigrants, and conversely the level of immigration will influence the pattern of demand for housing and infrastructure.

- 4.30 Average household size is likely to continue to fall, perhaps from the present average of 2.7 to the more typical 2.6 of rich countries, thus increasing demand for dwellings, particularly in multi-dwelling buildings and complexes for singles and childless households. More significant, however, is the changing age structure. The number of older people will increase rapidly after the year 2000, creating increasing demand for sheltered accommodation, and for communities which are designed around an urban structure with minimal transport needs and small local nuclei of social infrastructure (shops, medical facilities, recreation), in amenable locations, possibly far from the main urban and industrial centres.

Regional Patterns of Development and European Union

- 4.31 The EC structural funds, soon to be augmented by the Cohesion Fund, will be the main determinant of future regional patterns of growth and construction demand. Without such regional policy, however, it is likely that disparities would increase. As long as the structural funds increase, there should be rapid construction growth in the Objective 1 regions - but problems of absorption in Greece and the government deficit problem in Spain may restrict the growth in those countries for the next few years.
- 4.32 The total volume of financing from EC funds is very significant. For the 1994-99 period ECU 141 billion are allocated to the structural funds, of which ECU 96 billion will go to Objective 1 less advantaged regions, mainly for infrastructure projects. The Edinburgh growth initiative provides a further ECU 8 billion. The Cohesion Fund agreed by Member States as part of the Maastricht Treaty will add a further facility, yet to be agreed. EIB loans within the EC, which are largely related to infrastructure, run at about ECU 12 billion/year. It can be assumed that around ECU 100 billion of EC funds will be available for infrastructure, or ECU 20 billion/year. If it is assumed that the average EC component is 50% of total project funding, the EC funds will in effect influence about ECU 40 billion per year, or about 30% of the ECU 125 billion/year of civil engineering expenditure.
- 4.33 At the time of finalising this report, the European Commission was preparing a White Paper on Growth, Competitiveness and Employment which emphasises the importance of infrastructure, and reaffirms Community priorities for trans-European networks and support for infrastructure investment. The allocation of funds to the growth initiative may be increased.
- 4.34 The changing pattern of regional growth is illustrated in Figure 4.6, based on analyses done by DATAR, the French regional development research agency. The main growth will be in the Objective 1 regions; nevertheless, the absolute size of markets in Portugal, Greece, Ireland is tiny, and Spain is also relatively small. The main markets will continue to be in the backbone of Europe (the banana-shaped region from south-east England, through western and southern Germany, to northern Italy) and the growing sunbelt region from the northern Adriatic along the mediterranean France and Catalonia. There is some evidence of convergence of per capita incomes in the EC regions, but recent evidence shows that overall disparities have not changed much.
- 4.35 Economic reform in eastern Europe, with increasing levels of aid to that region and the prospect that the Czech and Slovak Republics, Hungary and Poland will join the EC in future, are raising the needs for infrastructure in those

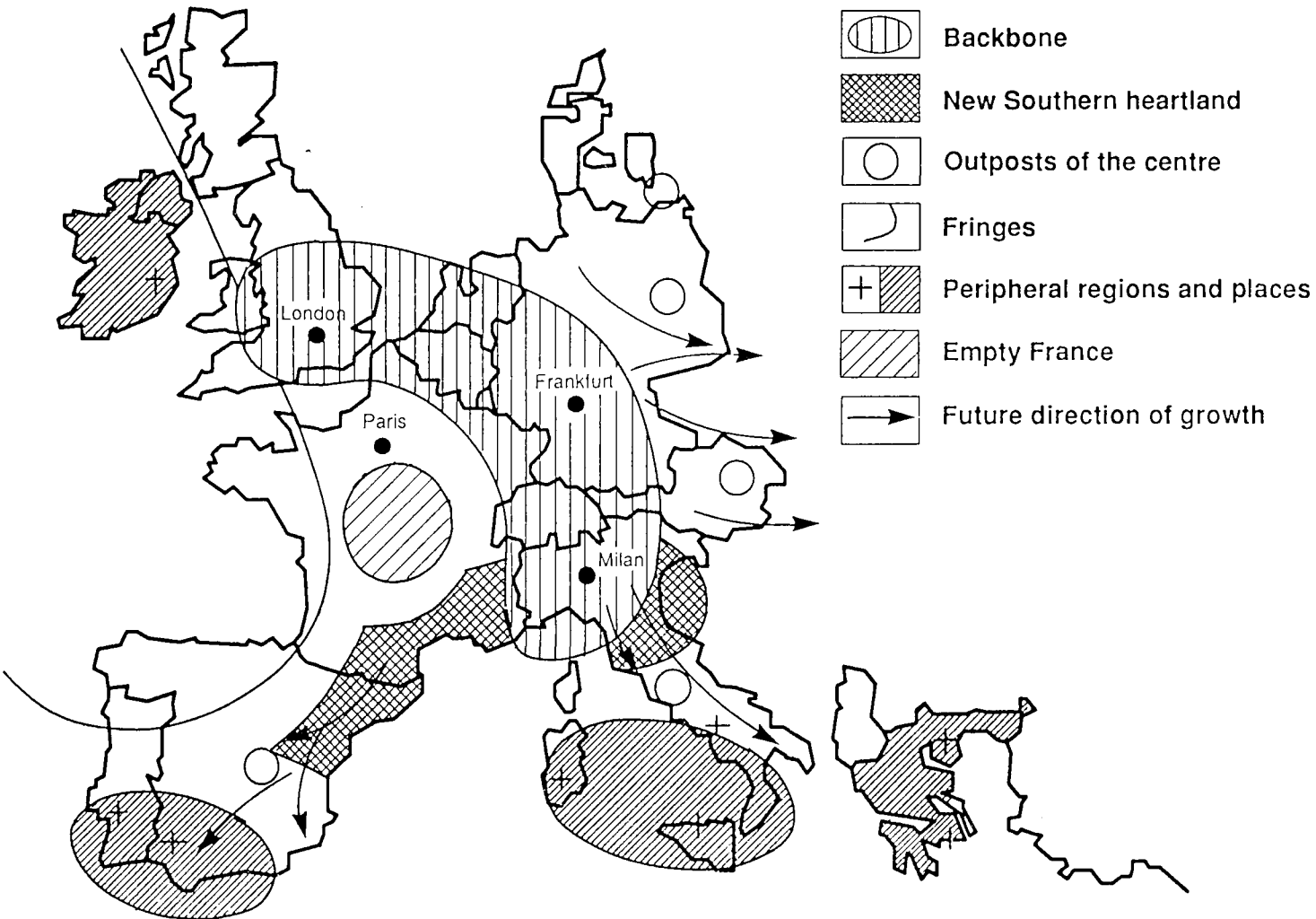


Figure 4.6 Patterns of Regional Development in Europe

countries and transport links to them. This is pulling the focus of development towards them. In the short-term the collapse of CMEA markets has led to a collapse in construction. In the medium to long-term, their reform programmes, and the prospect of their accession to the EC, will increasingly divert investment in industry and infrastructure away from the developing regions of the Community of Twelve. Their eventual accession would also divert structural funds to them. These countries have a large capacity for construction, with ample experience in managing large projects, but their technology is often outdated and the work practices of their labour force are unproductive. In the short to medium term, therefore, their integration into the western economy would tend to depress European construction markets without offering a large new market for EC firms; in the longer term, they will be a large market for the better western firms who can compete on quality or technology, but also powerful new competitors in low-cost building and basic infrastructure.

- 4.36 The accession of Austria, Sweden, Norway and Finland to the EC, expected in 1995, will bring in countries which will make a net contribution to EC funds and hence help increase regional development. These countries, however, have construction markets which have been in decline for several years, and they have powerful contractors who are strong competitors for the existing EC industry.
- 4.37 The regional development and cohesion effects of the Maastricht process have a strong positive impact on construction demand, but monetary integration if followed according to the Maastricht programme is likely to have a dampening effect on the level of construction demand. The convergence process, by which Member States must achieve budgetary deficits, debt and inflation levels within strict limits, will restrict the ability of States to increase public spending. These restrictions are most likely to affect public building and infrastructure programmes. It may also restrict the freedom of governments to carry out an economic recovery policy, since social security payments are higher in the recession and this tends to squeeze infrastructure spending. These problems are taken up below (para 4.45 *et seq.*). We argue that these pressures must be overcome, with public spending on infrastructure maintained at high and steady levels, to minimise fluctuations and to maintain growth.

Other Factors Affecting Construction Needs

- 4.38 Changes in industrial structures over recent decades, particularly the decline of steel, shipbuilding and coalmining, have led to new construction demand as a result of migration to new growth areas and rise in service industries, and at the same time a severe (unsatisfied) need for urban regeneration in the declining regions. Such changes will continue to occur. Possible future declining industries could include the automotive industry and European currency dealing. In future, however, the more sophisticated regional policies of the EC (and free market industrial policies) now in place will permit more rapid and efficient responses to such changes than occurred over the past few decades, and will convert construction needs into construction demand more efficiently.
- 4.39 There is continuous rationalisation of industries leading to plant closures, re-investment and relocation, which will be accelerated by EC integration. The EC is also becoming a more attractive target for inward investment by global, particularly Japanese, firms. These changes in the economic structure and consequent migration stimulate new construction needs. The growth of new industries will generate these needs - IT industries and leisure and tourism have been major sources in the recent past. There will be other growth industries in future, not all of which can be predicted now.

Environment

- 4.40 The impact of environmental issues is perhaps the most uncertain influence on construction, but new environmental requirements will generate new construction demands. This is discussed in Chapter 9. On the negative side, costs will increase in quarrying and the energy-intensive steel, cement and brick industries but this will increase the gross value of construction demand, since demand is relatively inelastic.
- 4.41 There will be a higher cost to transport and travel which would, other things being equal, reduce the demand for transport infrastructure - but this is likely to be insignificant compared to the increased demand for transport as a result of increased trade, rationalisation of industry and services, increased human mobility and increasing living standards.
- 4.42 Increased environmental awareness and legislation will require higher performance and product standards in buildings, for example for energy conservation standards, particularly passive design concepts; for elimination of non-toxic and non-polluting materials; and demand for healthy and non-allergenic buildings. Passive design in particular increases the structural elements of building at the expense of heating and ventilating equipment. All these effects will to some extent increase demand for new and improved buildings.
- 4.43 There will be new demands for recycling, waste and effluent treatment, land reclamation, landscape engineering and other services which will increase construction demand. The problem of nuclear waste and nuclear decommissioning mentioned above is alone a major source of new demand.

Overview of Long-term Tendencies

- 4.44 Socio-economic change generates new construction needs. These are uncertain and changing times world-wide and especially in Europe. Some of the long-term factors affecting construction demand discussed in this chapter are summarised below.

Factors tending to increase construction needs:

- European integration and the need to complete the transport networks;
- increased perception of the importance of the built environment;
- rising per capita incomes and housing expectations;
- concern for a healthy environment and healthy buildings;
- immigration;
- smaller family units;
- age structure: increased healthcare, leisure and sheltered housing;
- migration to more favourable climatic or economic locations within the single market area;
- declining relative share of income on consumption goods, such as vehicles, food, clothing and consumer durables, which will permit a higher proportion of disposable income to be spent on construction;
- public transport needs because of congestion, and the environmental impact of cars;

- environmental needs: for investment in water supply, waste treatment, energy saving buildings, landscape restitution;
- industrial restructuring, rationalisation, and relocation;
- urban regeneration combined with decentralisation into smaller urban centres;
- information technology and telecommunications needs of new buildings;
- increased world development in a new post-Cold War era, creating new export opportunities (but also a proliferation of local wars creating reconstruction needs).

Factors tending to decrease construction needs:

- population stabilisation and then decrease (perhaps offset by immigration);
- the present short-term saturation of commercial building in some cities;
- reduction in housing subsidies and introduction of free market policies in housing (although this is perhaps unlikely since most countries perceive a housing need);
- reduction in defence-related construction in Europe following the end of the cold war;
- reduction in journeys because of increasing energy costs and taxes, and increased telecommunications (but likely to be less important than the growth from trade and population movement in the single market).

Overall it seems clear that the 'needs' for construction will grow faster than GDP. In parts of the EC, notably Spain and the new *Länder* of Germany, the perceived 'needs' already far exceed the ability to finance them within a foreseeable time horizon.

Constraints on Demand

4.45 The share of construction in GDP ought to increase to satisfy these needs and to support economic growth and reconstruction. There is, however, a *demand crisis*. A large share of construction is still financed directly or indirectly from public sector revenues. (There are no statistics to show the exact share, and there is a large grey area of construction by publicly owned companies.) The share of publicly funded construction has been decreasing over the 1980s. Public expenditure is now being restricted because:

- tax revenues are declining as a share of GDP because the changing age profile, and structural employment problems, mean that there are fewer working taxpayers;
- public expenditure on social security, pensions and health is increasing because of higher structural unemployment and an ageing population;
- convergence towards monetary union requires governments to reduce deficits and inflation.

4.46 A number of factors may increase the financial resources available, relative to GDP:

- it is possible that an increasing share of household expenditure might be devoted to housing and commercial property in future (particularly in those parts of the EC which do not have high rates of home ownership);
- an increasing amount (from a negligible present base) of private-sector funding from the banking, stockmarket and direct private investment may be attracted into infrastructure projects; at present, however, we estimate that privately funded infrastructure is less than 1% of civil engineering output;

- privatisation of utilities will generate a larger amount of civil engineering from private-sector resources;
- a larger proportion of EC structural funds may go to construction rather than agriculture.

4.47 Overall, public expenditure on construction seems likely to fall because of budgetary pressures in all the major EC economies at least over the next 10 years particularly if the convergence process towards monetary union resumes in future, *unless* a deliberate policy is adopted to reverse this trend, and take measures to increase public funding of infrastructure, and stimulate private investment.

Demand Growth Scenarios

4.48 Future construction output growth, and hence its impact on employment and macroeconomic growth, depends upon the balance of complex macroeconomic factors, as well as on the performance of the construction sector itself. The macroeconomic factors include private savings and investment behaviour, the profitability of the private sector of industry, government budgets and expenditure commitments, and policy decisions about spending priorities. It is not feasible to model all of these interactions. This section describes a simple model of construction demand and employment scenarios, taking into account:

- future GDP growth,
- construction's share of GDP,
- productivity,
- trade.

4.49 Three scenarios are presented:

- Scenario A: high growth, high productivity improvement;
- Scenario B: historic growth and moderate improvements in productivity;
- Scenario C: low growth, no improvements in performance.

4.50 These scenarios are described below and the results set out in Table 4.5 and Figures 4.7 and 4.8. These are all credible scenarios. Much worse or much better scenarios could be envisaged. A disaster scenario is possible, with negligible growth in Europe and construction output falling to simple replacement levels. A short reflection on the results of these three scenarios, however, will quickly show that anything worse than the low growth scenario would be unsustainable, with spiralling unemployment, declining living standards and competitiveness, and ever more obsolescent economies, which would undoubtedly lead to political change and is not an option worth considering. Conversely, the 3.5% growth considered in the optimistic scenario is higher than average EC growth in the 1980s, but could be exceeded, at least for short periods, if the benefits of European union are achieved.

4.51 As a base point, it is assumed that at the EC level, the average growth in 1993 will turn out to be slightly negative. Present indications from the first half of the year are that it will be around 1% decline in GDP: but we assume the final outturn could be between zero and 2% decline. Construction output has fallen by 15 to 20% since the peak in 1990/91 and now stands at 10% of GDP, from a historical average of around 12%. There is negligible improvement in productivity (any improvements will be hidden by the effect of falling output), and relatively small net export work by EC contractors.

TABLE 4.5 - CONSTRUCTION GROWTH SCENARIOS

		1992	1993	1994	1995	1996	1997	1998	1999	2000	2005	2010
Hypotheses												
GDP Growth	C		-2.00	-1.00	0.00	1.00	1.50	1.75	1.75	1.75	1.75	1.75
	B		-1.00	0.00	1.00	1.75	2.25	2.50	2.50	2.50	2.50	2.50
	A		0.00	1.00	3.00	4.00	3.50	3.50	3.50	3.50	3.50	3.50
Construction as % GDP	C	10.0	10.0	9.0	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	B	10.0	10.0	10.0	10.5	11.5	12.0	12.0	12.0	12.0	12.0	12.0
	A	10.0	10.0	10.5	12.0	13.0	13.7	14.0	14.0	14.0	14.0	14.0
Productivity Index												
0 % change	C	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1 % change	B	100.0	101.0	102.0	103.0	104.1	105.1	106.2	107.2	108.3	113.8	119.6
2 % change	A	100.0	102.0	104.0	106.1	108.2	110.4	112.6	114.9	117.2	129.4	142.8
Net Export of Construction Activity	C		0.0	-1.0	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
	B		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	A		0.0	1.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Results												
GDP (1992=100)	C	100.0	98.0	97.0	97.0	98.0	99.5	101.2	103.0	104.8	114.3	124.6
	B	100.0	99.0	99.0	100.0	101.7	104.0	106.6	109.3	112.0	126.7	143.4
	A	100.0	100.0	101.0	104.0	108.2	112.0	115.9	120.0	124.2	147.5	175.1
EC Construction Demand	C		98.0	87.3	82.5	78.4	79.6	81.0	82.4	83.8	91.4	99.7
	B		99.0	99.0	105.0	117.0	124.8	128.0	131.2	134.4	152.1	172.1
	A		100.0	106.1	124.8	140.6	153.4	162.3	167.9	173.8	206.4	245.2
Constr. Output Inc. Trade	C		98.0	86.4	80.8	76.0	77.2	78.5	79.9	81.3	88.7	96.7
	B		99.0	99.0	105.0	117.0	124.8	128.0	131.2	134.4	152.1	172.1
	A		100.0	107.1	127.3	144.9	158.0	167.1	173.0	179.0	212.6	252.5
Employment in Construction (million)	C	9.0	8.8	7.8	7.3	6.8	6.9	7.1	7.2	7.3	8.0	8.7
	B	9.0	8.8	8.7	9.2	10.1	10.7	10.8	11.0	11.2	12.0	12.9
	A	9.0	8.8	9.3	10.8	12.0	12.9	13.4	13.6	13.8	14.8	15.9

A = construction boom; B = likely; C = pessimistic

Source: WS Atkins

4.52 Scenario A: high growth and productivity (the desired but optimistic scenario) assumes:

- *GDP*: Strong and successful short-term growth strategies by EC governments, bringing growth rapidly above the long-term average (to 5% by end 1995) as the spare capacity in the economy is taken up. Constraints are reached after 3 years and growth falls back, but to a long-term average (ignoring future cycles) of 3.5%, which is higher than the last decade's average of around 2.5%. This will be made possible by increased competitiveness in the single market, with successful achievement of economic and monetary union, continuing rationalisation of industry, more efficient infrastructure, and rapid technology improvements particularly from IT applications. It also assumes a return to significant world growth, with rapid growth in eastern and central Europe, stability and restructuring in the former Soviet bloc, a successful GATT regime, and return to Third World development.
- *Construction share*: Higher growth requires higher gross fixed investment, and so higher levels of construction. We assume it will grow back past the historic 12% and continue to grow eventually to 14% of GDP. This requires positive action to increase financial resources, and to win a higher level of private-sector demand, but it would also mean a real increase in public investment in construction compared to the levels of the 1980s (offset by transfers of whole areas of expenditure from public to private sectors as a result of privatisation of utilities), since it is unlikely that increased private funding would be able to meet the increases required (see below). This would require a significant change in political priorities for expenditure.
- *Productivity*: This level of output puts pressure on employment. Employment conditions must improve, and productivity increase rapidly. This will require new technology and increased R&D, which are also needed to win more markets. Productivity is assumed to grow at 2% per year. This is purely an assumption: we have no good historic figures for productivity increase, but from 1983 to 1993 employment levels remained approximately constant while output increased by around 13%, implying an average increase in productivity of about 1.3% per year.
- *Trade*: The increased competitiveness in this scenario is assumed to lead to increased export work outside the Community for EC contractors and consultants: an additional net 3% of total gross output, equivalent to about 15% of the turnover of large and medium-sized contractors.

4.53 Scenario B: historic growth and moderate performance improvement (a likely scenario), assumes:

- *GDP*: Gradual return to historic average growth levels of 2.5% per year. This requires coordinated economic programmes of recovery, and a return to a reasonable level of world trade and international stability, but without assuming a large long-term benefit from the internal market and economic and monetary union.
- *Construction share*: The share of construction in GDP returns to its recent levels of 12%. This assumes that private demand, including privately financed infrastructure and the demand from privatised industries, can just compensate for the decline in public expenditure.

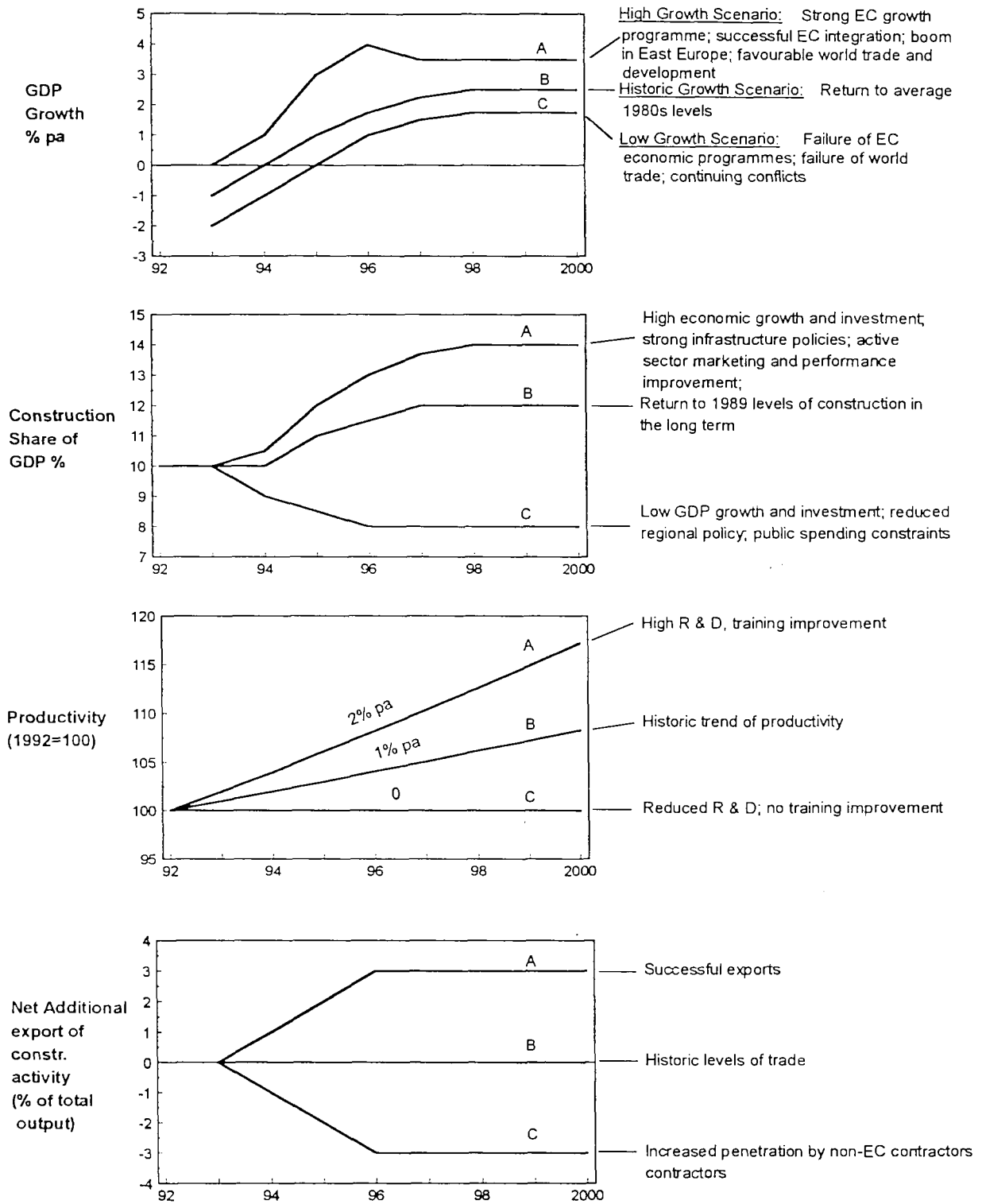


Figure 4.7 Hypotheses for Construction Growth Scenarios

- *Productivity*: This is assumed to grow at 1%, probably a little lower than over the last decade, assuming no significant improvements in the systems of research, development and innovation, but a continuation of the fairly rapid rate of innovation achieved in the recent past.
 - *Trade*: Neither increased exports nor import penetration is assumed.
- 4.54 Scenario C: low growth and low performance improvement (a pessimistic scenario) assumes:
- *GDP*: A poor world trade and economic situation, failure to institute a coordinated recovery programme in the Community, and no benefits from the single market. So a slow return to low growth rates, reaching a steady 2% in the late 1990s.
 - *Construction share*: With low growth, the level of investment will be low and construction output will fall below the levels of the 1980s, to levels similar to the lowest levels in the Community, around 8% of GDP.
 - *Productivity*: With construction levels below those of the recent past, declining employment and excess capacity, profits squeezed and low recruitment and training, this scenario assumes no improvements in productivity and performance.
 - *Trade*: Increased penetration of the EC market by low-cost contractors and workers from outside the Community, and lost competitiveness of the EC in export markets, leading to a net 3% decline in export trade (although in a less pessimistic scenario, declining home markets could lead to increased export effort by contractors).
- 4.55 Figure 4.7 illustrates the assumptions for each scenario. Figure 4.8 then illustrates the results.
- 4.56 In the *high growth scenario*, construction output grows quickly, to pass 1989/90 levels in 1995, and double by the year 2005. Direct employment grows by 50% by the turn of the century, creating some 4 to 5 million new jobs in construction, and perhaps 13 million direct and indirect jobs throughout the Community (see Chapter 2). This level of jobs is comparable to the total level of unemployment in the EC in 1993 - about 15 million - and would almost be sufficient on its own to meet the target of halving the rate of unemployment, allowing for an increase in active population, by the year 2000 (again, about 15 million new jobs by 2000). From then on this scenario generates a further 1 million total new jobs per year, half of the total requirement of new jobs generation of 2% of the labour force.
- 4.57 The rapid growth in construction demand in this scenario is of course accompanied by a shift in expenditure away from other sectors (mainly consumption goods), and so a decrease in employment elsewhere. This would, however, be taken up by an increase in aggregate demand because of the rapid GDP growth. The growth in construction also implies a large increase in public expenditure on construction: if we assume that half of the increase in construction output will come from the public sector, it implies an increase of 2% of GDP in public spending - offset to some extent by reduced social security commitments.
- 4.58 These levels of job creation in the industry and its diverse suppliers will put real pressure on recruitment and training, and on research into the labour-saving

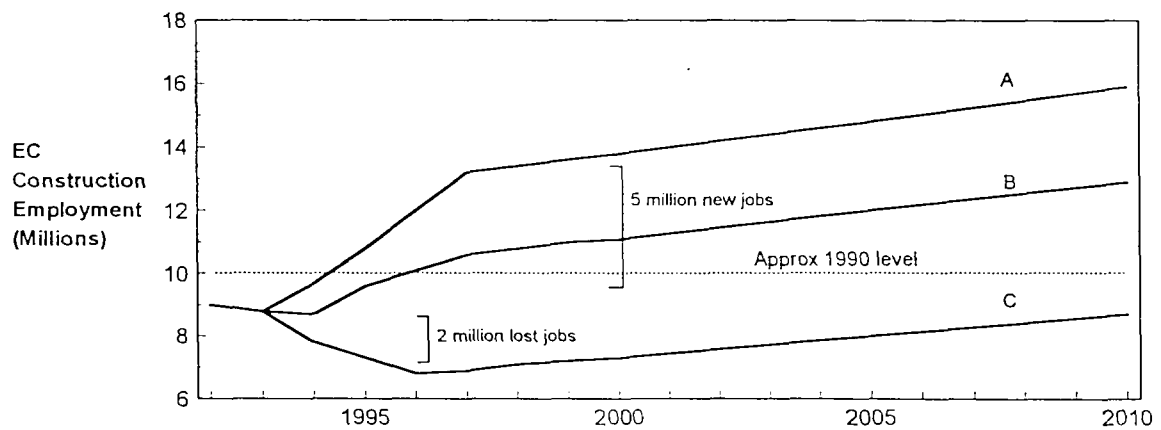
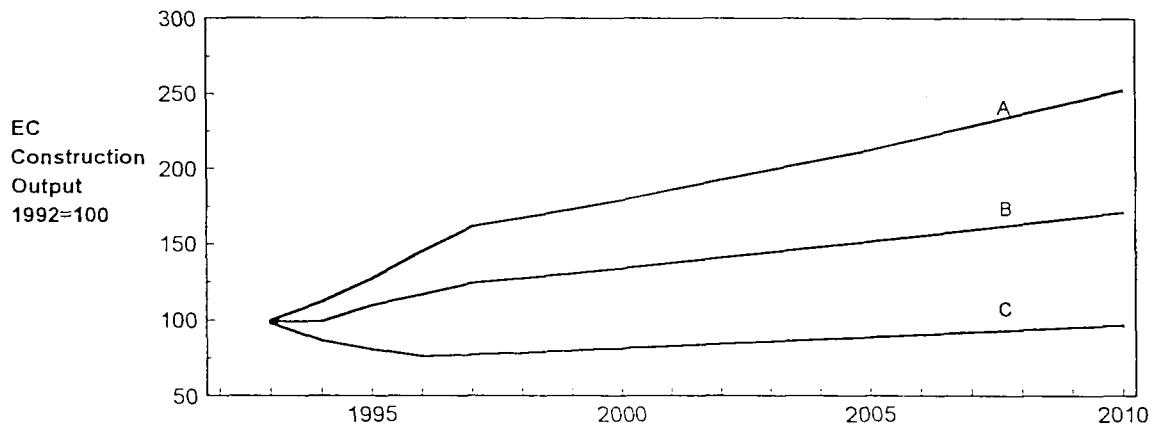
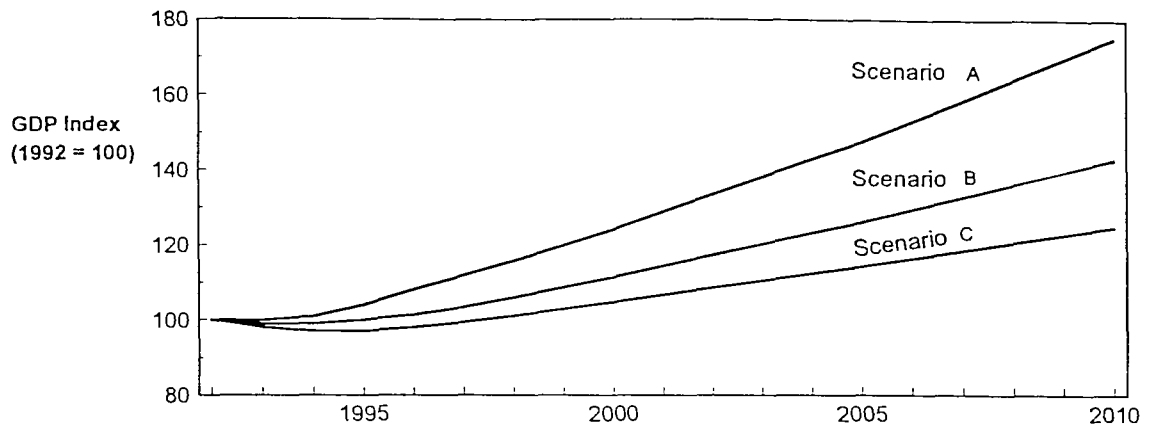


Figure 4.8 GDP, Construction Output and Employment Scenarios

technologies which are assumed in the scenario in order to achieve the increase in productivity which will help sustain demand. The proposals in Chapter 10 related to training and recruitment assume a very high priority, but all the supporting measures are also essential.

- 4.59 In the *historic growth scenario*, construction output returns to the 1990/1 peak levels by 1996/7 and reaches levels some 50% higher than 1992 by the year 2005. Employment falls a little at first, but some 2 million new jobs in construction are created by the year 2000, some 6 million in total throughout all sectors of the Community. This level of job creation is significant, and taken with growth in other sectors would contribute to meeting employment targets. It still requires short-term action to improve and increase training and recruitment. The level of construction demand is easily attainable, because it corresponds to historic levels, but the problem of public financing remains to be solved. Private demand must increase by about 2% of GDP if public expenditure does not rise. The actions relating to maximising private demand, and improving quality, innovation and performance to maintain a high level of demand, are all essential if this is to be achieved.
- 4.60 This scenario, however, assumes a low increase in productivity - below the levels of the 1980s. If productivity increased faster, the level of job creation would fall. Low productivity increases also mean a failure to achieve improvements in technology and in employment conditions, and will do relatively little to achieve the vision of the industry we set out at the beginning of this report, or to achieve the improvements in the standards of infrastructure, housing and urban environment which are needed. It is a 'status quo' scenario: avoiding deterioration, but not addressing the problems that construction can solve. Merely returning to the average levels of the 1980s, when construction output was for most of the decade at a low level, and economic growth in Europe was considered inadequate, would be disappointing and indicate a failure to achieve the benefits of the single market and European Union.
- 4.61 In the *low growth scenario*, construction output declines to below 80% of 1992 levels, some 30% below peak demand, and construction output never reaches 1992 levels in the 20-year horizon. Within the first 5 years, over 2 million direct jobs are lost in construction, 6 million or so in total in all sectors. Technology is assumed stagnant with no increase in productivity (if there were, job losses would be much greater). Construction output is basically renewing the existing stock without substantial improvements in the quality of life or in industrial competitiveness. We believe this scenario is unsustainable in the long run, although if none of the actions proposed in this report are implemented, and recent past trends in economic growth and construction output continue, it is most likely that the rest of this decade would see this scenario unfolding.
- 4.62 The objective of the strategies proposed in this report are to enable the construction sector to achieve the first scenario: that is the target. It also, we believe, coincides with European Community targets for economic growth and employment. But macroeconomic factors are of course outside the sector's control. The 'historic growth' scenario may be considered a prudent case for planning, but would be considered a disappointing outcome. None of the actions proposed in Chapter 10 would prejudice this case, and all would help improve demand and performance. The list of actions remains the same, but priorities would change, as indicated in the overview (Chapter 1): the sector would need to work harder to improve performance and promote demand. In the low growth scenario, highest priority would need to be given to promoting demand (through the measures outlined in the following section) and particularly to increasing public expenditure on construction, and promoting exports.

Strategies for Construction Market Growth

- 4.63 A number of strategic conclusions derive from the analysis. The critical problem is that unless positive action is taken by industry and government to increase the funds available for construction, there will be an increasingly acute crisis of infrastructure and housing as well as a serious impact on employment. EC living standards and the competitiveness of EC industry would suffer because construction demand and output would meet neither:
- the existing needs deriving from substandard housing and social infrastructure in inner cities and poorer regions; nor
 - the infrastructure needs of peripheral regions to promote growth and cohesion; nor
 - the increasing needs of new infrastructure and industrial and commercial building arising from the restructuring of industry and the increased trade and specialisation within the single market; nor
 - the need for infrastructure to stimulate investment in other sectors of the economy.
- 4.64 The low growth scenario illustrates the danger if, instead of the share of construction in GDP rising to meet the increased needs, it is squeezed by financial constraints. This would reduce the capacity of the construction industry, exacerbate cut-throat competition and further prevent the investment, research and development, and training which is so desperately needed in order to improve profitability both to meet and stimulate the increasing demand.
- 4.65 Action must therefore be taken to permit construction to grow faster than GDP and hence increase its share, to achieve the high growth scenario (Scenario A). This requires, above all, the political initiative to raise and maintain the level of public investment in infrastructure. Those countries with low levels of construction (which appear from the present data - which may not be comparable between countries - to include Greece and the UK) most need to increase construction output. The data for Ireland, Spain and Portugal show that structural funds and well-planned infrastructure programmes can be most effective in raising infrastructure investment.
- 4.66 Possible actions that could be taken to increase private construction demand include:
- speedy *privatisation and deregulation of utilities* - water supply, sewerage and waste treatment, electricity supply and distribution, gas distribution, coalmining, railways, airports, airlines, public transport undertakings, telecommunications - with pricing policies to permit adequate funds for investment in networks and facilities;
 - development of the legal and administrative mechanisms to facilitate public/private finance and private financing of infrastructure such as BOOT (build-own-operate-transfer) and similar processes;
 - privatisation of the construction, maintenance and management of *public buildings and facilities*;
 - removal of remaining *State aids* to inefficient industry to release public funds and to promote the restructuring which will create demand for infrastructure in the right sectors and regions;

- liberalisation of *rent controls* and similar constraints on private investment in the housing (and commercial) sectors;
- coordinated research and development of *technology* for electronic road-user charging, water metering and charging, and other technology to permit more privately funded infrastructure;
- a major research effort on development of acceptable *high-tech low-cost housing*, using factory manufacturing techniques (including low-cost housing for mobile higher-income households, not just 'social housing');
- a coordinated industry-led programme of *awareness campaigns* to promote the benefits of new energy efficient, safe, intelligent and healthy housing and commercial/industrial building. This would promote private investment in building, and encourage research and development in improved products, designs and factory manufacturing techniques;
- measures to reduce *land costs* by reducing the delays and cost of development by simplifying and clarifying *construction permit procedures*, at the same time as heightening environmental and architectural criteria and considerations, and introducing a higher degree of professionalism in planning and adjudication procedures;
- *longer-term land-use planning* to assure a continuous supply of appropriate categories of construction land, and the infrastructure to anticipate and promote private-sector development;
- the judicious use of public procurement and allocation of private infrastructure concessions, relying on careful technical evaluation of options rather than lowest price competition, to promote through competition the efficient use of innovative technology, new working methods and better design, and hence stimulate private demand.

4.67 Measures to reduce the price of land, increase its supply for development, and simplify planning are essential in many of the EC countries. In many countries the planning and approval procedures are slow, bureaucratic and inefficient. They are usually *restrictive* rather than *proactive* - that is, they await applications for development and then look for objections and delays. They should take a long-term view of housing, commercial, industrial and infrastructure needs, region by region and municipality by municipality, and present flexible plans which will encourage the release of land. Infrastructure should precede development, rather than respond to bottlenecks and shortages. Some countries are making progress towards this. The framework of regional development plans in the context of the European Regional Development Fund have been an important stimulus in improving long-term land-use planning in some countries. Nevertheless, far more needs to be done to avoid the phenomenon of excessively high urban land prices, especially in countries where rural land is unproductive and very cheap.

4.68 In many countries, also, the granting of planning permission is slow and cumbersome, with too many different bodies involved, and very long delays. Yet, paradoxically, it is often the countries with the slowest and most obstructive procedures, which by rationing development produce the cheapest building quality and the worst architectural and urban planning quality, with disrespect for the environment and heritage. Many coastal tourist developments and redevelopments of congested urban centres display this problem. The planning procedure must be made more professional and efficient.

4.69 Perhaps the most contentious issue is the allocation of resources between agriculture and construction. The common agricultural policy is being reformed, partly with the help of pressure in the GATT to reduce subsidies which distort world food trade. Total food supply and security is no longer a problem in Europe, and agrarian reform along with new seed technology and irrigation in the former Soviet Union and Third World areas are likely to increase food surpluses in the next decades. At issue then are the conflicting objectives of either:

- preserving traditional rural social structures to prevent migration to urban areas; or
- meeting the needs of infrastructure and housing and creating (or preserving) decent urban and suburban areas through increased investment in construction.

4.70 There is a vicious circle in construction demand. If demand falls, cut-throat competition will drive down prices and quality, reduce training and research, make new construction even less attractive and less cost-effective. Construction will not then be able to play its role in facilitating productive investment, improving the competitiveness of industry, living standards and the quality of the environment. It is important that the European Community creates a virtuous cycle of investment in better built infrastructure, which helps improve EC competitiveness, and in turn enables the built environment to be improved yet further.

Chapter 5 - COMPETITIVENESS

- 5.1 This chapter first looks at some of the conclusions that can be drawn from available data on comparative costs of projects, products and labour in construction between the various EC countries and with the USA and Japan. The distinct characteristics of the construction industries in Europe, the USA and Japan are then compared, and some further comments made about potential trade opportunities and threats in construction and construction products.
- 5.2 There are few data sources and all data are subject to severe problems of comparability. There are no common specifications for construction products, and project costs depend on a multiplicity of local factors, standards and customs. Our conclusions are therefore tentative and should be treated with caution.

Project Costs

- 5.3 Figures 5.1(a) and (b) show comparisons of estimated project costs for a selection of hypothetical projects. The first shows six building projects and the second shows six public works projects. The figures were extracted from data prepared by Eurostat and the OECD for a much longer list of typical projects which is used to compile national price indices and purchasing power parity indices for national accounts purposes and is not published in identifiable form. Those chosen were the only projects for which data exists for most of the

TABLE 5.1 - CONSTRUCTION COST INDICATORS, 1990

(UK = 100. Rounded estimates)

Country	Buildings		Public Works		Total at PPP
	Market Rate	at PPP	Market Rate	at PPP	
UK	100	100	100	100	200
Netherlands	105	105	87	86	191
Italy	84	97	79	92	189
Denmark	117	107	79	72	181
Spain	73	94	65	84	178
Ireland	82	96	70	81	177
Greece	70	100	53	76	176
Belgium	82	96	68	79	175
Germany	97	96	75	74	170
France	81	101	54	67	168
Portugal	53	98	34	63	161
EC Median	82	98	75	79	177
Turkey	35	na	20	na	na
Japan	86	77	98	88	165
USA	73	108	76	112	220

Source: WS Atkins from OECD data.

countries. The costs are calculated costs for a specified project with bills of quantities, and the cost estimates are made by cost consultants in each country, so methodologies may not be properly comparable. They show estimated outturn costs, not tender prices. We have normalised the costs to an index with UK=100 for each project and show averages for each country. These averages

have then been converted using purchasing power parity rates to remove the influence of differences (at market exchange rates) in the average price level between countries.

- 5.4 The data show that at market exchange rates (1990) there was a very large range in average project costs. In EC countries, the cost index varies from 43 (Greece) to 117 (Denmark) for buildings; and from 34 (Portugal) to 100 (UK) for public works - a ratio of 3:1.
- 5.5 In the case of buildings these differences, however, are almost entirely explained by differences in the average price level, in other words by exchange rate effects. There are no discernible differences in overall efficiency of construction (at least, no comparative advantages - construction is just as efficient as the average of all economic sectors in each country).
- 5.6 In the case of public works projects there is more variability, from an index at purchasing power parities of 63 for Portugal to 100 for the UK. These are shown in Table 5.1. We believe this is because there are large differences in customary national levels of specification and design codes which are not fully reflected in the bills of quantities and project specifications on which these data are calculated. Nevertheless, it is interesting that France, Denmark, Belgium, and Germany appear among the low-cost countries, whereas the UK, Italy, the Netherlands and Spain are among the high-cost countries.
- 5.7 At market prices, costs in Japan are similar to the EC average and US costs much lower: but at purchasing power parities the position is reversed and the USA is more costly (by about 10% for buildings) and Japan less costly (by about 20%). The public works comparisons are less clear as there are few comparable project costs: overall Japan appears about 5% less costly than the EC median and the USA about 20% more costly.
- 5.8 A recent study of costs of comparable types of buildings in the USA and the UK (by Bovis Construction Limited) showed US costs to be about 30% lower at current exchange rates, but the differences were due to differences in the general price level and to the fact that the US buildings were to a simpler and very standardised specification, whereas the UK buildings (central London office towers) were individually designed with a bespoke specification.

Product Prices

- 5.9 Prices for construction products from a published source [*European Construction Costs Handbook*, E & F N Spon] and prices collected by the consultants in fieldwork for the purpose of this study, were compared for a list of standard products. Both sources show very high differences in prices between EC countries, for data collected in main cities. These comparisons are very difficult because there are no European standards yet and the customary national specifications vary a great deal. It is in fact difficult to draw up a list of construction products which are commonly available in most EC countries. For the selected list of products, as nearly comparable as possible, prices typically vary by 5:1 between countries, and over 20:1 for some products. Even steel and cement, which have similar specifications and are traded across Europe, have differences of 2:1. Table 5.2 shows the range of prices collected by the consultants.
- 5.10 Large price differentials are expected in construction products, because the high weight/value ratio of many product makes transport costs very high. Nevertheless, the high differences found indicate that there must be very significant barriers to trade. These are principally due to differences in standards and specifications, and local custom and preference, which preserve distinct national and regional markets. The development of European standards, and the promotion of free trade through the CE mark, as well as the

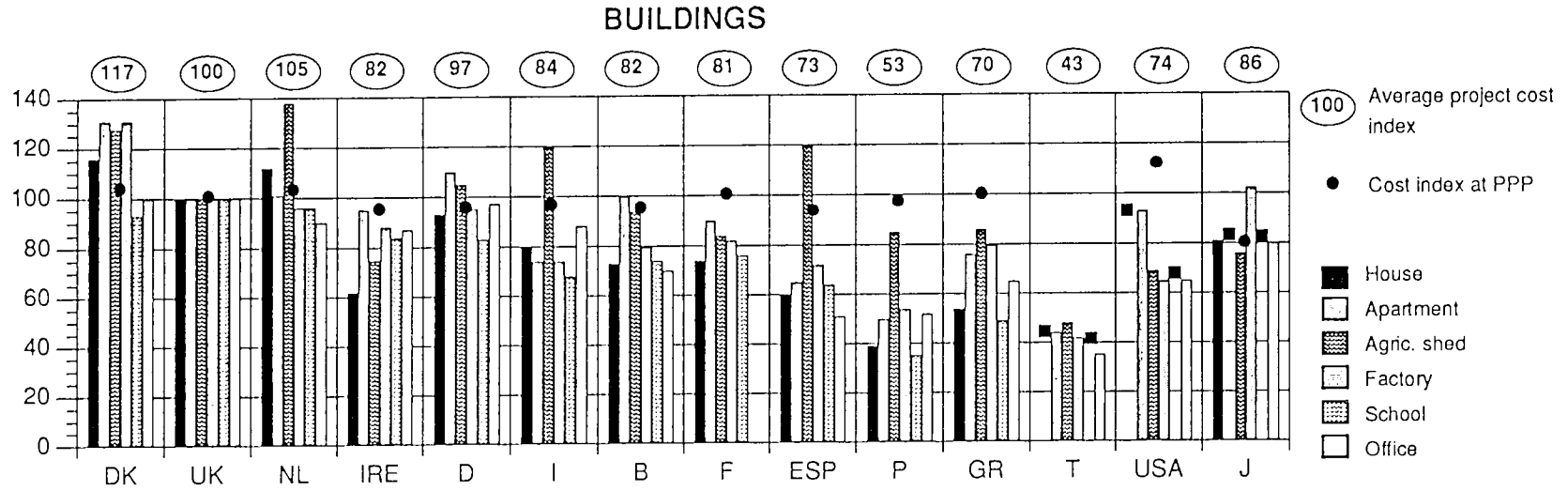


Figure 5.1(a) Comparison of project cost indices (1990 prices)

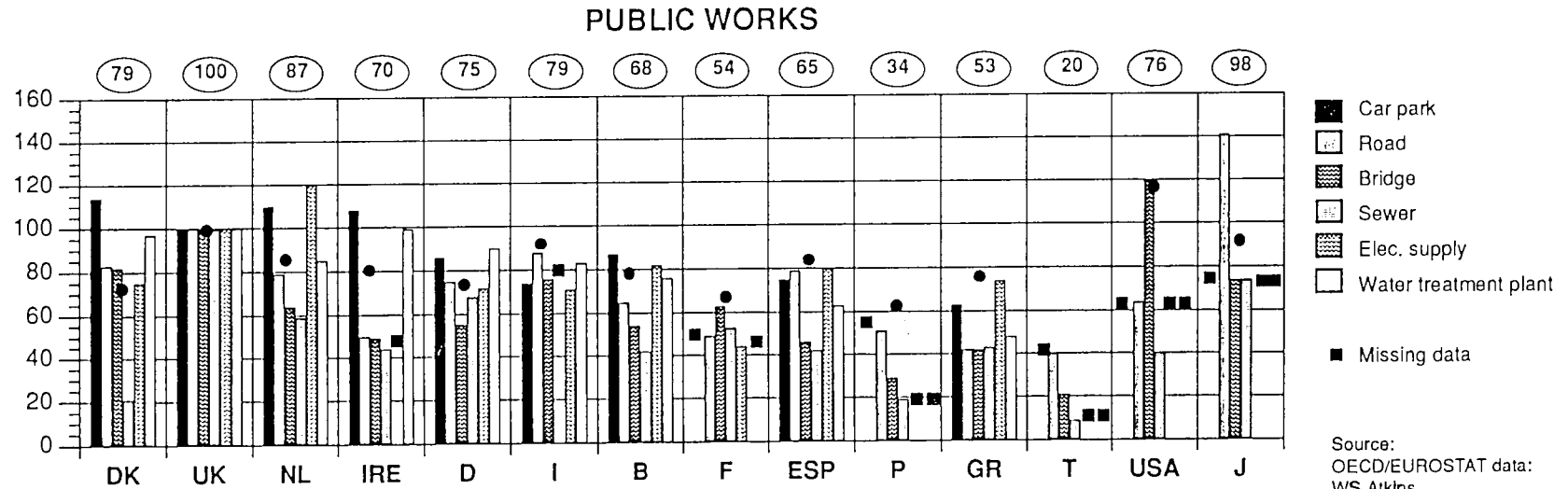


Figure 5.1 (b) Comparison of project cost indices (1990 prices)

Source:
OECD/EUROSTAT data:
WS Atkins

impact of general single market changes, will help reduce these differences. There are then large potential benefits, both to consumers from purchasing at lower prices from new suppliers, and to producers from rationalisation of production, lower cost materials sources, and economies of scale.

TABLE 5.2 - ANALYSIS OF PRICE DISPERSION
(July 1992 Prices)

Item	High		Median	Low		Ratio Highest/ Lowest
	Value	High/ Median		Value	Median/ Low	
Aggregate	23*	2.0	12	4	3.0	6.0
Cement	97	1.2	82	51	1.6	1.9
Reinforcement bar	566	1.6	356	242	1.5	2.3
Clay facing brick	414	1.6	260	70	3.7	5.9
Concrete block	14	2.0	7	1	7.0	14.0
Softwood for carcassing	402	1.5	261	115	2.3	3.5
Steel cladding	15	2.5	6	3	2.0	5.0
Roof tiles	1 871	3.4	548	239	2.3	7.8
Sheet glass	37	2.5	15	7	2.1	5.3
Plywood	16	1.6	10	3	3.3	5.3
Chipboard	9	2.25	4	3	1.3	3.0
Hardboard	4	1.3	3	1	3.0	4.0
Plasterboard	4	2.0	2	1	2.0	4.0
Blockboard	16	1.6	10	3	3.3	5.3
Structural steel sections	665	1.2	542	381	1.4	1.7
Ceramic tiles	33	3.7	9	5	1.8	6.6
Copper pipes	3	1.5	2	1	2.0	3.0
Plastic pipe uPVC	7	2.3	3	2	1.5	3.5
Premix road materials	84*	1.8	46	12	3.8	7.0
Sheet steel piling	1 306	2.3	572	411	1.4	3.2
Softwood for joinery	1 589	4.0	401	128	3.1	12.4
WC suites	296	2.2	132	73	1.8	4.1
Cast iron pipes	66	1.7	39	10	3.9	6.6
Plaster	108*	0.8	138	94	1.5	1.1

* Higher quote eliminated as probably unrepresentative.

Source: Consultant's field research.

- 5.11 The price differences do not, however, seem to have an important effect on the relative construction costs between countries. There is no clear pattern of high- and low-cost countries for construction products. Neither the USA nor Japan appear to be significantly different from the EC either, although Japan is towards the top of the range of EC prices and the USA towards the bottom, which is in line with differences in their general price levels.

Labour Costs

- 5.12 Labour costs and employment conditions vary significantly. Basic wages are set in each country by national wage agreements, usually specified for a few different grades of workers. On top of this, there is often a locally negotiated bonus, and at times of high demand in locations with labour shortage these can be high. National labour legislation and collective agreements then provide for a range of benefits and employment conditions, such as holiday pay and entitlements, bad weather payments, social security and pension payments, which affect the total cost per hour to the employer. Over the last decade these supplementary payments have increased enormously in most EC countries (but not in the UK). They are typically over 100% of basic wages, up to 143% in Italy.

- 5.13 Figure 5.2 shows estimated median wages and total labour cost per hour for the EC countries, based on 1992 collective agreement data collected by the European Federation of Building and Wood Workers, with supplementary costs estimated from a study by Lanove for the Belgian *Confédération nationale de la construction* in 1990. It shows that most countries have costs in the range of ECU 10 to 20 per hour, with Greece, Portugal and the UK falling well below these figures.
- 5.14 When converted into purchasing power parity equivalents the differentials in labour costs are reduced but the patterns change. This is shown in Figure 5.3. Italy and Spain have the highest hourly labour costs (this is, relative to the general price level) and seven countries are in the fairly narrow range of ECU 15 to 20 per hour. Greece, the UK, Portugal and Ireland have much lower costs, and apparently also Luxembourg, which relies on immigrant labour.
- 5.15 Figure 5.4 shows the relationship between labour costs and project costs, all at purchasing power parities, for both buildings and public works projects. It shows that for building projects (where the bills of quantity are fairly well defined) there is no apparent relationship between labour costs and project costs. Since labour costs are typically around one third to one half of total building costs this is surprising and shows that labour productivity in low-wage countries is so much lower that all cost advantage is removed.
- 5.16 In the case of public works there is a discernible positive relationship between total costs and hourly labour costs (except for the UK which has the highest project costs and almost the lowest labour costs), but as we have already mentioned the comparisons are less reliable because public works projects are less easily compared. There are differences in codes, practices and customary levels of specification. In general, the data seem to show that halving the labour costs leads to about 15% reduction in public works costs. The exceptional case of the UK seems to show again, however, that exceptionally low labour costs are counter-productive and lead to higher overall costs.
- 5.17 With a wide range of techniques available one would expect low-wage countries to choose labour-intensive methods, but this would still lead to overall lower costs. It has to be concluded that low labour costs in construction are a disadvantage. They are a disincentive to recruitment and training. The industry will only attract the least able workers. Turnover will be high and the more able workers will migrate to better paid regions or other industries, so there is no incentive to training. There is also no incentive to use more mechanised techniques and more manufactured materials, so quality and productivity suffer.
- 5.18 On the other hand, construction is a very competitive industry in which wages are an important element of total costs. Wages clearly cannot be increased without increasing total costs unless productivity gains are achieved, which is mainly dependent on the introduction of new technology and changes in training which are slow to take effect.

The Cost of 'Murky' Practices

- 5.19 In all countries, the construction sector has a tendency to a greater or lesser extent to 'murky' practices which may be unethical and/or illegal. This includes various forms of corruption in tendering - bribery of officials, political contributions, collusion between bidders, deliberate underbidding and using technical variations to obtain increases, etc. To a large extent these are a defensive reaction to the characteristics of construction markets described in Chapter 2 which lead to cut-throat competition and a bias to low prices and

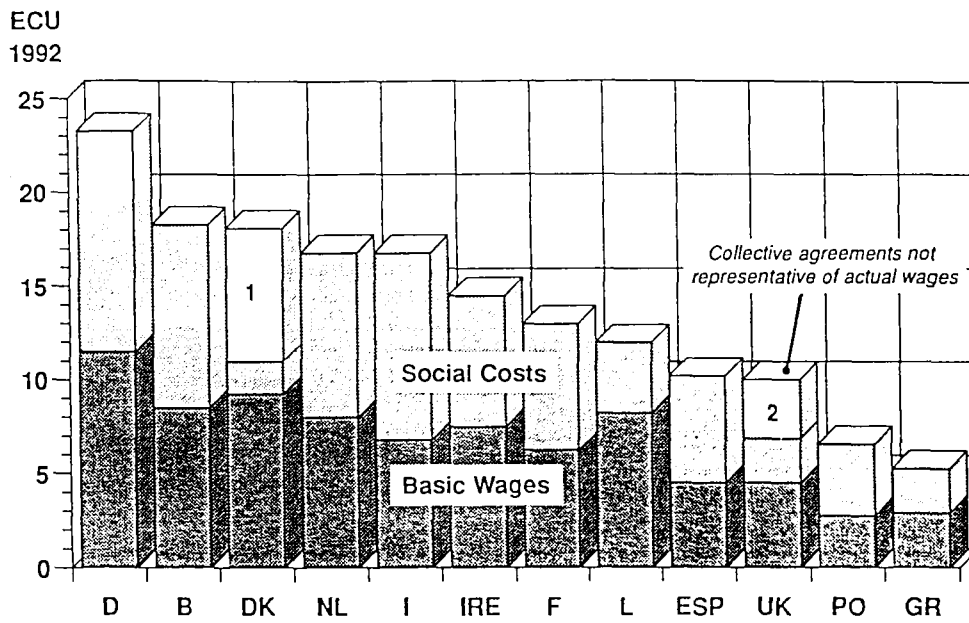


Figure 5.2 Estimated Hourly Wage Costs in Construction in EC Countries (estimates based on collective agreements)

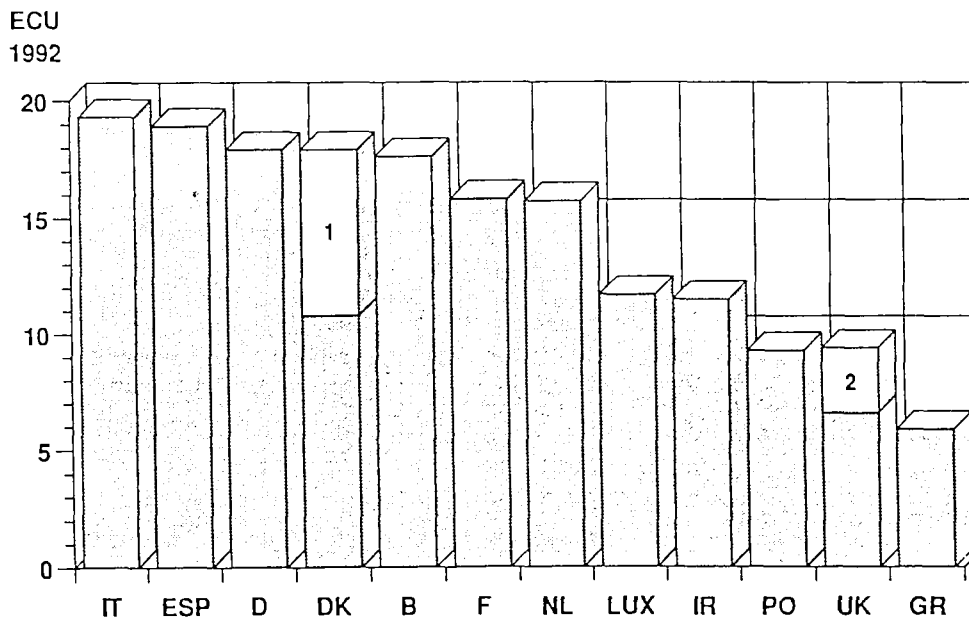


Figure 5.3 Hourly Labour Cost at Purchasing Power Parity

Sources: European Federation of Building and Woodworkers; Lanove, CNC Belgium

1 Recent data on social costs not available for Denmark
2 UK bonuses are very variable and form a significant part of wages.

Comparisons with the USA and Japan

- 5.20 The USA, Japan and the EC have the three largest and most influential construction industries in the world. All three have a large home construction market of a similar size (1992 figures):
- USA: output ECU 510 billion serving 249 million people;
 - Japan: output ECU 520 billion serving 124 million people;
 - EC: output ECU 550 billion serving 347 million people.

The following paragraphs summarise some of the differences between the three.

USA

- 5.21 *Basic characteristics:* The US construction industry enjoys a fairly homogeneous internal market in terms of standards, procedures and methods. It has the benefit of a common language, currency, economic policy, business ethics, education system and culture. The US market in total is big enough to provide significant economies of scale in the manufacture of materials and components. However, the US construction industry also consists of 51 different states, various dependent territories, and many major cities, each of which governs its local construction in a somewhat different manner. As a result the USA has many local construction industries, which are distinct, with some effective barriers to trade between them, but also have important characteristics in common.
- 5.22 *Strengths:* The US construction industry produces standardised, component-based buildings efficiently and quickly. It also has the world's largest heavy engineering specialist contractors. They design and manage the construction of large processing plants around the world and undertake the R&D needed to stay technologically competitive. The US construction industry is supplied with standard components that are readily available throughout the USA and which provide good value for money.
- 5.23 The fact that the USA has been continuously developing and opening up new territory has fostered an attitude in development planning that the infrastructure is a precursor of development. Infrastructure is well- or over-designed and planned for future growth.
- 5.24 *Weaknesses:* The consequence of this commercially oriented and standardised approach to construction, especially building, is that most building is affordable and adequate, but architecturally uninspiring and not built either for long life or adaptability. Non-standard projects will be relatively expensive. Partly as a result of the aggressive commercialism of the US industry, lawyers are far too active and are a disincentive to innovation. There are, of course, examples of exceptionally good architecture, but they tend to stand in contrast to their generally bland surroundings, and conversely the inner cities and declining areas suffer from 'urban blight' on a worse scale than European cities, with badly deteriorated buildings and inadequate redevelopment. US cities are designed to the logic of low-cost construction, instead of to meet the needs of people.
- 5.25 *Key participants:* The US construction industry has well developed construction management expertise. Specialist contractors and construction managers are the key actors, and architects and engineers have good management training and treat projects as a commercial undertaking in which cost, timing and meeting the client's needs are important.

- 5.26 *Lessons for the EC:* The US construction industry shows that competition can ensure that the local construction industries serving individual states and cities have available very efficient specialists in all the construction disciplines. It shows that a consistent project management system can be devised and maintained by networks of companies that work together regularly. It shows that widely used standards, e.g. standard components and standard design details used by architectural and engineering consultants that are well understood by local specialist contractors, can emerge from commercial pressures.

Japan

- 5.27 *Basic characteristics:* The Japanese construction market has virtually no internal barriers or regional differences. The construction industry benefits from cooperation between government and industry to provide predictable demand and fair prices. This degree of State involvement makes it a very protected industry, very difficult for foreign contractors and materials suppliers to enter. Construction is unusually profitable, controlled and cooperative. It has provided an influential model for other Asian construction industries, which may in time become even more significant amongst the world's construction industries than Japan is now. Important examples include Korea, China and Indonesia.
- 5.28 *Strengths:* Japan produces consistent quality of construction with exceptional concern for time performance. It has the world's largest general construction firms which have excellent research and training organisations. They provide tightly integrated design and construction management services. Japan also has, in its manufactured housing industry, the most highly industrialised construction industry in the world. In general Japan has gone further in integrating design and off-site manufacture and creating a fully integrated construction industry.
- 5.29 *Weaknesses:* Japan's architecture is dull, its cities are unattractive and the quality of urban life is relatively poor. A large proportion of the population has inadequate housing by western standards, although this is more to do with population density than construction standards. The close relationship between government and major companies has been shown by recent scandals to favour corruption. As in other sectors, the construction industry's competitiveness is dependent upon extraordinary commitment and long working hours by its work-force and there are signs that attitudes to this are changing.
- 5.30 *Key participants:* In the Japanese construction industry, the big five construction firms are the key actors, at the top of a pyramid of subcontractors, specialists, suppliers and designers. Training, research and innovation then trickle down from the top, and the industry is dependent upon an interlocking system of patronage and non-contractual relationships. Below this pyramid, Japan has a traditional industry with many small firms using mainly traditional methods.
- 5.31 *Lessons for the EC:* Japan shows that government policy and professional marketing by big contractors can create high and relatively stable demand and high prices for construction. It shows that stable demand and good profits enable large contractors to concentrate on improving their own competencies by steadily investing in innovation, training and R&D. It shows that consistently reliable performance can result from long-term relationships with customers, suppliers and subcontractors. It also shows that inadequate concern for urban planning, architecture, environment and society leads to unpleasant cities.

EC

- 5.32 *Basic characteristics:* The EC construction market is heterogeneous in almost every important respect. It consists of separate nations with old and highly developed cultures. The creation of the single market seeks to remove regulatory or procedural differences where they restrict trade. However, at present the EC construction industry consists of many very different local industries, each of which reflects a distinct local culture. The vast majority of firms throughout the EC construction industry are very small. Thus the industry is both more fragmented and more diverse than in the USA or Japan.
- 5.33 *Strengths:* Europe produces world-class architecture. Its construction industry consists of separate national industries, some of which have distinct strengths. Some large contractors are emerging, mainly as a result of mergers and acquisitions. Much innovation comes from the manufacturers of materials and components. The single market will enable diversity to become a strength rather than a weakness, by stimulating change and innovation while retaining variety. Its concern with the environment is creating advantages in environmental technologies.
- 5.34 *Weaknesses:* The EC has too few world-beating construction firms. Many, but not all, countries have too many weak and uncontrolled very small firms which bring down average quality levels. Fragmented markets have prevented the development of industry standards for products, and many product sectors are unable to take advantage of economies of scale.
- 5.35 *Key participants:* In the EC construction industry, architectural and engineering consultants are unusually influential, ensuring quality, consumer protection and good varied design.

Opportunities and Threats for the EC Construction Sector

Trade with the USA and Japan

- 5.36 The EC, the USA and Japan each have lessons to learn from the others. A certain amount of trade and interchange of contractors, designers and project managers would be very valuable to promote that learning and innovation process. For the most part, however, construction will always remain a geographically concentrated industry, with national and local characteristics. There is a small involvement of both Japanese and US contractors in Europe, for the most part following their own multinational trading industries.
- 5.37 The US process plant contractors have been active in the oil and gas and chemicals industries, and in power generation. They have a strength in management of major projects, especially where rapid construction is required. Their designers and project managers have won a number of contracts for large and complex building projects. The strengthening of Europe's major contractors and large consultants, however, along with the weakening of US defence involvement and direct industrial investment, will reduce the opportunities for US contractors and project managers in Europe.
- 5.38 The Japanese have in the last few years established a small presence, mainly building offices and factories for Japanese manufacturing companies entering the EC market. As a result of the huge foreign exchange surpluses built up by Japan during the 1980s, Japanese contractors have followed their banks and financial institutions in seeking major project investment opportunities, but they have recently pulled back from investment in the uncertain European property market, and their activity in the near future will mainly be in South-East Asia

and other developing regions which offer the most opportunities for Japanese direct investment. Japanese contractors in Europe do not benefit from the complex inter-relationships with subcontractors, suppliers, financiers and government, upon which their operations in Japan depend. In Third World markets, especially South-East Asia, however, they are hard to beat because of their easy access to credit and willingness to take export business at a loss in order to win kudos which helps them gain public sector work in Japan.

- 5.39 The major influences of Japan and the USA on the EC construction sector in the next decades will be in the imports of sophisticated construction equipment, manufactured components, and management systems. The USA has traditionally had an important share of the construction equipment industry, and Japan has now established an important presence, particularly in smaller and more specialised equipment aimed at the small firm. Its high level of research expenditure on mechanisation and robots will assure a major role for Japan in this sector, which reflects Japan's world lead in high-volume manufactured products.
- 5.40 The systems market will also be an important one, especially now that the world's computer industry is dominated by US and Japanese firms. In both cases also their more formalised project management systems will enable the USA and Japan to take a lead in developing the systems and software needed for CAD, electronic data interchange (EDI) and information management. Japan also has the advantage of closely integrated design and construction, which favours the development of IT systems.
- 5.41 In manufactured components, both the USA and Japan have a hold on the building services market. For example, US firms are leaders in large system air-conditioning, Japan in small packaged units. In most construction products in Europe, however, there is little trade or investment from outside. Indeed, European firms have in the last decade made major investments in cement and other construction products in the USA and elsewhere. An important consideration, however, is Japan's lead in manufactured housing which outstrips anything available elsewhere. If the cost advantage and the potential of computer-integrated manufacturing can win over European customers' preference for traditional methods, Japanese technology could have a lead.

Eastern Europe

- 5.42 The threats and opportunities in eastern Europe and the former Soviet republics are more important than in the USA and Japan, and are still largely unquantifiable. It is clear that there are massive needs for infrastructure and for modernising the building stock throughout the region. It is also clear that there is a massive construction industry with very low wages, with the physical capacity, but not the financial capacity, to supply the demand. Some enterprises also have a lot of major project experience in the Third World. The industries in eastern Europe have been structured mainly around large firms, which in the past had monopolies of specialist sector markets or regional markets, and have little experience of costing, marketing, contracts or rigorous project management to time and budget. These large firms are being broken up, and very many small entrepreneurial firms are emerging. There is also no tradition of independent designers and consultants. In the short-term, therefore, there are no real threats, but also limited opportunities for EC contractors, because of the lack of financial resources. In the longer term, when their firms learn commercial practices, there will be a potentially large threat to western European contractors in the lower-value end of the market and in specialist industrial sectors.

- 5.43 A particular factor in competition from eastern Europe in the medium term will be their production of heavy construction equipment. Several eastern European countries already have a large manufacturing capacity and are intending to convert defence equipment manufacture into manufacture of construction equipment.
- 5.44 The central European countries also have large capacities for production of construction materials (especially cement and steel) and products. They see western Europe as a potential market, and western European companies as potential investors and sources of technology for their industries.

The Rest of the World

- 5.45 Opportunities for EC contractors in their *traditional* export markets in the rest of the world are declining. The world's growth markets outside the triad of the EC, the USA and Japan are no longer in the old colonies, nor in the rich but non-industrialised oil producers. The main growth is in China and South-East Asia. In much of this area Japan has an established sphere of influence. The world has in fact focused more into spheres of influence of the triad, and whereas aid money opened up markets in the past, it will be private-sector finance and direct investment which will lead them in future. The EC contractors and consultants will need to compete for major projects by providing financial engineering. They need to be able to participate effectively in BOOT (build-own-operate-transfer) and similar forms of project organisation, either by extending their own range of services or by being able quickly and efficiently to set up consortia of banks, designers, builders and operators.
- 5.46 Europe's strength in world markets can be built upon its world-class designers and consultants, and the sector should find ways to harness their reputation. This would include the option of design-build-finance packages. Europe's great designers could take the lead in forming flexible relationships with excellent contractors and with financial institutions to offer the world either a one-stop package, or our project management expertise in harnessing local contractors and suppliers to European design and technology. The EC should become the style leader of construction world-wide and build competitive advantage from doing so.

Chapter 6 - QUALITY IN CONSTRUCTION

The Cost of Non-quality

6.1 Quality in the construction industry is considered to be one of the sector's basic problems. The average quality of buildings has improved over the past decade from the viewpoints of both user comfort and the reliability and durability of structures and equipment. This improvement in building quality is due chiefly to improvements in building materials and products and the ever greater requirements on the part of consumers, which can now be met, and is supported by greater interest in quality assurance and quality management.

6.2 Quality has two dimensions:

- the level of performance specification and design merit;
- freedom from defects and errors, in other words compliance with the requirements, specifications and designs.

There is general agreement throughout the industry that both should be improved, as one would expect. It is generally believed, moreover, that the economic benefits of improving quality will outweigh the costs.

Level of Specification and Design

6.3 Unrestrained competition in construction creates a bias to low levels of specification. We have discussed elsewhere in this report the characteristics of the construction market which tend to lead to excessive competition, myopic choice, and selection on price rather than quality. There are two consequences:

- firstly, consistent underbidding by contractors and consultants leads them to seek all possible ways to cut corners and reduce the level of specification wherever it is not rigorously specified;
- secondly, the customer has a bias towards low initial cost rather than life-time cost, because of the uncertainty deriving from a lack of perfect foresight about the future performance of the built works.

There are examples everywhere, from homes that are too expensive to heat, to motorways that need excessive maintenance. On the other hand, there are also examples of grossly over-designed projects as a result of corruption or lack of proper competitive procurement. The consensus of opinion, however, is that the overall level of specification of construction should be raised. As the quantity of built infrastructure increases, and as levels of national income rise, we should be able to afford ever improving levels of specification.

6.4 Naturally, the required levels of performance depend on the particular project, and they are also strongly conditioned by geographical, economic and cultural contexts of different countries and of different clients. In general, however, it can be expected that as part of public policy on health and safety generally, building regulations, including environmental standards, will be steadily raised. The standard specifications for public works should also be continuously revised and improved. The industry should collectively strive to improve procurement procedures and practices and professionalism in procurement. The public sector should set a lead, by selecting consultants and contractors, and choosing designs, on the basis of life-cycle costs, performance and design merit, and not just on initial price criteria. The contractors and product

producers also have to play their part, by their marketing, to demonstrate and sell the advantages of higher quality. Raising levels of quality will in itself continue to generate new demand for construction as owners and users see the benefits of upgrading.

Defects

- 6.5 Despite progress in quality there is still a serious problem of defects and weaknesses affecting the functioning and durability of built structures. These defects give rise to litigation, disputes and repairs. This is expensive in terms of the cost of guarantees and insurance to cover the liability of the various players involved, as well as the direct costs of repair and replacement and losses in the use of the property suffered by owners and users. According to surveys conducted in different countries, the main causes of weakness are design faults, inadequate quality of materials and components, and poor workmanship. These problems are aggravated by the difficulties involved with organisation and communications between the many parties to the construction process.
- 6.6 The same causes are behind errors detected during construction, requiring remedial work, repairs and modifications, and also generating additional costs, delays and unsatisfied customers. Studies have shown that the costs of a lack of quality could be between 5 and 10% of the investment.

Strategies to Reduce Non-quality

- 6.7 There are five types of tools used to control quality in construction:
- product standards and design codes;
 - technical control of compliance with regulations, standards and contract specifications;
 - liabilities and guarantees covering risks of defects;
 - registration and qualification of contractors and consultants based on their capabilities;
 - quality assurance and quality management systems.

The following sections discuss the current developments in each of these, and their impact on the industry.

- 6.8 In the discussion on technology (Chapter 7) we have identified the need to improve knowledge of building defects and pathology, and provide feedback to research programmes and to designers and technical controllers. Several organisations have databases of defects and causes and there is increasing interest in improving and combining information from these. European databases include CSTC (Belgium) and AQC (France); and the BRE (UK) has a research programme to develop a UK database.
- 6.9 Three aspects of present Community policies have an impact on quality in construction:
- the Construction Products Directive, whose principal aim is to eliminate barriers to trade (since building regulations and product standards and specifications can be protectionist barriers) while ensuring a high level of protection for the environment and the users of built works;

- consumer protection and the issue of liability and guarantees, with the GAIPEC proposals (see para 6.39) leading to discussion of possible EC measures, whose principal aim is to help reduce barriers to free trade and movement of professionals, but which must preserve a high level of protection of the consumer and promote quality in construction;
- health and safety policies, in particular the Temporary or Mobile Construction Sites Directive, which by laying down requirements for planning and responsibility for safety of site operations should improve site control and indirectly help prevent defects arising from poor workmanship.

Product Standards: The Construction Products Directive (CPD) and its Impact on the Sector

- 6.10 The Construction Products Directive 89/106/EEC (CPD) aims to remove barriers to the free circulation of construction products, caused by differing standards, testing procedures and procedures for attestation of conformity in Europe. The need for this, the existence of technical barriers and the benefits from removing them were established in the 'Cost of Non-Europe' study on construction products, in 1988. The CPD is one of the 'new approach' directives on standardisation, which requires that products meet certain essential requirements in terms of health and safety and consumer and environmental protection. If they do, and conform with the harmonised technical specifications, they can carry the CE marking and can be freely marketed and traded across Europe without further testing.
- 6.11 In addition to the CPD, the Public Procurement Directives will have an important effect in enforcing and encouraging the use harmonised CEN standards. The directives require that the tender documentation for public works and public supplies should make reference to European standards where they exist. This will help ensure that useable CEN standards are developed, with a view to products' performance as well as health and safety and environmental factors.
- 6.12 For construction products six essential requirements are defined by the CPD in terms of the characteristics of the works into which they are incorporated. They are:
- mechanical strength and stability;
 - fire safety;
 - hygiene, health and the environment;
 - safety in use;
 - protection against noise;
 - energy economy and heat retention.
- 6.13 Products can be shown to meet these essential requirements either by meeting:
- national standards which transpose harmonised European standards;
 - European Technical Approvals (ETAs) for products which are innovative and for which harmonised standards are not appropriate;
 - national technical standards recognised by Community decisions as satisfactory bench-marks for conformity (it is expected that there will be few of these, if any).

- 6.14 The CPD should have been transposed into national law on 27 June 1991, but there have been some delays and the details of transposition in some Member States are still being assessed by the Commission. In practice, the effective implementation is limited by the immense amount of work required to set up the procedures and draw up the harmonised standards and guidelines for technical approvals. This process is regulated by the Commission, supported by the Standing Committee on Construction.
- 6.15 Harmonised European standards are to be drawn up by CEN or Cenelec on the basis of Interpretive Documents (IDs) for each of the essential requirements. These Interpretive Documents have been adopted (with a temporary solution in the case of fire protection) and this formally enables the work of CEN/Cenelec on harmonised standards to begin. The work of producing some 3 000 individual harmonised standards will undoubtedly take many years. Some of the work has already progressed and a large number of harmonised standards is expected to be completed in 1994/5.
- 6.16 European Technical Approvals are the second route to CE markings, for innovative products which do not, or not yet, have harmonised standards. ETAs are favourable technical assessments of fitness for use of a product, and will be drawn up for individual manufacturers' products after a programme of testing by the members of the European Organisation for Technical Approvals (EOTA). These members are the technical approval bodies designated by Member States. Most are also members of the European Union of Agrément (UEAtc). ETAs can only be given for products for which a Technical Guide has been drawn up after a mandate by the Commission and approved by it, or for which the Commission has agreed that an ETA can be drawn up without a Technical Guide. EOTA has been set up and its Rules of Procedure agreed, and work begun on the first few Guides for technical approvals.
- 6.17 Work is now continuing to define the attestation of conformity procedures which will be needed for each product to obtain the CE marking. CE marking of products can begin when the attestation procedure has been agreed for each product or product family, and either a harmonised standard or a Technical Guide or a mandate for ETAs has been drawn up. Attestation also requires that approved bodies (testing laboratories, certification bodies and inspection bodies) that meet specified requirements, have to be designated by the Member States.
- 6.18 Some aspects of the implementation of the CDP have not yet been fully resolved, including what the requirements will be for products which are also subject to other new approach directives, such as the Low Voltage Directive; and how different classes and levels of standards can be defined without creating new national differences in standards which defeat the objective of the directive.
- 6.19 There are some concerns amongst product manufacturers, and specifiers and purchasers, about how the system will work, the cost and time it will take to be fully put in place, and the impact on availability and quality of products. Since no harmonised standards or ETAs are yet (mid-1993) available, it is not possible to judge how well it will achieve its objectives of removing barriers, increasing trade and competition and improving quality.
- 6.20 Some of the concerns arise from the presumption that there should be harmonised standards in preference to technical approvals. Standards will tend to embody present practices and favour existing products rather than new ones. Because the standards will be *de facto* compulsory, and the mechanisms for change will be slow and costly, the concerns are:
- that producers should have a degree of freedom and initiative so that they can offer innovative and cost-effective solutions;

- standards should be performance based as far as practicable, subject to the needs for products to be interchangeable and compatible;
- knowledge of the pathology of structures and products should be continuously monitored and incorporated into revised standards;
- they should take account of different classes and levels of performance and use, but not recreate national and regional differences which would reinforce existing trade restrictions.

- 6.21 This report emphasises the importance of innovation in construction. It is essential that innovation is not stifled in the interests of conformity for the purpose either of removing non-quality or improving trade. In any case, it must be clearly recalled that trade in industrial products between the countries of Europe is promoted not by natural advantage, but by product differentiation and the advantages that come from learning curve effects in the product cycle. Gaining advantage through proprietary know-how and intellectual property is essential to this process, which sharpens competition and competitiveness. Uniform and rigid descriptive standards only preserve entrenched market positions.
- 6.22 It is essential for the reasons above that the Technical Approval route should be effective, rapid, trusted and cheap, with sufficient capacity to respond very quickly to the demand from any manufacturer who chooses to use it. The CPD ought to lead to an enormous increase in the demands on the *agrément* system in each country. In general, these systems are accustomed to dealing with a few tens of product approvals per year (although 300 to 500 in France and the UK). They will probably need to be dealing with several hundred a year in each country in future. The members of EOTA and the testing bodies which support them will have to expand and strengthen their capacity and breadth of technical capabilities if this is to be achieved.
- 6.23 There will be, and should be, debate throughout the process of development of harmonised standards and ETA guides about the appropriate level of standards. The CPD states that a high level of protection should be provided. Levels of standards should not be so high as to have a disproportionate effect on production costs, or to reinforce the dominant position of a small number of producers. But it is to be expected that EC marking will require many low-quality producers to undertake new investment and product development, or to leave the market, otherwise the directive will have had no effect. The overall level of quality and the occurrence of defects due to substandard or incorrectly used products should be improved by the effective implementation of the directive. The requirements of attestation of production control systems and company quality assurance systems should also reduce the delivery of faulty products.
- 6.24 Although the implementation procedure will take time, the process itself has already had considerable value. Those countries with less well developed standards systems have an increased awareness of the importance of standardisation and product testing, and of the existing product standards. All countries have had an opportunity to reconsider their technical regulations in the light of practice elsewhere. The firms and individuals taking part in the various committees have a greater awareness of product markets and alternative specifications. Most countries have tried to preserve the interests of their producers and contractors and have developed strategies to associate producers and regulators in order to be active and influential in technical committees.
- 6.25 The impact on overall quality will be positive unless there is a serious breakdown in the functioning of the process, but the impact on the level of trade and the structure of the producer sectors is less clear. The removal of the

technical barriers caused by testing requirements and the greater awareness of products will lead to a greater availability and choice of products. This will be partly met by increased trade, but also by licensing and by development of new products by domestic and local producers. Some producers will also go out of the market, either because their products intrinsically fail to meet the requirements, or because the firms are too unprofitable or just too poorly managed to meet the requirements for attestation. In some cases, producers serving a small local market may be at a disadvantage compared to larger firms serving regional and national markets if there are significant costs of changing production methods to meet European standards, or if there are significant economies of scale which the local producers had previously been protected against by local regulations and norms; but these impacts should be few and the impact will be different for different product sectors. Overall there should be more choice and more product differentiation, but fewer producers serving larger markets.

- 6.26 At a world level also the CPD should have an impact. It will create a route for non-EC producers to obtain attestation and enter the market; but it will also be possible to exclude untested and poor-quality products and remove the possibility of dumping low-cost low-quality goods. It will also create part of the infrastructure needed to underpin guarantees and latent defect insurance which will help EC contractors to compete better in world markets, particularly those such as the Middle East which have decennial requirements.
- 6.27 Some of the implications for action by the construction industry are:
- the need for all producers to make sure they have adequate quality assurance and production control systems;
 - the need for investment in product development, to succeed in more competitive markets, and in some cases to be able to meet the requirements of harmonised standards or ETA procedures;
 - the need for producers to make provision for the costs of attestation in their pricing and budgeting;
 - the need to develop the capacity of the testing and technical approval bodies. There needs to be a detailed study of the future requirements for testing, technical approval and accreditation, which has two components: the direct need for testing and inspection for the attestation process, and the research and testing required by manufacturers to develop new and improved products;
 - a large new demand on the trading standards officials who need to keep a surveillance on the use of CE marking, the circulation of unmarked products, and investigate cases of false marking both by national, EC and non-EC producers.
- 6.28 The process of implementation of the CPD is difficult and costly, and the participants in technical committees, in CEN/Cenelec and EOTA and in the Commission and its Standing Committee will need to seek pragmatic solutions based as far as possible on existing standards and procedures. After an initial period of setting up the procedures and responsible bodies and establishing the good functioning of the system, the direct role of the Commission will probably diminish and industry with CEN/Cenelec and EOTA will be able to ensure the extension and updating of the standards and ETAs.

Technical Control and Quality

- 6.29 Technical control of construction works is compulsory in some form in all countries. It takes place with reference to regulations, standards and

contractual documents. It can be ensured by the client himself, his architect, an independent building control authority or an independent technical institute that may be private or public. In some countries technical control is carried out by inspection of works during construction, but in other cases only in granting construction permits (based on plans) and occupation licences on completion.

6.30 Controls may have different aims:

- control of regulations,
- control of standard practice,
- control of contractual specifications,

and may therefore be carried out by different bodies.

6.31 The technical controllers have functions and responsibilities which may be defined by the legislation, the liability system or by contracts. For example, in France the law of 4 January 1978 instituted technical control of buildings by approved independent specialist *bureaux de contrôle technique* subject to 10-year liability, with the task of helping to prevent technical risks linked, in particular, to the soundness of the structure and equipment and to the safety of persons, from the design stage to delivery. There are only a few of these technical control bureaux, and the largest of them is an influential body in the industry. This control is compulsory for buildings open to the public, high-rise buildings or those with special features. For other structures, clients are strongly encouraged to call upon technical control and they then benefit from a 'rebate' on insurance premiums. The controllers' duty is then laid down contractually. Apart from inspecting soundness and safety, it may include verification of operation, inspection of insulation, etc.

6.32 In Germany, there are several stages of control on the construction site, as well as the internal monitoring that the contractor or his representative carry out.

- Firstly, the owner of the building project is obliged to appoint a *Bauleiter* (construction supervisor) who is responsible for the orderly execution of the works in accordance with the approved project documents. He may be an architect, an engineer or a master craftsman. The *Bauleiter* also has to ensure that health and safety regulations are being complied with.
- Secondly, in the case of building projects, the *Bauaufsichtsbehörde* (central construction authority of the federal state, *Land*, concerned) is required to oversee the execution of the works. This supervision consists of ensuring conformity of works to the project documents, suitability of construction materials and components, and ensuring that all parties to the project fulfil their duties. The *Bauaufsichtsbehörde* may appoint an independent *Prüfingenieur* for this task.
- Thirdly, security and safety on site are also monitored by the *Bauberufsgenossenschaften* (public entities providing workers' insurance against accidents on construction sites) of which membership is obligatory for all contractors. These insurance bodies may have their own site inspectors or use self-employed experts.
- In addition, the quality of materials and products is assured at the factory by private monitoring and quality associations (*Überwachungs- and Güteschutzgemeinschaften*) appointed by the state construction authority, the *Bauaufsichtsbehörde*, for this purpose, and by public or semi-public materials testing institutions or private *Prüfingenieure*, under specific monitoring contracts approved by the *Bauaufsichtsbehörde*.

- 6.33 In the UK, technical control for building regulation purposes has traditionally been carried out by inspectors employed by the municipalities. In addition, the fire regulations have involved separate fire authorities, and aspects of safety-at-work the separate national Factory Inspectorate. It is possible for private-sector bodies to carry out technical control for building regulations. However, so far only the National House Building Council (NHBC) has made use of this possibility and then only to a limited extent. While there are a number of organisations offering technical control for insurance guarantee purposes, at the moment this is only carried out on any scale by the NHBC, a mutual body owned by its housebuilding members and providing 10-year guarantees on almost all new houses built for sale. It operates a system of voluntary standards and specifications and a graded registration system for its member builders.
- 6.34 In Spain, control of construction is carried out by the architect or engineer employed by the client. Day-to-day site inspection and coordination is carried out by a technical architect, also employed by the client, and he also prepares a safety plan and monitors health and safety, carries out materials tests, and measurements and control of payments. The professionals' associations (*colegios*) of architects, engineers and technical architects carry out a third-party control and check that all necessary certificates and project plans and documents are correctly produced by the professionals.
- 6.35 An interesting feature in the Netherlands, where building control is carried out by local authority inspectors who inspect sites during construction and issue an occupation certificate, is that the inspectors can also make recommendations for maintenance or repair of existing buildings in use.
- 6.36 The debate on control is a lively one in each country. Too much control, or not enough? We do not advocate an EC-wide solution. In fact, the answers must take account in each country of the expected effectiveness of control and its cost (which is passed on directly or indirectly to construction costs). The degree of responsibility of contractors differs from one country to another. In certain countries, self-control exercised by contractors should allow the relaxation of some controls which are redundant and costly. Where good insurance-backed *guarantees* are provided, then it is a matter for the client or insurer to decide what level of independent control, over and above the minimum required by the State for health and safety purposes is desirable. Quality assurance must take part in this rebalancing, by making control more efficient, directed more towards the process and with increasing responsibility of the main parties in the project. In other countries, a phase is doubtless needed where independent supervision should be reinforced.
- 6.37 More advanced types of control should still be developed and formalised based on *labelling* of buildings, aimed at measuring the performance and safety of buildings on completion of the works, especially with regard to basic requirements. This is the objective of the 'Qualitel' labelling system in France. This will require considerable progress in methodology and procedures. By making the market value and saleability of buildings dependent upon clearly measured standards of quality and performance, such labelling systems will make developers and contractors more responsible for quality and specification level, and should enable direct third-party controls on construction to be relaxed.
- 6.38 There have also been various proposals for a *log-book system* for buildings, in which initial specifications and performance, modifications, extensions and routine maintenance are recorded, possibly linked to periodic third-party inspection and testing (say every 5 years) as a condition of building insurance. This is a further step in the development of controls which most countries are not yet ready for, but would be a further incentive to improve quality and specifications.

Liabilities, Guarantees and Quality

The GAIPEC Proposals

6.39 In 1990 the European Commission asked four committees representing all sides of the construction sector (*Groupement des associations inter-professionnelles européennes de la construction* - GAIPEC) to discuss proposals for a common European liability regime, covering acceptance, liability, guarantees, and financial and insurance cover. The GAIPEC report was made public in September 1992. The proposals from GAIPEC as they stand include a 5-year liability period (but without strict liability), and with a guarantee (warranty) available to clients and subsequent owners/occupants, but only compulsory for dwellings. A Commission Staff Discussion Paper on the GAIPEC document was issued in June 1993. This raises a number of issues for discussion, which are summarised in the box below (Figure 6.1). Further discussion on all these issues will be required before decisions are made on Community action.

- COMMISSION STAFF DISCUSSION PAPER ON GAIPEC: ISSUES FOR DISCUSSION

 - The benefits from taking action. These could include:
 - improving the freedom of movement of professionals;
 - eliminating distortions in competition caused by differing costs of guarantees and insurance;
 - providing better consumer protection;
 - rationalising subcontracting rules by putting all parties under the same liability regime;
 - making existing EC legislation on public procurement and construction products more effective.
 - Obstacles to action:
 - it is not clear that there is justification for EC action if the different national systems do not constitute a significant barrier to trade;
 - problems for national legal systems which have different bases;
 - it is not clear that consumer protection is adversely affected by current national rules.
 - The form of action which could be taken:
 - mutual recognition of national legislation;
 - a standard EC form of construction contract which defines the liability of the parties;
 - a Directive, which could have various forms.
 - Detailed questions on the GAIPEC proposals:
 - scope: whether to include public buildings, public works, repair and maintenance work, services as well as works, equipment and components;
 - details of acceptance, that is, when and how the liability begins;
 - the burden of proof;
 - the time limits;
 - the form of financial guarantee or insurance backing;
 - the quality control requirements: independent inspection, QA requirement on contractors, requirements on the use of products.

FIGURE 6.1 GAIPEC: ISSUES FOR DISCUSSION

National Differences

6.40 There is a consensus (but not unanimity) in the industry that clear and compatible national liability regimes, or else a single European regime, are necessary. There are some strong views, however, that national laws should

not be changed. There is no agreement on the conditions and procedures for such a system. At present there are widely different legal structures, including systems enshrined in the civil code with strict liability as in France, Belgium, the Netherlands, Spain and Italy, systems with contract conditions laid down by national regulations as in Germany, and systems based on the law of tort in which claimants have to prove liability, as in the UK. The law of tort proved during the 1980s to be unworkable, and led to the development of 'collateral warranties' - in effect, subsidiary contracts between the consultants or subcontractors and the final customer (who may not be the developer). These collateral warranties are disliked by all except the lawyers.

- 6.41 The statutory liability periods also vary from 1 or 2 years under the VOB (contract conditions for building under the public procurement law) or 5 years under the BGB (Civil Code) in Germany, to 10 years' strict liability in France, and a complex system of time-limits with a maximum 15 years (extendable) limit of liability in the UK.
- 6.42 Insurance arrangements also differ.
- In all countries the designers and consultants can take out *professional indemnity* insurance to cover their liabilities, but the formula varies (annual cover, retrospective cover, or forward cover for the full liability period). In France it is compulsory. In most countries it is required by contract or by the professional institution, and in some it is optional and not usually taken out.
 - In some countries where the civil code defines the *liability of contractors* for latent defects, contractors can also take out cover for their liability for defects, as well as the normal all-risks (fire, theft, third-party damage) cover.
 - Developers or clients can also take out *latent damage insurance* for their project, usually for a 10-year period, which enables the costs of repair to be paid without waiting for claims against the responsible parties. Some of these policies also include the professional and defects liability cover of all the participants in the project as well, so that there are no subsequent claims on other parties.
- 6.43 Only France has a system in which insurance is obligatory for contractors, professionals, suppliers and for clients. Moreover, insurance policies cover future claims over 10 years with a single initial premium. This system is linked to the system of technical control, paid for by the client or developer but reporting to the insurer, which is obligatory for housing and public buildings, and gives a discount on the defects insurance premiums for other projects. The technical control bureaux check designs and site construction, and are able to build up good databases of defects and their causes, assess the risk of different design solutions and products, and suggest directions for new research. They also control the use of approved products through the *avis techniques*. The insurance is also linked to the registration and qualification systems for contractors and professionals - the OPQCB for contractors and QUALIFELEC for electrical contractors - which is obligatory to obtain insurance and classifies contractors and consultants on the basis of their capacity and their claims record.
- 6.44 Belgium has a similar system, without compulsory insurance, but with an influential technical control bureau, which has close links with the research body CSTC (*Centre scientifique et technique de la construction*) and acts as an effective channel of feedback from defects and quality problems to research and regulations.

- 6.45 In other countries there may be contractual obligations to take out insurance, or powerful incentives to do so. This is the case for new housing in the UK, where building societies and banks will only provide loans for the purchase of new houses if they are covered by the NHBC guarantee against structural defects. NHBC is an insurance body, which sets its own technical standards, inspects building and provides the guarantee.

Guarantees

- 6.46 It is the Consultants' view that increased involvement of the insurance industry in the provision of guarantees and latent defects insurance can make a major contribution to the improvement of consistent quality and consumer protection, and to a large extent reduce the difficulties in establishing a common European liability regime. Insurance-backed guarantees can be provided with different periods and different extents of cover at the clients' choice to suit the circumstances of individual projects. For example, contractors might be able to offer a 2-, 5- or 20-year guarantee. This would then become a financial decision, longer periods involving higher insurance premiums and more stringent technical control requirements. Overall, the increased insurance and control costs for longer guarantee periods would be expected to be more than offset by improved quality and reduced defects and repair costs. For individual projects, the longer the period of guarantee (and hence higher quality margins) the higher (probably by a few percent only) would be the initial construction cost, but the client would be clear as to the choice being made.
- 6.47 There would not necessarily be any need to make such a system compulsory. The lending institutions would control its application. There is a strong case, however, for making a minimum level of guarantee compulsory for housing, as in the NHBC system, both to assure consumer protection for the individuals who are least able to look after themselves, and to make the insurance system viable by providing a stable base load of risks which are not self-selecting. One of the problems with voluntary insurance is that clients would only seek cover for high-risk projects.
- 6.48 Insurance might be provided by the commercial insurance market, by mutual bodies set up for the purpose of construction guarantees like NHBC, or if necessary for an interim period by a State body able to carry the risk until the system was well established. The commercial insurance market is generally very unwilling to extend its risk in the area of construction, partly because of past experience of crippling claims.
- 6.49 There would be several consequences of extensive insurance-based guarantees.
- The insurance bodies will require access to an accurate and reliable register of contractors, specialists and designers, with good information on their specific areas of capability, work load capacity, and claims record. It will oblige the industry to set up such a qualification system and make it work. It would therefore not need to be compulsory and any contractor or designer could offer uninsured and unguaranteed work if they wished. Conversely, firms could bid for work outside their own territory with the backing of insurance and guarantees from their own insurers, or could get insurers in the host country to provide insurance on the basis of a recognised registration.
 - Lead contractors or project managers would need to ensure that the designers, specialist contractors and suppliers with whom they work on any project are also insured and guarantee their work.

- After experience has built up, clients and their insurers will be able to determine the appropriate level of technical control and inspection on each project according to simple criteria, and by the financial incentive of discounts for the use of approved technical controllers.
- Contractors would be able to compete on the basis of the level of guarantees and cover they are able to offer (or the cost of their cover). This is a measure of quality and would enable the industry to pull itself away from damaging cut-throat price competition.
- Architects and consultants would also eventually be able to promote their services by the demonstrable provision of guarantees. This will ensure a continuing role for independent consultants as a mechanism for client protection, and redress the poor image they have acquired in recent years by seeking to reduce their legal liability. It would have the consequence of separating the design industry into those consultants and firms with sufficient experience and good record to offer independent and guaranteed consultancy services; those able to provide design bureau services to clients, other consultants or to contractors but not carry the full risk of design and supervision; and those with insufficient experience, training or with a poor claim record who would still be able to work as design employees of consultants or contractors.

Registration and Qualification

6.50 There is strong support amongst customers and some governments for registration and qualification of contractors, and there is discussion of proposals for prequalification systems. These can be viewed as three stages in demonstrating the performance of firms:

- *Registration* is the first stage of establishing the legitimacy of construction firms or consultants and their compliance with regulations, tax requirements and other obligations.
- *Qualification* is the classification of contractors by type of work, experience and capacity, by an independent body.
- *Prequalification systems* are standardised procedures by which firms can demonstrate to clients their performance against a series of criteria, such as quality assurance, time/cost performance, training, health and safety, research, claims record, etc. This requires a set of mutually agreed norms set out as a Code of Conduct.

6.51 Registration and qualification systems exist in various forms in different countries.

- In Spain, all construction firms must be registered as such before they can do business (in addition to the normal registration of companies); and then in addition must be classified by the Finance Ministry in order to bid for public contracts. This classification specifies the size of contract and type of work they are qualified for. Professionals are registered by their colegios.
- In France, as described above, registration and qualification is basically a requirement of the insurance system and includes a grading based on claims record.
- In the UK, there is no formal registration of contractors, but many client bodies maintain prequalification lists. There is no statutory registration of contractors or consultants, except for gas fitters, reservoir engineers and

architects (but with no grading for type of work or quality). The government recently proposed to abolish the architects' register as part of a general policy of deregulation, but the proposal has been dropped. The NHBC, a mutual body, registers house builders. There are also voluntary schemes run by various trade associations, such as electricians.

- Italy requires registration for public contracts, with classes of work and contract size categories. This system is subject to review and there are proposals to abolish it.
- Dutch contractors need to register and the law defines 30 different construction specialisms. The register is controlled by the Chamber of Commerce, and new applicants to set up companies must pass an examination.
- Portugal, Belgium and Greece operate registration systems for contractors with classification by class of works.
- In Germany, registration is required with chambers of industry and commerce or with the chambers of crafts.
- In Denmark and Ireland there is no registration of contractors. Luxembourg operates a general permit system.

- 6.52 It is the Consultants' view that an effective system of registration and qualification that covers all the actors in the construction process is essential to ensure quality and consumer protection. There can be separate national systems, or even competing systems within countries, as long as all are run according to certain common standards and criteria. There ought not to be statutory obligations on clients to use only registered or qualified contractors, but the systems should be sufficiently universal that there are strong incentives for all firms to belong, and the use of suitably qualified firms and individuals should be required by financing institutions, insurers and by public clients as part of financing conditions and selection procedures. Small firms serving local markets need not be obliged to belong to the qualification system, but customers need to know the risk of using an unqualified contractor or consultant. Registration, however, might be obligatory, to ensure compliance with legal and fiscal obligations.
- 6.53 As we discussed above, systems which are run on a mutual basis by the sector and serving the needs of the insurance system are best because they introduce a financial incentive to quality performance.
- 6.54 Contractors, specialists and professional firms should be served by the same system, or a set of inter-connected systems to a common basis. In other words, the registers for separate specialisms could be administered by the relevant trade body or professional institution, but with the data in a common database.
- 6.55 There also needs to be a national register of individual craftsmen and professionals, available to potential customers and employers, and also as a basis for determining the technical capacity of firms.
- 6.56 Australia is currently beginning to implement an interesting system, initiated by a cooperative body, the Construction Industry Development Association, with a code of practice, and a series of key performance criteria for firms, which includes technical capacity, financial capacity, quality assurance, R&D, training, labour relations, health and safety, total quality management, claims performance, time performance, exports and domestic content. Firms

undertake to declare their performance on these criteria to customers during bidding. This is linked to registration systems run by sectoral bodies (for example, the Building Services Corporation) which classify firms and individuals with three classes of licences: firms and sole traders licensed to undertake contracts; individuals licensed to supervise but not take contracts; and licensed workers.

The Development of Quality Management

- 6.57 Until recently the search for quality did not involve a generalised and structured procedure. Such an approach was limited to the industrial sector. Over the past few years, we have been witnessing a considerable increase in awareness by some construction firms in the sector, but also among architects and engineers, of the importance of quality as an essential factor of competitiveness and progress, and as an aid to the development and organisation of the firm. The reasons for this are both economic and commercial:
- The search for quality makes it possible to reduce production costs because 'non-quality' is costly, whether it appears during the work or after delivery, and defects and losses generate additional costs, delays and a lack of client satisfaction.
 - Quality is part of the brand image of a firm. It helps promote better sales provided it is demonstrated, because clients want to have more confidence in their suppliers.
- 6.58 Quality assurance (QA) developed at first for big projects with considerable risks (nuclear plants, bridges, tunnels, etc.). Clients asked contractors for quality assurance plans for their services. These requirements are now extending to other clients, in both the housing and civil engineering sectors, and for smaller projects.
- 6.59 This growth in quality assurance in the sector was encouraged by the public authorities especially in the UK, Denmark, the Netherlands and France. Third-party certification of contractors which has been set up in each country is a powerful incentive. Most large contracting firms anticipate that it will be a qualification criterion for national and international contracts.
- 6.60 The largest contracting firms have adopted quality systems formalised in quality manuals and describing in detail the management of their projects: either with a view to safety and improving their internal operation; or with a view to marketing and third party certification.
- 6.61 The contractors generally have a positive view of quality assurance. It is a strict safety school, making it possible to avert costly mistakes. However, they fear an excessive increase in the number of unnecessary documents which could lead to a narrow bureaucratic view of quality management.
- 6.62 It is now established that the development of quality management in the sector is heading towards greater acceptance of responsibility by the players involved, and the growth of self-control. The control exerted by clients can therefore move away from close supervision of works and control of problems towards supervision of the self-control of the contractors, in proportion to the degree of trust generated by quality assurance and the effectiveness of self-control.
- 6.63 The impact in the long run may be considerable:
- in economic terms:
reduced cost of technical controls (and relaxation of the activities of technical controllers),

quicker and more appropriate action by project management when things start to go wrong,

fewer errors, because of prevention;

- in terms of the work climate:

fewer disputes and less litigation,

more awareness of their responsibility by players and the work-force.

6.64 Small and medium-sized firms should be able to join this movement provided the standards for quality assurance (EN 29000) are eased and adapted to their specific features. Project managers, architects and engineering firms also need to take steps towards the process of quality management during the design phase. This is happening in the UK and Denmark.

6.65 One of the problems which will have to be investigated and resolved before quality management is fully accepted is the conflict and repetition which can be caused when different firms working on the same project use different QA systems, with different documentation requirements. It also has to be recognised that QA systems along the lines of EN 29000 do not actually raise the level of specification and standards: they are designed to ensure that agreed practices are followed. They may indeed cause a reduction of performance if workers and managers are more concerned with completing paperwork associated with QA schemes which are too bureaucratic, than with improving quality.

6.66 It is generally now recognised in the industry that total quality management systems should be encouraged and promoted, but also made consistent with the other systems mentioned above: prequalification, liability and insurance. The criteria for allocating contracts must also evolve towards greater consideration of the quality criterion. The long-term aim of the industry should be to move towards 'zero defects' and to get work 'right first time', making it feasible to provide good guarantees, at low cost, and to relax the need for costly independent supervision and control.

Chapter 7 - TECHNOLOGY AND INNOVATION

Technology Change

- 7.1 Construction is not, as frequently claimed, an unchanging industry with traditional technologies. There have been dramatic changes in the technology of construction since the 1950s. These include:
- materials: lower cost and higher performance steels; lightweight, quick-curing, and specialist concretes, and growth of ready-mix concrete; low-cost high-quality float glass and strengthened glasses; use of plastics such as uPVC; lower cost aluminium; new adhesives creating better laminated and particle boards;
 - improved and more extensive use of machinery, both on site and in the manufacture of materials and components;
 - development of many prefabrication systems, particularly cladding systems using glass, synthetic stone or composite materials; and more extensive factory production of subsystems and components;
 - improved building services and controls and the beginning of the development of intelligent buildings; building design changes to cater for IT, telecoms and cabling in buildings;
 - application of CAD, now becoming widespread;
 - tunnelling technology;
 - new structural solutions, such as structural glass, lightweight suspended structures, longer span bridges.
- 7.2 Project management techniques have also been developed and improved, and make extensive use of computers. Risk appraisal is now undertaken in a more analytical manner for large projects. The next 20 years will see a continued and accelerating speed of the application of technologies developed in the past decades, as well as many new opportunities and needs for innovation. Changes will particularly be required to cope with the increasing urgency of environmental protection, energy conservation, and health and safety issues.
- 7.3 Some of the most important changes are likely to be:
- extensive use of Electronic Data Interchange (EDI), computer-aided design (CAD) and computer integrated manufacturing (CIM);
 - use of composite materials - fibre-reinforced concretes and plastics - and high-strength concretes;
 - improved cladding systems;
 - building for recycling;
 - improvements in building services; passive design; active elements in the building envelope;
 - industrialisation of building: less site construction and more off-site manufacturing;
 - developments in more responsive and flexible intelligent buildings;
 - gradual introduction of robotics leading to extensive automation in factories and on site.

- 7.4 Many changes will be induced by the changing requirements of the user sectors of the construction industry, for example:
- housing: demand for healthy, non-allergenic housing; low-maintenance housing; more communal housing for elderly and single person households;
 - commercial/industrial: more adaptable buildings; long-period guarantees; fast and reliable programmes; better air and internal environment control;
 - civil engineering: more commercial demands of private utilities; advanced public transport technologies; more and more demanding effluent and waste treatment.
- 7.5 There are also some 'long shots' which the industry should be thinking about now, such as: extensive use of underground space for industrial activities, storage, nuclear waste and transport arteries; large enclosed spaces (city domes and agri-domes) for local climate control, for arctic/desert agriculture and for subsea/arctic communities - ultimately for outer-space colonies; terraforming - being developed for outer-space colonies but applicable to converting deserts to agriculture; synthetic building material (SBM) from sea water with photovoltaics - or other novel technologies for low-energy and low-pollution materials; and new technologies for urban people-movers.
- 7.6 Some of these new technologies and materials will be adopted or adapted from, or developed in conjunction with, other industries, especially the aerospace and automotive industries. The major contractors and materials producers should be forging links with those industries.
- 7.7 At a global sector level, the construction process is changing, as discussed elsewhere in this report, from a labour-intensive site-based process to a more industrialised one. More of the elements and components of projects are fabricated off-site, delivered just-in-time, and assembled using relatively simple skills. The extent of this varies: it is evident, for example, in timber-framed housing and in large steel-framed buildings with modern cladding systems. Bathroom units and toilet pods can be delivered ready to connect up. The technology of precast concrete elements is also advancing, notably in Finland, using CAD-CAM with reusable formwork elements. At one extreme is the potential for fully manufactured housing with retail design/sales points and fully flexible manufacturing, which is now available in Japan. At the other extreme, traditional craft skills will always be used for maintenance, conservation and most fitting-out tasks.
- 7.8 Building systems, or large-scale prefabrication, have a bad reputation in Europe. This is partly because of the poor design quality of system buildings built in the 1960s for low-income housing, its association with problem housing estates, and particularly the image of awful design in the mass-produced building of the former communist countries. It is also because of the failures which occurred in the 1960s and 1970s, which were caused by failure to consider the implications for operative training. Whereas traditional techniques are well understood, tried and tested, system techniques require new training and new site techniques to allow for high levels of precision site assembly. Building systems are also resisted by architects as they are seen to take away the design skills. It will be possible in future to develop systems for manufactured building or building with a high degree of prefabrication, which will avoid the problems of system building in the past. The power of CAD with flexible manufacturing systems will enable the architect-designer to produce individual buildings, and the site assembly workers will also need to be trained and employed by the manufacturer.

- 7.9 The future improvements in productivity and value-for-money will come from restructuring and managing the whole supply chain from raw materials to site erection. They will result from putting research, capital investment and computer control where it is most effective, in industrial manufacture of components, in simplified distribution, and making the site process easier to manage. This requires radical changes in product manufacturing, and a greater involvement of contractors and manufacturers in each others' stage of the process. It means an enhanced role for designers and project managers, who must specify and control all stages of the process. It creates a long-linked series of industrial processes, and a concern with the total logistics of the chain. It is this sort of technological development which gives the prospect of cheaper, more reliable, quicker and better performance in construction, which will enable needs to be met and stimulate the level of demand for new construction.

Dissemination and Innovation

- 7.10 The speed of innovation needs to be increased. There can be several reasons for slow innovation:

- the decision-makers (customers, project managers or specifiers) do not know about the options for using new products, materials or techniques;
- the work-force or the suppliers do not have the skills and knowledge to apply them;
- there are risks because not enough is known about the long-term effects - this is particularly important because of the long life of the works in which new materials, products or techniques are embodied and the impossibility of testing them for such long periods.

All of these come down to lack of knowledge. The last of these, risks because of lack of knowledge of long-term behaviour, can be reduced by good testing and an effective system of technical approvals (*agrément*).

- 7.11 The first objective must be to establish the wide use of tried and tested methods, and steadily improve them by capturing new ideas from individual projects, by the better dissemination of information. Innovation is the application of technology in new ways. Most of the technology needed already exists. For example, there are over 20 000 construction materials on the market but only a few hundred are in common use. Innovation requires a perceived need or problem, and the information on how to solve it. The user has to know where to find the information.

- 7.12 Most technology change is not revolutionary, but consists of small improvements in materials specifications, in product ranges, in fixings and adhesives, or in hand-tools and equipment. These do not entail major changes to the process organisation or the basic skills of operatives, but do require a continuous updating of the product and process knowledge of designers and operatives. This dissemination of knowledge is essential not only to ensure that new products and techniques are known about and applied, but that they are properly used. For example it is essential that operatives know about the application conditions of new adhesives, to prevent failures. Site workers very rarely read the *agrément* certificates and manufacturers' literature.

- 7.13 Because the construction industry is made up of very many small firms, it is particularly difficult to disseminate information effectively. An example serves to emphasise the importance of information diffusion to small firms. Condensing boilers have been available for domestic central heating from some

time, and have been shown to have important energy-saving advantages. They involve changes in the water temperature, and sizing and specification of radiators and the bore of piping. In the Netherlands they were heavily promoted by manufacturers and the gas utilities. In the UK, although manufactured, they are rarely installed because customers are not aware, and because installers, who are mainly small firms or self-employed gas installers, work on rules of thumb and experience, and have not been taught how to design and install a condensing boiler system. Installation is only carried out by a few large firms and is therefore too expensive for customers to benefit from the energy savings, and it is hard to find an installer. One factor in the difference between the UK and the Netherlands is the network of small builder in-service training centres in the Netherlands.

- 7.14 Because innovation in construction has been slow relative to most manufacturing industries, and because the working conditions for site workers have not fundamentally changed, construction has become an increasingly less attractive career. It has tended more and more therefore to be an industry which absorbs the less qualified members of society. This is made worse by the increasing levels of immigration into and across Europe. Many of the unskilled immigrants find work on construction sites. The consequence is that the educational and skill level of site workers has not improved, and according to some has got worse since the 1960s, and there are increasing problems of literacy and language. This can actually lead to technological regression, especially when new techniques are tried and fail because of inadequate information, training and skills.
- 7.15 One major problem in innovation in construction is therefore the diffusion of large volumes of technical information. In an industry made up mainly of very small firms and self-employed workers and professionals, it is essential that the individuals have easy access to all sources of advice and information interchange. The main sources of information for builders, construction workers and professionals include:
- their training college or professional school;
 - the building materials merchants;
 - manufacturers' technical representatives;
 - their professional institute, or trade association;
 - the local authority planning and building control officers;
 - their colleagues and friends in the industry.
- 7.16 An ideal system could be envisaged in which each town and locality has a 'construction park' (analogous to an industrial park) - an easily accessible edge-of-town complex where construction services are concentrated to help promote exchange of information. This would be the place at which the builders' merchants have their yards and product displays, the planning authority has its office and building inspectors are based, the local technical college has its training centre for construction courses, and there is an information centre displaying information on regulations, standards, legislation, products, and courses. This would also attract estate agents' and surveyors' offices, developers' exhibitions of property, architects' and engineers' studios and offices, and the offices of medium-sized construction firms. Most small builders visit a builders' merchant one or several times a week, usually in the early morning before beginning work on site or at the end of the day: they should find all the information, support and training they need at the same site.

The public would also visit construction parks to buy do-it-yourself materials, and obtain information about local contractors and services and new products, and see displays about local development plans. This would also help the public to be exposed to information about the availability of new products and hence the benefits of new construction so that there is a real demand for better construction. Better informed customers are also better clients.

- 7.17 In Spain, the system in which the *colegios* of architects, engineers and technical architects control their members' work makes the *colegios* an important source of information. *Colegios* are based in each community or province, and professionals need to visit them frequently to submit documents for approval. They provide newsletters and bulletin boards, libraries, a technical advice service, and the larger ones have a bar or cafeteria where members meet to exchange information and ideas. Such common contact points are essential for dissemination of information, but are missing for most professions and for small builders in most countries.
- 7.18 The Netherlands has begun to experiment with installing microcomputers in small builders' homes, linked into a network from the local training centre. The network provides programmed learning, databases, newsletters and electronic mail, and updates on regulations. This could, in the longer term, be an important way to disseminate information.

Differences within the EC

- 7.19 As part of the study, the Consultants considered whether there were any significant technology differences between countries which could lead to differences in competitiveness. There are clearly differences in the methods and materials most commonly used in different regions of the EC, mainly for climatic reasons. Construction technology is very mobile, however, and there is no problem of access or availability of technology because of proprietary technology or know-how.
- 7.20 There are, nevertheless, some areas of particular national strengths in specialist technologies (for example, nuclear power construction in France, offshore construction in Scotland, water-related construction in the Netherlands, cladding systems in Germany). There are also particular strengths in some of the EC's neighbours, such as prefabricated concrete structures in Finland, offshore construction in Norway, large panel construction in eastern Europe, underground construction in Switzerland.
- 7.21 The single market, particularly open public procurement, will generate more cross-border tendering and increase the international dissemination of technology, particularly in specialist areas such as tunnelling, airports, urban transport systems, power-stations, etc.
- 7.22 There are, however, very different national systems of training, and a real problem in many countries of dissemination of technology and product knowledge to small firms, craftsmen and to older workers, as described above. The training problem means that many new innovations are very slow to be adopted, and national traditions of construction change slowly. Trying to introduce new technology more quickly than the training of the labour force can adapt leads to problems such as the failures of system building in the 1960s.
- 7.23 It is clear from this that the main problem of technology is not the level or coordination of research and development, but the effectiveness of training, counting professional development, and implementation of new standards and planning regulations.

Differences between the EC and the USA and Japan

- 7.24 The Consultants also reviewed technology and research systems in the USA and Japan. In general, the EC has no real technological gap compared with either the USA or Japan. The USA has a particular reputation for fast track commercial building, for example, and Japan for factory production of flexible housing systems. In their construction research systems there are very notable differences, however, which may well lead to a technology gap in future if the EC does nothing about it.
- 7.25 The USA, despite having a very regionalised industry, has national institutions such as the Construction Industry Institute (CII) and the Civil Engineering Research Foundation (CERF) for funding and coordination of research into major problems by the main players in the industry. It also has a powerful spin-off in certain technologies from the heavy federal defence and energy programmes. US firms have a dominance in process plant construction, but mainly because of the financial strength of the major firms, which control several of the EC players. On the whole, however, the EC construction industry has no technological disadvantage against the USA and standards of design and construction seem generally better in the EC than the USA.
- 7.26 Japan has powerful research institutes in the Big 5 contractors which dominate the sector and the government takes a very active role in planning and coordinating research programmes. The Big 5's institutes have a high public profile, and indulge in research in long-term and glamorous topics such as robotisation, space structures, seismic control and building automation. Japan also has a culture of promoting small technical improvements (*Kaizen*) by workers at all levels, which does not historically exist in Western societies, but is now being promoted in manufacturing industry in Europe by total quality management systems.
- 7.27 Japan, because of the involvement of government and the big financial groups in industrial policy, is able to take a very long-term view on research. This is considered to be true also in Germany, because of the extent of bank ownership and the stabilising effect of supervisory boards, but much less so in most other EC countries. The dominance of stock-market capitalism in the UK is thought to be particularly damaging to industry involvement in long-term research because of the stock market's concern with short-term profits.
- 7.28 Construction research in the EC generally is fragmented, with little communication between research bodies in different EC countries, and little communication between government, university and industry research centres. The EC countries differ greatly. More research is needed on the different systems, and the strengths and weaknesses of each. Some respondents to this study thought that Germany and the Netherlands are good at focusing and coordinating research and the UK and the less wealthy countries are generally poorer at it; but these common perceptions may not be wholly correct.
- 7.29 On the other hand, the national diversity in Europe seems also to be a particular strength, and could be even more so if harnessed through good coordination and information transfer. The main EC countries each have very good systems of research bodies, developing appropriate technologies and standards. The smaller countries also have research bodies which at least monitor research and standards developed elsewhere and research local problems. As far as we know the US states do not have such effective research systems. The US CERF has set up a research programme to find out why Europe is much better than the USA in transferring research results to firms. In the USA, and particularly in Japan, the big national contractors are excellent, but at the local level construction techniques are generally considered to be very traditional.

7.30 The EC RTD (Research and Technological Development) Framework Programme has no explicit policy for construction research. There are only a few projects related to materials and energy projects which are relevant to construction, despite the significance of construction in GDP and its importance for the competitiveness of the rest of the economy. One of the main projects of relevance to construction is the recently commissioned large-scale test laboratory for structural dynamics studies of full-scale buildings and structures, built by the EC's Joint Research Centre in Italy. There are also projects related to materials relevant to construction. The total level of EC funding, however, is relatively small.

Policy Priorities

7.31 There is great scope for improving productivity in construction by new techniques and improved technology, and for developing new products and processes, particularly to respond to environmental pressures. If action is not taken, there may be an increasing risk of penetration of the EC industry, particularly in specialist public works areas, by global contractors and equipment suppliers, particularly from Japan.

7.32 *Policy objectives should respond to three priorities:*

- first, to improve dissemination and adoption of existing technology;
- second, to make research and development (R&D) more effective by better coordination and information exchange;
- third, to raise the volume of R&D in construction towards the levels of other industries.

Dissemination

7.33 First priority must be to improve the training and educational systems for the construction industry both in the amount of training and in its responsiveness to new technologies, to promote adoption of the best techniques and products.

7.34 The discussion of 'construction parks' above (para 7.16) illustrates one approach to better dissemination. There must be development of some sort of network of local resource centres providing training and information to individuals and small firms in an easily accessible way. Each country may find its own solution to this. They could be run by a training body, trade associations or professional institutes; or a research and dissemination body; or they could be run on some form of franchising arrangement.

7.35 Better marketing and publicity by all firms and representative bodies in the construction sector are also essential tools of dissemination of ideas and information about innovative products and design. Positive news items about great projects are important. Expo '92 was a supreme example that shows the movement in the right direction: whereas previous Expos have had some spectacular buildings to show off the high-technology exhibits inside, Expo '92 was primarily an exposition of innovative building and civil engineering.

7.36 Government and public bodies have a duty to promote innovation in public procurement of buildings and civil engineering. A few public projects could be used as technology showcases - as French policy has tended to do.

7.37 This report discusses elsewhere (para 6.50 *et seq.*) the important role of registration and qualification systems in contributing to the improvement of quality. They can also be used to promote innovation and research. The recently introduced initiative by the Construction Industry Development

Agency in Australia (see para 6.57) includes a registration system for contractors and consultants, which is linked to a proposed rating system to be applied by clients in assessing and selecting bidders, and involves such factors as research, training, safety, exporting, etc.. It has minimum targets for the percentage of turnover spend on R&D (rising through time), by contractors and consultants, and for certain contracts, both public and private, these are recommended to clients as eligibility criteria for bidders. The development of a similar system of voluntary guidelines could be investigated on a joint basis by the parties in the sector in Europe.

- 7.38 Government can also help promote innovation through regulations. Environmental legislation in particular, and construction standards and planning controls in general, are constantly raised for public purposes. The changes often greatly stimulate innovation and quality improvements. Government regulations should reflect current good practice in the levels set.
- 7.39 The construction sector would benefit from the fostering of a technology-rich environment more generally. Germany and Japan are frequently quoted as examples of nations that have developed technology-rich environments. Engineering and science are highly regarded by society generally and government policy is explicitly supportive of industry. Education and training are organized to provide a work-force that is technologically competent and motivated to use and develop new technologies. Companies regard investment in R&D as essential and maintain it, even in recessions. Attitudes to investment generally are concerned with long-term issues. Thus there is an emphasis on quality and certainty; and an understanding that these are essential for long-term productivity and profitability. Such an approach could usefully be encouraged throughout the Community.

Coordination between Countries

- 7.40 The diffusion of technology in construction is handicapped by small fragmented markets and uncertain demand, complex liability legislation and by a lack of commitment to new technology in many cases. There is a need to address these structural weaknesses and build on the strength of each country to formulate a common EC strategy which alone can give the European industry competitive advantage.
- 7.41 Traditionally construction has had national research programmes, but there are important reasons why there should be consideration of a convergence of national attitudes towards research, development and innovation. Environmental policy, competition from the Far East, information technology, the harmonisation of codes, standards and regulations throughout Europe are principal factors that require a common purpose and approach. More coordination is needed at the EC level, and an institutional arrangement is required to plan a long-term programme.
- 7.42 ENBRI plays this role in respect of 10 government building research centres. This role needs to be extended into a European Centre for Construction Research and Innovation, representing the whole research community, that plans a strategic long-term programme which builds on the strengths of each country, coordinates R&D, encourages international cooperation, raises the profile of construction with national governments, and encourages industry to work with universities and research institutes.
- 7.43 Arrangements are needed for publishing research information so that it is readily available to practitioners as and when they need it in solving day-to-day problems. This could well take the form of an EC information network that connects those with problems to those with possible solutions, and does so rapidly and cheaply. A database of existing research programmes should be

set up to provide the core of such an information network. An important part of this should be a defects database that will help designers to avoid repeating mistakes and help diagnose problems in the built environment.

Coordination between Actors

- 7.44 To obtain the maximum advantage from technology, the construction sector and its firms need to remedy major structural problems, such as the separation of design from construction activities, the uncertain role of the manufacturer in the design process and the fragmentation at professional and educational levels throughout the industry. These inhibit the interchange of information between actors and collaboration in seeking improvements to products and processes.
- 7.45 As much as coordination between countries, the sector needs to improve coordination between the separate sides of the industry. In particular, since most research and innovation is carried out by materials and product producers, collaboration is needed between product producers, specifiers and the contractors who use the products. It is already evident that some of the most innovative contractors are those which are part of large groups of companies including materials and product suppliers. The automotive industry uses close links between the constructors of vehicles and the component manufacturers to develop new technologies and new models in collaboration. The construction industry should do the same, but generally the two sides do not collaborate and indeed the contractors' main purpose is usually to obtain products with the lowest acceptable specification at the lowest possible price and to avoid innovation which might lead to later defects claims. The major contractors should take a lead in helping suppliers to develop better products and materials and to adapt site processes to them.
- 7.46 Similarly, product and materials manufacturers should work with customers, consultants and contractors to provide information, training, product support and, where appropriate, installation or erection services to contractors, project managers and specifiers, and so promote innovation.

Volume of R&D

- 7.47 Despite the rapid changes already underway, there remain important gaps in the industry's R&D. As a result, the EC's built environment falls short of what could be achieved in supporting a highly developed society moving into the 21st century. Therefore a larger proportion of EC, national and regional government research funding should be diverted to construction research.
- 7.48 R&D expenditure on construction needs to be increased from its present level of about 0.1% of GDP, to at least match the average of other sectors, around 0.2% of GDP, and must be shared between government, industry and clients. This would be equivalent to 2 to 3% of construction industry turnover. There should be incentives for industry to carry out research, particularly in collaboration with universities.
- 7.49 The single market should provide a better basis for funding R&D. This is because R&D is expensive and so needs a large market to justify it. To take full advantage of the EC's big construction market, international collaborative R&D should be encouraged. The EC's RTD Framework Programme should be used to promote construction research, particularly in the higher risk and longer term topics.
- 7.50 Belgium has a levy system, collecting 0.1% of turnover of contractors, to finance research carried out by the CSTC. Sweden and New Zealand are also known to have a levy system to finance research. As several EC countries already operate a levy to finance construction industry training, this is one way of

increasing funding which should be easy to implement, and could be considered. The Construction Industry Council (CIC) in the UK is studying options for financing and coordinating increased research and dissemination activities for discussion with the UK industry, and this includes various options for levies.

- 7.51 As discussed above, the product and materials manufacturers have a very important role in construction research. The fragmented nature of the construction industry is a barrier to investment by industry in R&D. Vertical fragmentation especially can all too often mean that the costs and benefits of R&D are borne by different firms. Also divisions in vertical chains of related processes may well cut feedback loops. This often means that ideas for innovation cannot be applied within the firms in which they arise, and so they are ignored. Therefore, vertical integration should be encouraged by EC support for R&D that requires cooperation between firms linked by vertical production processes.

Priority Research Areas

- 7.52 This study is not intended to, and clearly cannot, determine the details of priority research areas and topics; that is the ongoing task of research institutes and could be coordinated by the European Centre we have proposed. Some key areas which are clear from our discussions with the sector are outlined below.
- The industry needs to devise widely understood measures of the performance of buildings that relate to the needs of users and owners. These might include measures of running costs, maintenance cycles, resale value, etc. In a similar way R&D is needed into performance-based evaluation of materials and components. The aim is to help potential customers make well-informed choices about their new buildings.
 - Environmental issues will require new technologies to be developed. This is discussed in Chapter 9. These include land reclamation, recycling of construction materials, decommissioning, disposal of hazardous materials, and the management of public and private transport.
 - Particular attention needs to be given to joining techniques that are robust and reversible to allow for recycling.
 - Manufacturers should also undertake R&D to improve and extend the performance of existing products. For some materials, e.g. cement, there may well be advantages in looking for applications outside the construction industry.
 - Standard components and systems need to be developed to reduce costs.
 - Intelligent buildings, including active external envelopes and intelligent environments, need to be developed to improve the performance, adaptability and flexibility of buildings.
 - *In situ* diagnostic and repair technologies need to be developed to reduce the costs of maintaining the built environment. It is particularly important also to develop effective channels of disseminating the technology for repair and maintenance, which is usually carried out by small firms and craftsmen.
 - Much further research will be needed in application of IT to construction. CAD, data interchange, flexible manufacturing, and simulation systems will be further developed, to enhance the power of designers, improve productivity and quality, and to integrate the complete design, manufacture, construct and maintenance process.

Chapter 8 - THE NEEDS OF PEOPLE IN THE SECTOR

- 8.1 In the previous chapter we discussed the changes in technology which will increase mechanisation, off-site manufacturing and applications of information technology to the process of new construction. This will be a gradual process, and only affect parts of the industry, but will radically change skill needs and employment levels.
- 8.2 Most construction will always be an individual process, with individual projects designed by individuals for unique locations and needs, managed by individuals, and constructed by individuals for specific clients. There are automated or assembly line industries for the manufacture of materials and components, but in the construction process the designers, managers and workers use their skills to make continual decisions. Also repairing, maintaining and refurbishment of the built environment will always require a great variety of people with distinct skills.
- 8.3 Upon those skills depends the achievement of the objectives which we believe the sector should be pursuing: better housing, buildings and infrastructure, increased quality, improved competitiveness and value-for-money through innovation.
- 8.4 Improving working conditions and job satisfaction, and hence raising recruitment, are the most important long-term aims for the sector. Improving training is the first priority for action. Parts of the sector are known to be users of cheap labour, often temporary immigrants, in a semi-legal manner. This practice is an example of the grey, if not black, economy in action. It is not conducive to the long-term health of the industry. The framework for employment in the sector, which we discuss in this chapter, is one aspect of addressing this issue.
- 8.5 On the whole, the human resource issues discussed in this chapter refer only to contractors, site work, and to the professions. The industrial labour force of materials and product producers does not present similar problems.

Recruitment and Retention of Skills

- 8.6 If nothing changes, the great crisis of the construction industry is going to be the inability to recruit and train enough of the right people for site work. The workforce is ageing, with inadequate retraining or upgrading of skills. Demographic changes mean fewer young people in the next decade, and they will be better educated and more choosy about their career.
- 8.7 Construction work is often seen as an unattractive option. It is perceived as dirty, dangerous, exposed to bad weather, unhealthy, insecure, underpaid, of low social status and with poor career prospects for educated people. Yet many modern construction projects are great works of art, embodying sophisticated technology of materials, machinery and computer systems. They are highly visible and vigorously debated in the media. They change the lives of people all over the world in a direct and immediate way that no other economic activity can do. It is the industry which directly moulds the environment, for good or ill.

- 8.8 In the developed world, the last few decades have been concerned with increasing material wealth and consumer goods at the expense of the environment and of the physical infrastructure and appearance of cities. Housing, workplaces and transport modes will no longer be scarce resources which people have to accept at any quality and any price. The industry has to design, build and market better products with better value for money, and it will need to recruit top-quality people.
- 8.9 The Renaissance architects and builders had a great status in society; so too did the great 19th century engineers who built the canals, railways, roads and bridges which opened up the world and created the Industrial Revolution. With a few exceptions, today's architects, engineers and builders have lost it. The sector must recreate its status as the leaders of the new 'environmental revolution'.
- 8.10 One line of action must be for the construction industry - its firms and representative bodies - to raise awareness of the value and excitement of construction by using the media, by marketing, and by providing good careers information services. But first they must provide good, well-paid careers.

Employment Conditions

- 8.11 The prerequisite for improving recruitment and training is to improve employment conditions in the industry. This has three aspects:
- physical conditions, particularly health and safety;
 - pay and conditions of employment contracts;
 - career prospects, involving retraining and in-service training opportunities.
- 8.12 Health and safety measures are seen by many, both in construction firms and materials producers, as irksome and costly. The industry ought, however, to take an active role in promoting health and safety measures, both to reduce the direct costs of time lost through sickness, disability and accident, and to improve the image of the industry. Not only would that improve recruitment, but it would also reduce the pressure for special employment conditions.
- 8.13 There is a problem of improper competition, when some contractors will evade health and safety measures to cut costs. Rigorous control of health and safety measures is essential. That requires adequate inspection. It is often reported that there are far too few inspectors to cope with present requirements. The Temporary or Mobile Construction Sites Directive will help, by enabling safety plans to be checked as part of building control and by making the safety supervisors and main contractors legally responsible. It is also essential that firms with poor safety records should find it harder to win work. The proposal for measurable codes of conduct, including health and safety performance, as a criterion for selection of tenderers (see paras 6.50 - 6.56) addresses this objective.
- 8.14 It is of particular concern to the unions, represented collectively by the European Federation of Building and Woodworkers, that the levels of so-called 'atypical' work are high and have been increasing, including self-employment, temporary or part-time work, casual work, and short-term migrant-worker contracts with abnormal conditions. It is variously estimated that atypical work makes up about one third of employment in EC construction work, and almost 60% in the UK. The desirability or otherwise of atypical work is a matter for debate. When demand is high many self-employed workers earn and keep much higher incomes than permanent employees, and a high degree of flexibility is necessary to make the industry responsive to fluctuating demand. This flexibility keeps wages low, and is a disincentive to improving training, technology and working conditions, and also contributes to poor quality.

- 8.15 Chapter 5 on competitiveness showed some data on wage costs in the construction industry. There is a wide range and those countries where pay is low will be under increased pressure from migration and from the labour unions to raise pay. We have seen that low pay is related to low productivity and high overall costs. The objective of the whole sector, but particularly those countries with low wages in construction, should be to raise the level of pay and conditions slowly over the next two decades, by raising the level of skills and training and improving productivity.
- 8.16 Measures also need to be taken to limit and reduce the extent of temporary work, self-employment which is aimed at minimising tax and social security payments, and other casual or unconventional work relationships. For some craftsmen, the liberty of self-employment and the opportunity to gain high earnings is an attraction. For contractors, it gives flexibility in adapting to variable work loads. For many workers, however, it is an unfortunate economic necessity because of a shortage of permanent employment. It is best tackled by macroeconomic measures to stabilise construction demand, and by removing the tax advantages of self-employment.
- 8.17 A steadily growing construction demand, with reduced fluctuations, and possible shortages of skilled labour developing within a few years if growth is achieved, will encourage contractors to attract, recruit and train permanent staff, and to provide incentives to keep them. On the other hand, if construction demand is stagnant or declining (Scenario C in Chapter 4), the pattern of temporary work, self-employment and other atypical forms is likely to continue unless legislation is introduced to limit it.
- 8.18 If the strategies proposed in this report are successful, and economic growth and construction output follow a high-growth path as in Scenario A (see Chapter 4), then the pressure on recruitment will be increasingly acute. One of the constraints on recruitment is the traditional difficulty of attracting women into the sector. There are some, but few, successful women architects, but very few engineers, managers, or craftswomen. One of the reasons is probably the traditional image of male-dominated site work, and its tough work conditions. In practice many potential women recruits are driven away by the sexist attitudes of male workers to female colleagues. The industry should attempt to change attitudes, to make positive provisions for female staff and workers, and attract more women. This would raise the image of the industry for both men and women recruits.

Education and Training

- 8.19 It is universally agreed that training in the construction industry needs to be improved. This is necessary because:
- far too many customers have legitimate complaints about unreliable quality and poor workmanship;
 - the changing technology is changing the mix of skills, in particular demanding more flexible skills and relatively more supervisory and independent skills, but the training infrastructure does not keep up with requirements;
 - new technology, products, and regulations create an ongoing need for training which is not being met;
 - the general status of the industry must be raised as discussed above to improve recruitment.

- 8.20 The views on construction engendered by general education are important. There is a bias against technical education and many countries are not producing enough technically competent people. The role and importance of the built environment are not strong messages in schools, despite its importance economically, socially and politically. The professional and industry bodies could help press for inclusion of aspects relating to architecture, civil engineering and urban development in geography, history, economics, science and other school curricula, and could prepare schools materials, sponsor prize competitions, etc.

Training for Site Skills

- 8.21 The main priority for training is seen to be training for site skills, both craft and supervisory. Changes are also needed in professional training, but it is in site operations where the quality and quantity of training most needs to be improved.
- 8.22 Because of the structure of the industry, with mainly very small firms and mobile workers, and the characteristics of the markets which have volatile demand and aggressive competition, there are disincentives to training by individual firms. A supportive public policy is therefore needed, strongly backed by the trade associations and professional institutions.
- 8.23 The industry needs its own system of training centres, nationally coordinated by industry training bodies, such as the CITB in the UK or the GFP-BTP in France. Most countries have a training levy which finances courses provided through the training body and is used to reimburse those companies which do their own training.
- 8.24 The prime responsibility for training must rest with the industry (employers and unions) because firms are in the best position to identify the skills they need and are likely to need in the future. The training body should therefore be firmly directed by the industry, and should carry out research among firms to determine the volume and mix of skills required, and to obtain feedback on problems faced by the industry.
- 8.25 As far as possible, firms must be encouraged to carry out training themselves. There should be a healthy apprenticeship system, with a blend of work experience, formal supervision, and external courses.
- 8.26 There is a strong disincentive for firms to do training when labour is very mobile. The pioneer firms, or those who do more or better training, are penalised because workers leave to join firms who spend less on training. For that reason, levy systems which impose an equal cost on *all* firms, large and small, and reimburse those who train, are fair, and promote more training. The wage structure also needs to properly reflect the relative value of apprentices, low-skilled and highly skilled workers.
- 8.27 Particular attention needs to be placed on the training of first-line supervisors. They play a key role in determining the performance of the industry, and in the training of site workers, yet training in this crucial responsibility is neglected in many parts of the industry, because in-career training is generally inadequate, and employers are unwilling to lose productive time of valuable employees.
- 8.28 It is essential to provide training close to the workplaces, to provide effective apprentice training, and to provide good facilities for continuing training for all levels of employees and self-employed people, and for ensuring the dissemination of new information and technology to the industry. This has

been discussed in Chapter 7. The system of construction training should have many local centres which keep in close touch with their local firms.

8.29 A few examples serve to illustrate to different approaches to craft training:

- The Belgian system of continuing professional training is a good model, and the Netherlands has a similar system. Belgium has 22 centres in the Flemish Community and 13 in the Walloon Community. They organise training, apprenticeships and provide business advice to SMEs and self-employed craftsmen (in some 300 professions). Training is provided at evenings and weekends for directors and managers of small firms, and for continuing training of craftsmen. Apprentices attend one day a week. All firms and self-employed people are registered, and renewal of their licences requires that they undertake a minimum amount of training.
- The French GFC-BTP, financed by a levy, is responsible for continuing training and it works through a network of local training centres (GFC-AREF). It has a team of training advisors to help firms to define their needs. The GFC-BTP is developing a comprehensive set of training tools and course material, along with a set of self-diagnostic training evaluation tools for firms. Their training advisors then help firms draw up a training plan using their own, the training centre's and other bodies' resources. This seems a very positive approach to integrating firms', industry's and government resources to improve performance.
- The UK Construction Industry Training Board has recently been under review by government but has been firmly backed by the industry to develop the training system, based on a levy on contractors and labour-only contractors, and to extend it beyond its present role which is mainly concerned with craft training for school leavers. The UK formerly had a very unregulated system of training, with too few apprentices, no clear definitions of competencies and skill requirements and no controls on qualifications by the industry. A system of National Vocational Qualifications (NVQs), which will take into account working experience and in-service training, is now being implemented, with five attainment levels up to management skills, and around 30 narrow crafts definitions. It is then proposed to use NVQs as the basis for a register of crafts and professions, and possibly later as a criterion in registrations and classification of contractors on the basis of their skilled work-force. As yet there is no formal system in the UK for continuing training of craftsmen or managers of small construction firms.
- Germany is often held up as a good example of vocational training. Every citizen is expected to have either 3 years vocational training or 4-6 years academic training. Vocational training is shared between local or state authorities and the individual's employer (whether a craft firm or an industrial firm). The vocational training for construction is set out by regulation and includes an initial two years of broad training leading to one of the three branches (construction, finishing trades, civil engineering) and a third year in one of 14 craft specialisms. Training is split between the firm with whom the trainee is registered, the craft training centre and the vocational school. The training is broad and flexible, and syllabuses frequently updated. There is a special training and status for foremen. Workers can change their skills and qualifications easily by short courses of further training provided by large firms or training centres.

8.30 It has not been part of this study to investigate training systems in detail. There is a clear need, however, for detailed studies of the training infrastructure, courses and requirements in each country, within an overall European

perspective. The European perspective should define a common terminology to discuss skills and training, and a common system of craft and skill definitions and their essential training requirements. The national studies should then determine the future needs of each country and the training system best suited to deliver the training. It is absolutely essential to get the common European framework of definitions of competencies and the essential requirements of training sorted out now, while several of the EC countries are reconsidering their own training arrangements.

Professional Training

- 8.31 Professional demarcations will blur. Most projects are now too complex for the capabilities of a single individual to be responsible for all design and supervision elements. Large projects require a multi-discipline team. Small projects require the designer to consult and use other professions. These factors require that the training of professionals should create individuals with a holistic outlook. Professional training should create deep specialisms on a very broad base of multi-discipline initial training. This implies that there should be a set of core elements in all construction professions' courses. These core elements should for example cover the social responsibility of construction, architecture and town planning principles, environmental issues, project management, law, economics, finance and accounts, as well as basic construction technologies and engineering principles.
- 8.32 Most countries have distinct career paths for architects, engineers, surveyors and builders, with different levels of status, and graduate training in different types of higher education institutions. We believe this is wrong, and that the various construction professions should be taught in establishments which are preferably on the same site, with interchangeable course units, and with the common core syllabus described above. In the UK, the idea of a network of Centres for the Built Environment has been proposed which would provide training for all crafts and professions, and in which a small number of people could follow joint degrees in architecture and engineering.
- 8.33 Topics which are of new or increasing importance and may require more emphasis in courses in future include:
- health and safety, particularly planning for site operations;
 - environment and energy conservation;
 - IT systems and information management;
 - CAD and simulation systems;
 - toxicology, microbiology and allergenic aspects of materials and buildings;
 - recycling and materials.
- 8.34 In particular there needs to be much more competence in building services and environmental aspects of design, integrated into the initial design concept. The numbers and the status of building services or environmental engineers need to be increased. They need to be involved in initial design concepts. Initial design will also need to take explicit account of demolition and recycling methods in future. Architects' training needs to create a greater concern for energy conservation and environmental aspects, as part of a programme to encourage better use of passive design principles.
- 8.35 The health and safety plan will soon be a legal requirement following implementation of the Temporary or Mobile Construction Sites Directive. Professional training will have to incorporate specific training for this. It will

require some of the details of construction methods and site organisation to be determined earlier in the design process, often under the responsibility of the designers before contractors are appointed.

- 8.36 Changes in the construction process will also mean new training needs. There are two main trends: increasing design-and-build and similar processes; and an increasing share of work done by specialist contractors which brings a desire to use construction management or 'separate trades' procurement forms. Both of these trends have implications for the role of professionals and hence their training. In general, they will operate in a wider range of different roles. Some independent design professionals will find their role more oriented to pre-contract, pre-permit stages; others in the project management and coordination role; and others working closely with contractors and specialist suppliers on design-build contracts. More design professionals will be employed by contractors and suppliers. Training must anticipate these trends.
- 8.37 The changing technology, new products and regulations, and changes in the construction process and practice are a greater challenge to professionals than to crafts and site workers. Continuing professional development, at significant levels, is essential for professionals. It needs to be formalised, with training plans agreed by the industry as a whole and specific programmes offered by the professional institutions and colleges.

Registration and Mutual Recognition

- 8.38 We have discussed the need for suitable systems for qualification (classification) and prequalification (i.e. provision of company information for tenders) in Chapter 6 on quality. The prequalification system should take into account both the employment of qualified people in firms, and the implementation of training programmes including continuing professional development.
- 8.39 There should also be registration systems for the individuals, craftsmen and professionals, which have a recognised set of specialisms each with a set of grades of qualification linked to training requirements. Cedefop is the European organisation working on development of a common set of European job categories. The national industries and training organisations need to be closely involved in this work.
- 8.40 It is not feasible to legislate to make it compulsory to employ only qualified and registered individuals, in an industry which is highly mobile and with fluctuating demand. The registration system for individuals, however, should confer a personal licence which clearly shows the individual's specialisms and grade, which employers and customers can ask for. This should confer a recognised status and be well respected, and also give a reliable basis for employment grades and differentials which will create a demand for training.
- 8.41 Mutual recognition is of great concern to the sector, particularly for specialist contractors and professions, but also for craftsmen. The industry needs to improve the mobility of the work-force, both to respond to local fluctuations in markets and also to create the cross-fertilisation that will help increase competition and improve techniques, procedures and regulations. There has been little progress in mutual recognition. This requires the convergence of skill definitions and technical qualifications. It will occur when there are systems of registration of firms and individuals which operate on the same principles and standards.

Chapter 9 - ENVIRONMENTAL ISSUES

General Principles

- 9.1 The construction industry affects the environment directly: positively by its construction of the built environment; and negatively by its consumption of resources and the generation of waste. It is already aware of its responsibilities with regard to the environment. Its response varies, but focused, coordinated research on environmental aspects of materials and construction processes is really just beginning and will be a priority for research and policy-making for the next few decades.
- 9.2 Environmental issues impinge on all participants in the industry: owners, designers and professionals, materials suppliers, manufacturers, contractors, building managers, regulators and the research community. Each has to take initiatives to respond to the challenge of new environmental needs and new markets. The quality of the built environment should be a major concern.
- 9.3 It is essential that the construction industry must be seen as the protector, developer and promoter of sustainable development, not as a cause of environmental damage. As a general principle, environmental (including energy conservation) regulations should be gradually tightened up, but only as fast as strict and even compliance can be enforced through the EC.

Current Policy Measures

- 9.4 In most countries, EC legislation has been the main force driving environmental measures. Although subsidiarity principles may be a limit to the extent to which Community legislation can be extended, the area of the environment is clearly one in which the subsidiarity principle requires that action be taken mainly at a Community level, since the consequences of environmental damage cross borders, and it is important for fairness and for the efficiency of the measures that all countries apply the same rules.
- 9.5 The 1986 Single European Act strengthened EC environmental policy by making environmental protection for the first time an explicit objective of the EC. It set general objectives for EC environmental policy, and in particular required that 'environmental protection requirements shall be a component of the EC's other policies'. It also required that harmonisation measures in environmental protection 'will take as a base a high level of protection'. The Maastricht Treaty strengthens EC responsibility for the environment. It restates the need for a high level of protection for the environment; and it introduces the duty of the Community to ensure sustainable growth which respects the environment. The Maastricht Treaty also established the Cohesion Fund, set up to aid the four poorer Member States by funding environmental and infrastructure projects.
- 9.6 Over 200 pieces of legislation have already been adopted by the EC on the environment, relating to water, air and noise pollution, waste management, health and safety and other aspects. Most of these will directly or indirectly affect the construction sector: either by controlling development choices; by controlling activities of construction sites, the production of construction products and extractive industries; or by creating a demand for projects such as waste treatment or reconstruction of industrial plant.

- 9.7 One of the most significant pieces of legislation is the Directive on Environmental Impact Assessment (85/337/EEC), requiring an environmental impact statement on projects which are likely to have a significant impact by virtue of their nature, size or location. The EC has recently been more active in ensuring that its requirements are complied with in EC Member States and particularly on projects with an element of EC funding. As experience and expertise increases an ever-growing proportion of construction projects will be submitted to a review of their environmental impact and this should become a routine part of construction permit procedures for large projects.
- 9.8 The Construction Products Directive brings environmental factors into the control and approval of construction products, and *de facto* defines requirements for finished works in terms of the six essential requirements, which include hygiene, health and the environment; protection against noise; and energy economy and heat retention. This will not only require product manufacturers to take these environmental characteristics into account in designing and marketing their products, but will require designers explicitly to design to the essential requirements in built works.
- 9.9 The Temporary or Mobile Construction Sites Directive, which requires that a health and safety plan be produced by the designers of projects and that a supervisor be appointed with responsibility for health and safety matters on site, will also make environmental factors such as waste, pollution, toxic materials, dust and noise the explicit responsibility of designers and contractors. Other measures, such as those regarding packaging waste, will also affect the management of construction sites, requiring explicit planning to handle waste and polluting substances.

Future EC Actions

- 9.10 There are a number of proposed actions under consideration by the EC at present, and the future directions of policy are set out in the EC's Fifth Environmental Action Programme (5th EAP) entitled 'Towards Sustainability: A European Community Programme of Policy and Action in relation to the Environmental and Sustainable Development'.
- 9.11 The 5th EAP targets six key areas, all of which have an impact on the construction sector. In most cases they create clear needs for research and opportunities for large new markets, although they also inevitably create some new costs for firms. The six policy areas are:
- *Sustainable management of natural resources*: This creates demand for rehabilitation and landscaping of quarrying and mining areas; and new sources of quarrying and new materials.
 - *Integrated pollution control and prevention of waste*: This will require re-engineering and construction for many industrial processes; and new incineration plants and waste repositories.
 - *Reduction in consumption of non-renewable energy*: This will promote energy conservation measures in buildings; and construction of renewable energy plants - wind, wave, tidal, solar.
 - *Sustainable transport policies*: This will promote more investment in rail and public transport infrastructure; but perhaps less in roads.
 - *Improved environmental quality in urban areas*: This will require better town planning; more recreational and social facilities; more municipal cleaning, sewerage and waste treatment.

- *Improvements in public health and safety (especially risk assessment and management, nuclear safety and radiation protection):* This requires decommissioning or reconstruction of some nuclear and industrial facilities; more robust and hardened structures; and investment in waste repositories, etc.
- 9.12 Part of the general policy towards environmental measures is an intention to move towards economic instruments such as taxes or charges for pollution, rather than legislation on controls. This could include a carbon tax to limit CO₂ emissions by encouraging energy conservation and the switch to non-fossil forms of energy.
- 9.13 Other policies on which the European Commission is acting include:
- the development of the eco-labelling system, to promote those products which, taking a life-cycle view from extraction of raw materials, through manufacturing, to final use by consumers, have least damaging impact on the ecology. Insulation materials will be one of the first products to act as a pilot for the scheme.
 - limitation of demolition and construction site waste.
- 9.14 A further measure on which the EC is working is the development of eco-audits, to encourage companies to look on environmental management as a complete process, like quality management, and publish standardised measures of the company's performance and impact on the environment. In the UK a new standard for environmental management (BS7750) is being introduced.

Needs for Action by the Construction Sector

- 9.15 Future trends and need for action by the construction industry on environmental matters are considered below under the following categories of environmental issues:
- energy consumption;
 - resource use, waste and recycling;
 - pollution and hazardous substances;
 - internal environments;
 - land use and conservation.

Energy

- 9.16 About half of EC energy consumption is related to buildings. The design of new buildings clearly influences long-term energy consumption. Yet the economic pressures on clients to specify and purchase energy-efficient buildings are weak. Energy prices are currently very low in real terms compared to their peak around 1980. As we have discussed in Chapter 2, the characteristics of construction markets, particularly the uncertainty which is implicit in new construction, lead to a bias towards low initial cost. There is also a bias in some clients towards air-conditioning and over-specified building services. There is still a need for information and awareness campaigns to educate building owners, households and commercial clients, to the potential and advantages of low-energy buildings. Energy- and eco-labelling of buildings will be the most important tool to improve the demand for energy-efficient buildings by giving a market value to energy efficiency.

- 9.17 New technology for building automation and climate control will help to make building services more efficient, but the main need is for passive energy-efficient designs to be strongly promoted and new design concepts developed. This requires research, good training for architects and building services engineers, better integration of structural design with building services design, and increasing levels of specification of thermal efficiency in technical building regulations.
- 9.18 There are strong commercial pressures working against the introduction of passive thermal techniques. The building services are an increasingly large part of the cost of a building, and there is no incentive to reduce the cost of this part of building in favour of the lower cost and low-margin structural elements by either:
- building services suppliers and contractors (who want to maximise their sales); or
 - general contractors (who make their margins out of cash-flow on subcontractors' work); or
 - building services engineers (whose fees are based on a percentage of the cost of the building services element and who normally only do outline specifications and leave the detailed services design to the mechanical and electrical contractor).
- 9.19 The total cost of efficient passive-design buildings would probably be lower than highly serviced buildings, if passive design were routine and competitive. Two essential steps are:
- firstly, to integrate services design with the initial conceptual design of buildings and include total energy efficiency in the criteria for construction permits;
 - secondly, to relate building services engineers' fees to work done and not to equipment cost.
- 9.19 The greatest scope for effective savings is through measures to reduce energy consumption in the existing building stock, particularly during refurbishment. The greatest scope will be in the eastern and central European countries, where in the past energy was highly subsidised and rarely charged to individual tenants of buildings, and where most buildings were not provided with temperature controls. Most western European countries have had awareness campaigns or grant schemes for home insulation in the past but the momentum has been lost with falling energy prices. (The European Commission runs the SAVE programme to promote energy efficiency measures.)
- 9.20 Most of the technology for upgrading buildings already exists, but there is scope for development of improved technology. However, there is a problem of dissemination of information, for example on new heating products or insulation methods, particularly to small builders and installers of building services. This requires awareness campaigns aimed both at builders and building users. Fiscal incentives for energy conservation will also help.
- 9.21 Energy embodied in materials is also important. More research is needed into alternative materials; and the energy costs of alternative construction materials should be made known to designers and specifiers. Altruism by designers, however, will not have much effect: in the long run, materials use is affected by price, which will be determined by energy pricing and taxation. This is outside the influence of the construction industry, but the industry should recognise that one way or another energy prices are likely to rise again in future and it should be planning research and investment on that assumption.

- 9.22 Because the production of most construction materials uses energy-intensive processes, in both transformation and transport, materials producers should be encouraged to update their technology and rationalise their production. The industries should promote collaborative research on energy saving and pollution control for processes, since the cost and risks of new investment can be prohibitive.
- 9.23 Governments should also ensure that all process industries pay economic prices for their energy. In many cases governments and utilities give substantial discounts or have favourable tariffs for the process industries which are the largest consumers of energy, either on the argument that they are steady consumers of base load power, or as a deliberate subsidy to influential industry sectors to improve their competitiveness. For overall economic efficiency this is a nonsense, and from the point of view of energy policy it is suicidal. This is particularly important in eastern Europe and should be an important part of trade and accession negotiations.

Resources, Waste and Recycling

- 9.24 The landscape impact of materials extraction is evident in most parts of Europe's densely populated land, and there are increasing conflicts between extraction, and habitation, agriculture and leisure uses. There is also a shortage of waste disposal locations. Controls will increase, and governments will increasingly need to develop integrated extraction and waste disposal plans in collaboration with the industry. The building materials industry will have to adapt to longer transport distances. This in itself has a penalty because energy costs for transport will increase: the most economic and energy-efficient transport of materials will be as far as possible by sea and canal. The extraction areas with least environmental impact, or least objection from local communities, may include coastal areas of Scandinavia, Scotland and North Africa.
- 9.25 The construction sector is a major producer of waste. Arisings from construction are a large proportion by volume of total waste, and the reduction of waste will be an increasingly important objective. Awareness of this issue needs to be spread throughout the sector, including to SMEs.
- 9.26 Site management practices must be improved to minimise waste production. Materials management and disposal could be part of the health and safety plan now required to be produced for every site under the Temporary or Mobile Construction Sites Directive.
- 9.27 Recycling is increasing and offers great scope to minimise the total usage of materials and their energy consumption. There needs to be research and investment in technologies that will allow the recycling of construction materials and components, especially demolition waste and by-products. New design concepts for easy dismantling are needed. Major clients may also have to look closely at their general specifications, and design codes may need revision, to ensure they do not unnecessarily preclude the use of recycled materials. Financial assistance and publicly financed research will be needed, because the costs of the R&D and initial investment in new technologies is perceived to be high. It may also be necessary to legislate for the recycling of materials resulting from demolition.

Pollution and Hazardous Substances

- 9.28 Potential pollutants and hazards need to be recognised early in the development of a project. Labelling will help in this. Product standards developed under the Construction Products Directive will also control the use

of hazardous substances in construction. Control on the planned use of polluting and hazardous substances should be part of the requirements of the construction permit, and part of the health and safety plan.

- 9.29 Construction sites are increasingly serious sources of pollution and hazard. The change in technology of construction in recent years has increased the volume and variety of materials used, and in particular the volume of packaging. The change from wet trades, using large amounts of innocuous mineral-based materials and large volumes of water (which suppressed the fire risk on sites), to dry trades using large amounts of organically-bonded composite materials, plastics, processed timber, metals, adhesives, solvents and organic paints, mostly delivered to site in paper and plastic packaging rather than in bulk, has totally changed the nature of the construction site. The site itself now produces large quantities of waste. Much of that is non-degradable, and some produces toxic gases and by-products when it is involved in fire. The upstream manufacture of the materials and packaging is also environmentally more hazardous than traditional materials, involving petrochemical processes, metallurgical processes, and wood and paper processing, using large amounts of solvents, acids and energy. There needs to be research to improve both the production processes for materials and the procedures for handling, removal and recycling of the site wastes.
- 9.30 Good practice can reduce the effects. Control of noise and dust, good housekeeping and separation of materials, and minimisation of fire risk, are examples where improvements are possible, and procedures should be specified in the site safety plan.
- 9.31 Two recent examples in the UK illustrate what the industry can do to improve practice. The first initiative came from the insurance industry, which is increasingly concerned about the frequency of fires on building sites, and a number of huge losses caused partly by smoke, fumes and fire-fighting water. They have drawn up a code of practice for site management and materials storage and handling, with the collaboration of major contractors, and all insurers are encouraged to make compliance with the code of practice a condition of insurance (and hence of doing business) for contractors. The second initiative came from the Construction Industry Research and Information Association (CIRIA) which set up an Environmental Forum with representatives of all sides of the industry. This drew up detailed environmental checklists of problems, regulations and actions by designers, contractors and others, indicating good practice at each stage of the construction process.
- 9.32 Contaminated sites, particularly from old industrial processes, are a problem, as are contaminated buildings. The cost of clean-up can be prohibitive, and much of the technology required does not yet exist or is not well known.
- 9.33 This highlights the need for good records of construction. One suggestion is that all buildings should have a 'log-book', which specifies the original construction and materials used; the maintenance procedures and requirements, and records changes, refurbishment and maintenance carried out (see para 6.38).

Internal Environment

- 9.34 The internal environment of buildings is an emerging area of concern. More research is needed on air quality, microbiology of buildings, allergenic effects, sick building syndrome, and emissions from land and building materials. The Construction Products Directive can assist in this. Standards also need to be developed for air, noise and microbiology of buildings. There are opportunities here for the building services industry to develop new techniques, products and services and promote new markets.

Planning, Land Use and Conservation

- 9.35 Construction uses up land and by definition it always has an environmental impact. The purpose of construction is to improve the human environment, but it often has adverse external effects on neighbouring land and buildings or on the natural environment. Planning law is designed to protect the wider environment, amongst other things, but often it fails. The industry needs to take a positive stance in development debates and enquiries and positively promote schemes and options which protect and enhance the environment. This is also good public relations for the industry and will promote demand.
- 9.36 Environmental economics techniques are improving and can help decision-makers in this area. Their application is rare but growing. Environmental impact assessment should be a routine part of design, required by construction permit procedures. Recognised standards and procedures for them need to be developed. Ways of presenting and publishing them should also be developed as part of the industry's contribution to selling new projects to local communities. The recent involvement of the EC in policing environmental impact studies of major projects can contribute to ensure equal and consistent application, prevent evasion and help the development of techniques.
- 9.37 Europe has such a wealth of historic buildings that conservation is a very important activity for the sector. The exchange of information on techniques employed is needed. Craftsmen skilled in particular aspects of local building practice will continue to have a role, and training programmes should take this into account.

General

- 9.38 The overall conclusion from this discussion is that the industry should publicise its positive impact on the environment and its essential role in waste, pollution and water treatment, landscape and resource management. It should press for increasing environmental standards which will create new demands for construction, and Europe should aim to be in the world lead in developing new products, processes and techniques for environmental management and environmentally-friendly construction to gain a leading place in supplying those markets.
- 9.39 In all of this the largest role is for the sector, or the subsectors of the construction industry, acting in collaboration through its trade associations to develop techniques, standards and codes of practice which are appropriate and can be implemented voluntarily to avoid, or at least anticipate and be prepared for, the imposition of controls by legislation.

Costs of Compliance with Environmental Controls

- 9.40 Inevitably, environmental controls impose costs on manufacturers and contractors. In some cases there are savings, in energy costs for example, or in recovery of saleable waste products, but generally the costs are not recoverable by individual firms through higher prices or new sales, even though there may be measurable social benefits and savings. The EC has estimated that complying with environmental directives costs 1 to 2% of GDP per year, excluding spending by water and nuclear industries. Realisation of the cost is having an impact on the pace of legislation and enforcement: the USA currently has a moratorium on new environmental legislation and EC countries are stressing the need for realism about the economic impact of proposals on sectors of the economy.

- 9.41 The extractive and process industries which supply construction materials are particularly strongly affected by the costs of environmental control. Most of the construction materials industries - steel, aluminium, cement, brick, glass, ceramics - are very energy intensive and will be affected by energy taxes. The energy intensity in extraction, processing, transport, use and recycling varies, and the relative economics of materials will change.
- 9.42 The quarrying and extraction industries are affected both by the direct costs of controlling or eliminating dust, noise, dirt and traffic, and by the delays introduced in approvals for new exploitation sites and the commitments to future re-landscaping. This imposes a cost on society because it favours the continuation of operation of existing quarries and extraction sites, which may be economically inefficient as well as more polluting than new sites which face strict approvals. The lack of new sites has led to the development of some super-quarries in remote locations such as Scotland and Norway, with long but low-cost sea transport of materials.
- 9.43 A further example is the cement industry, in which many plants still need to invest in flue gas cleaning and dust control, improved control systems, and more energy efficient processes. There have been great improvements in technology over the last decade, and the leading companies have reduced energy consumption and emissions greatly. Nevertheless, Europe's industry still has many old, small and inefficient plants, which have suffered inadequate investment and maintenance because of declining markets, uncertain demand and often harsh competition. Environmental controls will hasten the restructuring of the industry and lead to increased efficiency, as long as competition policy permits the restructuring needed to allow more investment in newer and larger plants, but in the short-term there will be high costs for most firms and closures of some plants. Reinvestment is also restricted by controls on quarrying which force firms to continue with inefficient plants at an existing raw material supply, rather than reinvest at new raw materials sources. A similar situation also applies, for example, in the brick industry.
- 9.44 No single firm wants to make the necessary investments and suffer the increased costs which are needed to comply with environmental controls, if other firms are able to take advantage of written-down plant and laxer controls at existing sites - especially sites in other countries which may not apply the same rules and standards.
- 9.45 Failure to take action, however, can have catastrophic consequences. At the lower end of the scale of threats is the competitive disadvantage (relative to other firms or to competing materials) that will be faced by firms which fail to improve energy usage if energy prices rise or energy taxes become effective. At the other extreme is the threat of actions against firms for damage caused to the population, possibly from toxins or health threats not yet identified. Asbestosis is an example of past legacies which entailed enormous costs to producers, contractors and operators of dangerous buildings.
- 9.46 The various sectors of industry are best able to take action together to prevent such threats and to improve their image, market and competitiveness. They need to develop common Codes of Good Practice and to ensure that all members of the industry comply. As with the discussions on quality, we believe that the insurance industry, which would ultimately stand the cost of major claims for negligence and damage, can contribute to ensuring that their clients comply with relevant codes of practice. The industry associations need to pool existing knowledge on pollution control, waste management and energy-saving technology so that each firm does not have to reinvent the wheel and suffer the costs of experience in applying new environmental control technology. They need to develop clear eco-labelling standards and procedures and to

encourage member firms to carry out energy and eco-audits, and in return public authorities and the major construction industry clients need to agree to use their procurement power to ensure that environmentally sound products and materials are specified and used.

- 9.47 It is recognised that it will be difficult to achieve equal compliance both inside the EC and in its trading partners, because of different national priorities, environmental conditions and levels of economic development. The construction products industries want protection from products manufactured in regions with less strict environmental controls, but it would be wrong to impose new technical and bureaucratic barriers to trade against countries where the local cost of environmental impacts is lower. Any legislation imposing a requirement for exporters to the EC to prove they comply with EC environmental law would be unworkable, and enable EC producers to misuse the rules to oppose any imports from countries with different environmental regulations from the EC. Nevertheless, the issues involved are important and there are many cases of serious environmental damage caused by industries which export to the EC and these must be tackled in political negotiations and trade agreements, rather than by unilateral trade barriers.

Chapter 10 - A PROGRAMME OF ACTION

The Basis for Strategy

- 10.1 This chapter synthesises the elements of strategy which have been discussed in the report, and sets out the outline for a programme of action, to be debated by the industry, to meet the strategic objectives set out in para 1.73.
- 10.2 The strategies are devised from the viewpoint of the European consumer, to maximise the contribution of construction to the total welfare of the European population. This is synonymous with the long-term good of the industry, since it leads to an optimal level of demand and construction output. Each of the strategies, actions and policies needs to be tested against the three basic policy objectives which were set out in Chapter 1:
- contribution to social and economic objectives for the natural and built environment;
 - quality of construction;
 - competitiveness and value-for-money (the relationship of quality, time and cost).

Priorities for Actors in the Sector

- 10.3 A general discussion of priorities for action, in the immediate present and evolving over time depending on the achievement of growth scenario targets, was given at the end of Chapter 1. These broad priorities are translated into lists of specific actions in Appendix A, against each of the strategic objectives.
- 10.4 The priority actions for the main groups of actors in the sector are set out in the following paragraphs. These should be read in conjunction with the appendix. These proposals are restricted to high priority actions or new actions and are not intended to be comprehensive or to imply that existing action programmes are not necessary.
- 10.5 This list of desirable actions should be considered in each country and each subsector to determine the individual application of each action. In many areas, some or most EC countries will already be doing what is needed. Because of the very great diversity of the sector and the disparate interests within it, the priorities will be different in different countries and for different subsectors.

EC Actions

- 10.6 Use the structural funds to maximise the impact of infrastructure and promote good construction practice. The greatest and most direct impact that the EC institutions will have on the construction sector is as financier and client through the structural funds and other funding instruments. The proper targeting of structural funds on infrastructure development needs to be monitored to generate the maximum impact on regional development and construction, and on supporting other economic activities. The maximum benefit should be sought from trans-European networks. The balance of funds should shift from agricultural support towards infrastructure development (including rural infrastructure). In planning and financing EC infrastructure, the Commission should seek to promote steady demand, long-term perspectives, enlightened procurement and favour good design, innovation, training and quality.

- 10.7 *Carry out comparative studies of the training arrangements for construction crafts and professions. This will serve two essential purposes. It will enable employers to understand the roles and capabilities of employees and consultants in other Member States and it will enable the training and professional bodies to improve their training systems and courses by learning from the others. There have been proposals to set up a European network of construction training organisations and this initiative should be supported.*
- 10.8 *Support measures and studies leading to increased mobility, mutual recognition and commonality of training and competencies (e.g. through Cedefop) for construction crafts and profession. There is a belief in the industry that the commitment to increased mobility and mutual recognition is weak.*
- 10.9 *Increase the support given by the various EC training programmes to the construction sector. The current programmes (Comett, Erasmus, PETRA, Youth for Europe, IRIS, Eurotecnet, Lingua, Tempus, FORCE) end in 1994 and new proposals are being made in 1993. Apart from some exchange schemes between architectural schools, the construction sector seems to have had little participation in the present programmes. The policy-makers need to be aware of the importance, and general inadequacy, of construction training.*
- 10.10 *Ensure that the work being done by CEN and the Directorate-General for Internal Market and Financial Services (DG XV) on standards for qualification systems is appropriate to the needs of the whole construction sector. Standards and procedures are needed which will permit the industry to organise mutually-recognised registration and qualification systems for all parties in the sector, especially small firms.*
- 10.11 *Review the operations of the European insurance industry in construction liability insurance. Act as a marriage broker between the construction sector and the insurance sector to help develop an infrastructure which will provide a range of insurance-backed guarantees and good latent defects and professional liability insurance.*
- 10.12 *Continue to work with the construction sector to develop compatible liability regimes. The objective of the liability regimes should be to provide a high level of consumer protection, and to form the basis for a flexible system of guarantees and insurance.*
- 10.13 *Increase support from the RTD Framework Programme to construction research. Construction should at least have a share commensurate with its importance in the EC economy - around 10 to 12% of the total.*
- 10.14 *Encourage coordination of EC construction research. Work with ENBRI to improve the interchange of information and coordination of public-sector construction research and study ways of either extending ENBRI's scope or setting up arrangements for exchanging information and focusing research by all the actors involved in construction research: contractors, consultants, product and materials producers and research bodies.*
- 10.15 *Provide better, more reliable and speedier construction statistics and market information. This requires work by Eurostat to achieve compatible definitions and methods of collection.*
- 10.16 *Encourage the development of more effective European representative bodies. The construction sector in general - contractors, professions and product producers - is not well informed about European policies and activities and has not up to now adopted a proactive attitude to the opportunities and threats of the European market. In some of the subsectors the European representative bodies are not very active.*

- 10.17 *Help ensure good representation of clients and customers.* Even at national levels representation of clients is often weak. There is no European organisation representing customers of the construction industry with which the industry can discuss contracts, procurement routes, liability, guarantees, and similar issues, and which could participate in Commission discussions on legislation affecting construction.
- 10.18 *Ensure that Member States enforce existing legislation on health and safety, environment, and working conditions fairly, evenly and rigorously.* There is a large body of legislation to be implemented which imposes large costs on the construction sector and requires changes in working practices, and research into new methods and materials. The costs and consequences need to be carefully monitored and studied, to ensure there are no unfair burdens or unequal advantage, and that the implications for the sector are well understood.
- 10.19 *Monitor the impact of the public procurement legislation on the quality of works.* The lever of EC funding can be used to sponsor good and enlightened procurement, promoting quality and innovation, clear and fair contracts, and good fair procurement procedures, not just lowest cost. Public procurement should also help promote the development of European standards.
- 10.20 *Speed up the implementation of the Construction Products Directive.* This will require increased resources, and perhaps some pragmatic solutions. It is necessary to reduce the period of uncertainty and resolve doubts in order to instil confidence in the process and prevent it from being obstructed.
- 10.21 *Make energy conservation in buildings, recycling of construction materials, and improved health and environmental standards for buildings priority areas* (see Appendix A, Box IX).

European Bodies

- 10.22 There is need for a better flow of information about European construction markets, the construction process and organisation, and research into productivity and cost differences. Consideration should be given to some form of European Centre for Construction Economics, to carry out studies and publish information on construction and property markets, construction costs, management and procurement methods, and productivity.
- 10.23 From the proposed list of actions, it also follows that improved coordination is needed in the following areas:
- *European building clients and users:* to represent all forms of clients - house-owners, commercial property developers and owners, utilities and major industrial clients;
 - *A European Centre for Construction Research and Innovation:* the initiative for this should probably come from ENBRI;
 - *A European network of construction training organisations:* to exchange information on classification, qualifications, course materials and methods.

In each case these should build on existing arrangements and it should be the responsibility of the relevant national bodies or existing European bodies to promote, develop and finance these activities. We do not envisage any grandiose new bodies, but in each case probably the initial stage would be a small secretariat to provide a focus, with publishing capabilities, and able to initiate studies, collate data, and direct enquiries at the relevant providers of information and services.

- 10.24 There is need to improve representation of the sector as a whole, with a strengthened role for the sectoral representative bodies. This is particularly important for the professions, and for construction products as a whole (although certain main materials do have very strong European bodies).

National Governments

- 10.25 *Implement the measures to create an open and competitive European construction market.* National governments need to support all of the initiatives proposed above for action at the European level, as well as implementing existing legislation to ensure a 'level playing field'. They must also ensure that the national industry and its various representative bodies are well informed, and respond to the challenges of the European market.
- 10.26 *Provide stability for construction markets.* Within the context of macroeconomic policy, national governments should set out and stick to long-term infrastructure development plans, and as far as possible maintain steady public building programmes. Governments can also take some measures to stabilise the private-sector building and housing sectors through the various instruments at their disposal, including regulation of the housing loan institutions, mortgage interest rate and housing subsidy policy, land use planning, etc.
- 10.27 *Introduce measures to promote private construction demand and free construction from public expenditure constraints.* These could include privatisation of utilities and buildings, removal of state aid to declining industries, liberalisation of rents and rental markets, measures to reduce land prices through better land use planning and efficient planning procedures.
- 10.28 *Public bodies should act as ideal clients.* They should use public purchasing power to promote quality, innovation, professional procurement techniques, and to encourage the use of qualification systems and codes of good practice by the industry.
- 10.29 *Promote both training and research activities.* National needs and approaches will vary, but generally there is need to improve the institutional mechanisms for provision of both training and research for construction, promote trans-frontier cooperation, and to provide incentives and improve funding, possibly by extending levy systems. Target training and information at small firms. Encourage apprenticeship. (See also Appendix A, Boxes VI and VII.)
- 10.30 *Ensure a clear definition of requirements for construction permission.* Procedures should be quick and effective, and ensure the involvement of a registered qualified firm or professional in the process.
- 10.31 *Open up in-house services to competition.*

Clients and Users

- 10.32 *Set up stronger representative bodies to promote clients' and users' interests.* Better representation is needed at the level of user industries, for home-owners, and at national and EC level. Particularly at this stage of development of EC policy for the construction sector a strong voice is needed for clients. They should work with construction industry associations to develop simplified and better contracts, and press the industry to improve quality, performance and customer service.
- 10.33 *Promote good procurement procedures.* Procurement should emphasise quality, innovation and life cycle costs.
- 10.34 *Promote labelling schemes* for measurement of building performance.

- 10.35 *Develop a universal system of log-books for buildings.* This should record initial plans and specifications, materials, performance, and subsequent maintenance and modifications, and lead on to period inspections and tests.

Contractors' and Consultants' Associations

- 10.36 *Develop flexible guarantees.* The industry bodies will have to work with the insurance industry to develop terms and conditions of guarantees, procedures, codes of practice, qualification systems and approvals, or else set up suitable mutual bodies to underwrite the guarantees.
- 10.37 *Develop systems of qualification and registration in collaboration with other industry bodies.* It is essential that systems be set up which are as simple and non-bureaucratic as possible, subject to common standards and criteria, suited to small firms, and controlled by bodies representing the various sides of the industry.
- 10.38 *Produce codes of good practice for members.* Encourage clients to ask for, and members to provide, indicators of their performance on measurable parameters such as quality, training, employment, research, safety, exports, claims, completion times, awards and competitions. Make sure these are suited to small firms as well as larger ones.
- 10.39 *Manage media relations to promote construction, its benefits and social value.* The total demand for construction, and customers' choice between new build and renovation, as well as recruitment into the industry, are affected by a negative public image of construction.
- 10.40 *Work with the support of members to eliminate malpractices.* The direct cost of construction, as well as the image of the sector and the demand for its services, is affected by malpractices such as corruption in contract awards, price rigging and tax evasion, as well as theft of materials and equipment. The industry itself should be seen as taking a tough stance against such practices.
- 10.41 *Help improve training, define needs and develop curricula.* The industry bodies need to work closely with training bodies, training institutions, and government departments responsible for funding and regulating construction training to increase the level of training, and to keep it continuously adapted to the needs of the industry in terms of numbers of trainees and the demands of changing technology and management methods.
- 10.42 *Assist members, particularly SMEs, to implement and share experience on quality assurance (QA) and total quality management (TQM).* QA systems must be as simple and as inexpensive as possible, appropriate to construction, uniform across the industry, compatible and well understood. This can only be achieved by trade associations developing guidelines and specimen documentation for their members. There are nearly two million very small construction firms in Europe, which require simple documentation they can use, and guidance on its use and on accreditation. Successful implementation of basic QA systems can then lead on to development of total quality management.

Construction Products Producers' Associations

- 10.43 *Improve representation of the construction products sector as a whole at European level, and develop the range of services provided by European associations to their members.* There needs to be more cooperation between the representatives of individual materials sectors on matters of common interest, including standards, research, and environmental matters. In individual materials sectors member firms will increasingly need information at a European level.

10.44 *Promote and accelerate standard-making and technical approvals.* Develop product information databases and publications, based on the attestation for CE marking.

10.45 *Promote and disseminate research on environmental control and process improvements* to help member firms meet the needs of environmental, energy and social legislation.

Professional Institutions

10.46 *Build European links and assist members in pan-European activities.* The design and management professions should be leading pan-European activity and be catalysts in transferring know-how and information on best practice.

10.47 *Develop training and professional qualifications to provide deep specialisation on a broad base of knowledge common to all professions.* In general, improve communication between professions. Cooperate between professions in jointly developing training schools and curricula.

10.48 *Enhance the profession and training of building services or environmental engineering.* There is no European association for building services engineers, and in many countries there is no separate specialism or professional body. Not enough environmental engineers are being trained.

Contractors

10.49 The contractors need to implement all the following actions:

- improve training,
- increase R&D and encourage innovation,
- improve marketing,
- introduce and improve quality management,
- improve health and safety procedures,
- improve career structures and prospects.

10.50 Take the initiative in offering appropriate guarantees. Contractors have to be the ones to initiate measures, working with the insurance industry, to create competition on quality and customer service, rather than cut-throat price competition, and build on good relationships with clients.

10.51 International contractors and large civil engineering contractors should *develop and enhance their financial engineering capabilities.* The construction industry must help mobilise private finance to increase construction markets. They should build relationships with banks, and with designers, other professions, and specialists to provide a complete service, including design, construct and operate projects, and be able easily and efficiently to set up or take part in consortia for BOOT-type projects.

10.52 *Build on the success of European designers and consultants in world markets.*

10.53 *Build supportive relationships between main contractors and small firms,* providing advice and support in training, technology, and quality management. Franchising is one approach. Also, small firms should develop links with other small firms to share resources and know-how by creating 'quasi-firms'.

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- 10.54 *Monitor and implement the various regulations and measures on environment and health and safety.* These will require changes in practice and new costs in many cases, but failure to do so will lay up problems for the future. Firms will also benefit in marketing from presenting an image of environmental consciousness.
 - 10.55 *Look for new opportunities in environmental markets.* Larger firms may benefit from research in new techniques and use of new materials. Smaller firms need to support and monitor collaborative research on environmental markets, technologies, and use of environmentally acceptable products.
 - 10.56 *Be aware of the requirements of the Temporary or Mobile Construction Sites Directive.* This puts new requirements on main contractors, and will change the relationship between designers and contractors.

Products Producers

- 10.57 *Accelerate efforts to develop harmonised standards and technical approvals.* Those firms able to participate in the standards-making process will gain market advantage.
- 10.58 *Work in collaborative research ventures with major contractors* to develop innovative materials, products and the consequent changes in design and site practice.
- 10.59 *Improve product information, design codes and training support to specifiers and contractors.* In a period of rapidly changing technology and standards, and product trade, marketing and availability, firms will need to keep closer contact with buyers and specifiers. Market advantage will go to the firms which are able to provide information and technical support to them.
- 10.60 *Invest in technologies to save process energy and in environmental control.* The present exceptionally low prices for energy will not last, whether or not there is an energy or CO₂ tax, and enforcement of environmental controls will increase. Firms which do not reduce energy costs and reduce emissions will suffer increased costs in future.
- 10.61 *Develop up-stream and down-stream linkages to promote the integrated development and implementation of new technology from materials through to erection.* Products and material producers are the major sources of innovation and research expenditure. Increasing innovation and trade requires product differentiation and new uses for materials. This needs involvement of the producers in developing new uses and application technology, and feedback from construction to product requirements.

Design and Project Management Consultants

- 10.62 Develop links with other professions and improve multi-discipline working.
- 10.63 Develop more concern with environmental and health and safety aspects of design. These will increasingly become requirements of building control and construction permits, and potential sources of liability claims.
- 10.64 Develop greater concern with buildability and the construction process. In particular, this will be an obligation in future under the Temporary or Mobile Construction Sites Directive for designers who prepare the safety plan.
- 10.65 Be prepared to work with contractors in design-construct contracts. This is normally more demanding than working as a consultant to the client, requires more involvement and liability for the detailed design, and will be on tougher competition and financial terms. It will require developing efficient systems, rapid work, lower costs, effective coordination with the contractor and information management.

Labour Unions

- 10.66 *Press for improved safety and working conditions.* The industry must attract and keep good employees, and enjoy working conditions which are conducive to good workmanship and pride in the job, as well as reducing the direct costs of injury and absenteeism.
- 10.67 *Work with training bodies and trade associations to improve training and retraining, and develop more flexible trades and competencies.* Improvements in training have the highest priority to improve quality and productivity and encourage innovation.
- 10.68 *Seek a compromise between job security and labour mobility.* Wages should rise to reflect increasing skill levels in the labour force, but over-protective social benefits and employment conditions may need to be reduced when they discourage employers from keeping permanent employees and promote casual forms of labour.

Research Bodies (see also Appendix A, Box VII)

- 10.69 *Create networks.* There needs to be more coordination between national research bodies, between research bodies and clients, and with universities, contractors, consultants and product manufacturers. The establishment of a European Centre for Construction Research and Innovation has been proposed.
- 10.70 *Work with industry and government to increase the total funding to construction research.* This includes preparing more proposals for funding of research through the EC framework programmes, and there are also possibilities through the structural funds. The national research bodies can help to set up levy systems where they do not already exist.
- 10.71 *Put more emphasis on topics to improve the whole construction process and the performance of whole works, than on testing and development of components.* Priority areas for research have been discussed in Chapter 7 and in working reports. The aim must be to improve productivity through new technology.
- 10.72 *Work with industry bodies and professions to develop research on productivity and the economics of construction.* The possibility of establishing a European Centre for Construction Economics is proposed above (para 10.22).
- 10.73 *Develop defects databases* and use them to target research on recurrent problems.

Education and Training Bodies (see also Appendix A, Box VI)

- 10.74 *Set up links with training bodies in other European countries.* Each system can learn from the others. There can be interchange of innovation, training material, exchange of staff, study of alternative syllabuses and training methods. This will help support measures to improve mutual recognition.
- 10.75 *Research and monitor the changing training needs,* particularly the needs arising from changing technology, and IT applications. Develop a range of courses dealing with new technology as well as traditional crafts, and courses to provide a broad awareness of the built environment and construction technologies.
- 10.76 *Improve continuing training and retraining.* This should be particularly focused on the needs of very small firms and self-employed workers, including their management needs.

- 10.77 *Increase training on repair, maintenance and conservation techniques.* In commercial and industrial building, innovative techniques and materials will require new maintenance techniques. In the housing sector, one of the objectives should be to restore some of the low-quality do-it-yourself (DIY) work back to the formal sector by building consumer confidence in the quality and value for money of small jobs by registered firms.

The Costs and Benefits of this Programme of Action

- 10.78 A macroeconomic and social evaluation of the global costs and benefits of the actions proposed here is beyond the scope of this study. Indeed there is no evident methodology for such an evaluation. We can, however, summarise here the key areas where benefits are sought, and the consequences of failure to take action.
- 10.79 There are two generic types of quantifiable economic benefit: firstly, direct reductions in the cost of construction (a price effect), and secondly a shift in consumer demand towards construction as a result of improved quality, choice, performance, value-for-money and perceived need (a substitution effect).
- 10.80 Price reductions can come from better project preparation, specification and management, reduced defects, lower maintenance costs, and lower construction costs resulting from improved efficiency and productivity or lower cost of input materials. The data on project costs in Chapter 5 indicated large cost differences between countries for identical projects, with lowest cost countries up to 30% below high cost countries for some projects, even after allowing for general price level differences. Some studies of individual projects in Europe have indicated potential savings of the order of 30% from better procurement, management, standardisation, fast-track methods and learning effects (for example, recently published comparisons sponsored by BAA plc and Bovis Construction). The cost of defects alone is probably of the order of 5 to 10% of project costs on average, counting the costs of re-work on site, the cost of repairing latent defects later, and the economic costs of defects which are not repaired. Disputes and claims negotiations add a further cost. A recent study, published by Editions du Moniteur, *Réussir la qualité dans la construction*, November 1991, indicated costs of bad workmanship, including the cost of accidents, amounting to ECU 54 billion in the EC, or 12% of total output of the construction sector. The cost of major repairs to latent defects occurring after acceptance, and subject to potential insurance claims, has variously been shown to be around 2% of project cost (e.g. NEDO: *Latent Defects in Buildings*, 1985) and re-work before acceptance, and the economic costs of faulty or unsuitable building, must each be several times higher than that.
- 10.81 We believe that in the long run significant savings can be made on most 'typical' projects, in most elements of the total cost:
- materials prices (through standardisation and increased competition);
 - materials cost (through better specification of products and subcomponents);
 - labour costs (through raising skill levels and through mechanisation);
 - management costs (through improved communication, IT and quality management);
 - defects costs (through various quality and training measures);
 - repair and maintenance (through raising levels of specification).

Evidently the scope for savings varies. It will be relatively low for well-ried and repetitive work like housing and more for large, one-off commercial and industrial projects. It will be higher for countries with less well developed quality systems, training and research systems, and less competitive procurement.

10.82 There can be a once-and-for-all saving from removing the inefficiencies of present procedures, and a long-term year-on-year benefit from improving technology and productivity. A 10% one-off benefit would be worth ECU 50 billion per year; a 2% per year increase in labour and capital productivity (typical of the productivity increases achieved in developed economies as a whole) would be worth another ECU 5 billion each year (assuming value added at 50% of total output).

10.83 The substitution effect is difficult to quantify. It includes the social welfare benefit of better housing; improved industrial productivity from more and better communications; improved public health from more investment in water and waste treatment; less environmental damage; less global warming; and a more attractive built environment.

10.84 In addition, this report has stressed the long-term benefits to society which result from improving construction industry performance.

- Increased demand as a result of better works and lower prices (over and above any increased public funding of construction) will create new jobs in construction and its diverse suppliers (see Chapter 4).
- Improved recruitment, reducing the dependence on unskilled and immigrant labour, and improving productivity, technology adoption, working conditions, health and safety, and the effectiveness of training, as Chapter 5 showed, all help reduce costs as well as improving the welfare of the labour force.
- Better quality and value for money will cause demand for construction to increase and the quality of the built environment to improve. This will improve industrial efficiency and the social conditions of our cities.
- Householders and small customers will be more willing to commission building work because it will be less costly, less stressful, with less worry of financial loss from poor or faulty work by unqualified builders.
- There will be increased research on the structures, infrastructure, environmental services and transport systems required by an increasingly technological and mobile European society.
- There will be more investment in renewal and modernisation of the construction products and materials manufacturing industries. Removal of wasteful cut-throat competition will create better profit margins to promote investment in training, research and innovation, and new machinery; and increased security of markets will create better incentives to invest.

10.85 Through this programme of concerted action, we believe the sector can start to turn the vision set out at the start of this report into reality.

Appendix A - SUMMARY OF THE ACTION PROGRAMME

BOX I. Theme: Market growth

Strategic objective:

Halt the historic long-term decline in the share of construction in GDP. In the medium term, at least raise the average level of construction expenditure from the low level of 10% of GDP to which it had fallen in 1992 back up to around 12% of GDP which it had reached in 1989. In the longer term, aim to raise this nearer to the 14-17% range typical of EFTA countries in recent years, to support higher economic growth.

Benefits:

- * increase economic growth
- * increase employment, with multiplier effects on many other sectors
- * meet increasing housing and infrastructure needs in the enlarged single market
- * provide infrastructure to increase the competitiveness of EC manufacturing industries
- * raise quality and competitiveness by investing more in construction
- * improve profitability, training and research by creating steady and secure markets

Costs:

- * higher savings and lower consumption; investment in services and industry should also rise to match construction investment. But built works are a consumption as well as an investment good, so higher construction spending directly increases standards of living

Constraints:

- * public expenditure and the private savings ratio: private-sector infrastructure and building must increase to compensate for decreasing public expenditure

Actions:

All the actions related to quality and competitiveness, to improve value for money, reliability, client service and satisfaction, so that demand increases.

In addition:

Maintain a strong European regional policy, with increasing ERDF funds to infrastructure, and good monitoring of ERDF spending to maximise the impact of infrastructure on private-sector developments and on the competitiveness of local industries.

Set and keep to long-term infrastructure plans in Member States.

Increase the role of the EC in planning and financing trans-european networks.

Measures to release construction from public expenditure constraints:

- privatisation of utilities
- privatisation of public buildings: construction, maintenance and management
- increase the proportion of structural funds to infrastructure
- remove State aids to declining industries
- shift common agricultural policy expenditure to infrastructure investment
- liberalise rent markets

Reduce land prices by better and longer-term land use and regional planning, and by infrastructure investment to anticipate development needs.

R&D on user-charging technologies for infrastructure.

R&D on high-quality low-cost housing and building.

Awareness campaigns on the benefit of new construction.

BOX II. Theme: Market stability

Strategic objective:

Reduce the short-term fluctuations in construction markets.

Benefits:

- * Remove the uncertainty and short-term attitudes in business management which are disincentives to investment, training, research and product development
- * more efficient and innovative construction industry, giving better value for money
- * create stable environment for growth, recruitment, employment creation and improving employment conditions

Actions:

As above for market growth: set and keep to long-term infrastructure plans and public building plans. Avoid stop-go public investment programmes.

Better information on construction markets, costs and prices.

Encourage mobility in labour and in construction activity to reduce the impact of local market variations:

- more open public procurement: removal of local preferences and local political influence
- networks and associations between firms in different regions
- mutual recognition, and mutually compatible registration systems for firms and individuals.

BOX III. Theme: Competitiveness and value-for-money

Strategic objective:

Improve the relationship between quality and cost, and improve the reliability of the service provided to customers in terms of achievement of quality, cost and time targets, and worry-free construction.

Benefits:

- * potential economic savings of the order of 10%-20% of construction costs - 1% to 3% of GDP - leading to increased real construction output greater than this as consumer demand switches from other sectors (a substitution effect)
- * increased competitiveness of all other construction-using economic sectors
- * improved export potential

Constraints:

- * short-term attitudes, and entrenched attitudes of the established professions

Actions:

This involves all of the actions set out under the themes of:

- * *people*
- * *quality*
- * *technology*
- * *competitiveness of products*
- * *the construction process, and*
- * *structure of the industry.*

In particular:

Encourage the development of codes of good practice, qualification systems, and registration systems, to enable customers to properly evaluate and select contractors and consultants, and enable contractors to evaluate and select their subcontractors and suppliers.

In addition:

Rigorously implement good, professional procurement procedures which consider quality, technology and the contractors' quality performance and achievement on codes of good conduct.

Extend competitive tendering to in-house services of the public sector.

Encourage export activity by contractors, consultants and product producers, and also encourage a little more inward and intra-EC activity by contractors and suppliers to increase competition and the flow of new ideas.

Focus research emphasis onto improvement in the construction process: consider setting up national productivity centres for the construction sector to study the whole process, and to coordinate research from all the actors: materials, products, subsystem manufacture, design, management and site erection.

Eliminate the 'murky practices' which add to costs: including corruption in public tendering, and large-scale theft of materials and equipment.

BOX IV. Theme: Competitiveness - construction products

Strategic objective:

Encourage trade, competition and product development by continued removal of technical barriers in construction products, through harmonised European standards and technical approvals.

Benefits:

- * increased trade and price savings
- * reduced construction costs from standardised products and design solutions
- * greater choice, but rationalisation of product ranges, giving economies of scale
- * increased research in construction products

Costs:

- * conformity costs for small producers
- * loss of some high-cost local producers

Constraints:

- * the construction products industry's defensive attitudes and lack of export experience

Actions:

Implementation of the Construction Products Directive.

Develop product information databases, leading to input into product data interchange (PDI) to integrate with CAD systems.

Help product producers to develop proactive marketing attitudes.

Increase involvement of product producers in R&D in product differentiation and product use; and in information and training for specifiers and users.

Use defects databases to identify products which fail frequently.

Up-stream and down-stream integration to facilitate innovations and process changes affecting the whole supply chain.

BOX V. Theme: Quality in construction

Strategic objectives:

- A. Gradually raise the typical levels of specification of buildings and infrastructure projects.**
- B. Reduce the level of defects and the cost of non-quality.**

Benefits:

- * lower life-cycle costs of buildings and works
- * reduce costs of re-work, and the technical control, legal, insurance and other costs of defects
- * reduce cost and worry for clients
- * create new markets for improved and replacement buildings

Costs:

- * higher initial costs of constructed works

Constraints:

- * cut-throat competition in construction markets leading to a bias to low initial costs
- * public procurement procedures bias to low price, and lack of technical expertise in government procurement

Actions:

Improve public procurement procedures, stressing quality of work and of suppliers as well as price.

Develop registration and qualification systems, with common essential requirements, for firms and individuals.

Develop QA systems appropriate to construction, especially small firms, and encourage firms to move from QA to total quality management. Provide training in quality management throughout the industry.

Draw up codes of good practice by subsector bodies with measurable indicators of performance by firms that can be used in selection procedures.

Develop a strong involvement of the insurance industry in the provision of a range of guarantees for contractors, consultants and product suppliers.

Develop and implement labelling schemes, based on objective measures of building performance.

Develop and publish findings from defects databases.

Involve the insurance industry in the development and enforcement of codes of good practice for site organisation, which minimise risks of fire, theft, damage and injury, and hence improve standards of quality control and workmanship.

Maintain adequate and appropriate levels of technical control: review procedures in each country to enable each Member State to evolve its own systems.

Increase efforts on the development of European standards and technical approvals.

Implement 'log-books' for buildings.

BOX VI. Theme: People in the industry

Strategic objective:

Improve working conditions and job satisfaction, and improve training to raise the level of skills and competence, adapt to changing technology which will reduce the hard and unpleasant tasks in construction, and promote employment and recruitment.

Benefits:

- * improve productivity and competitiveness
- * reduce poor workmanship
- * reduce the number of poorly paid and dangerous jobs
- * improve recruitment, prevent labour shortages, and prevent the price increases which would result from capacity constraints
- * create a positive image for the industry, and hence increase demand
- * create employment

Costs:

- * higher hourly labour costs, and relatively fewer unskilled low-wage tasks, but reduced overall costs because of higher productivity

Constraints:

- * increasing supply of unskilled and immigrant labour willing to work below industry agreed rates, thus inhibiting incentives to adopt labour-saving technology

Actions:

Improve the industry image through the media and schools: emphasise construction's central role in improving the environment.

Vigorously implement health and safety measures.

Aim to raise real wages in construction in the low-wage countries: but keep a balance between high employment benefits and protection and the need for flexibility and mobility in the labour force; keep non-wage labour costs low to promote permanent employment.

Target recruitment at women, in management, professions, and site operations.

Positive action, as in Box I, to increase demand and output, and so create incentives to improve productivity in an environment of rising employment levels.

Increase training expenditure generally: by industry, by government and by involving the sector more in EC programmes.

Carry out a thorough study of construction training arrangements in EC and other countries to learn the best features of each.

Build up a network of local training centres to provide in-service training for craftsmen, managers and professions, particularly targeted at small firms and the self-employed.

Develop a European set of definitions of skills and competencies which is flexible and continuously updated to meet the needs of technology.

Provide a broad and flexible basic training for all construction workers.

Develop the system of professional training towards deep specialisations on a broad common base: create a common professional training infrastructure.

Develop systems of registration of craftsmen and professionals, voluntary and run by the industry, which make mutual recognition possible.

BOX VII. Theme: Technology and Research

Strategic objective:

Facilitate the rapid adoption of appropriate new technology and products, in site construction, design and construction product manufacture.

Benefits:

- * improve productivity and competitiveness
- * implement energy-saving and environmentally-sound technology
- * reduce the amount of hard, dangerous and unhealthy tasks
- * improve quality through new solutions and by reducing site labour inputs
- * increased factory manufacturing employment and increased design and management input

Costs:

- * reduction in the share of unskilled labour and manual site erection - but absolute levels of employment will rise as long as construction output rises faster than productivity

Actions:

- A.** *Dissemination of best practice: establish the use of tried and tested methods and products as a consistent, reliable basis for the industry:*

Accelerate the development of standards and technical approvals.

Develop codes of good practice in technology.

Develop networks (e.g. construction parks, builder centres, PC based information networks) to improve the dissemination of information and the adoption of new products and the best available technology by small firms and individuals.

Steadily improve the established methods by systematically incorporating good ideas and innovations identified on individual projects: introduce total quality management (or quality circles or innovation groups) in firms.

Promote 'concept constructions' or demonstration projects to promote adoption of well researched innovations.

- B.** *Improve the effectiveness of R&D systems:*

Make the excellent European construction R&D bodies more effective and build on European diversity by better coordination of research and information exchange through a European centre for construction research and innovation.

- C.** *Increase R&D spend on construction: raise the volume of construction R&D to around 2 to 3% of industry turnover, 0.2% of GDP, in line with the average for other industries.*

Increase EC framework programme funding of construction R&D.

Include R&D expenditure as a criterion in prequalification systems and codes of good conduct.

Consider levy systems to fund R&D and provide grants to firms who carry out in-house research.

Consider other forms of incentive to firms who carry out R&D.

BOX VIII. Theme: International Trade

Strategic objective:

Become the style leader of construction in world-wide markets, building on the strength, reputation and diversity of Europe's designers, to build prestige projects as a flag-bearer for the industry.

Benefits:

- * set high aspirations for Europe's designers, contractors, project managers, and product manufacturers
- * encourage R&D, to raise quality and value for money
- * flag-bearer for European culture, with spin-off for exports by other industries and services

Constraints:

- * differences in language, training and construction processes making collaboration between EC firms difficult

Actions:

Build a series of show-case projects of European design and innovative technology.

Encourage links between European designers and between engineering and architectural schools, to help foster a 'European approach' to project conception and execution, while building on the world's image of 12 separate nations and cultures.

Designers to create links with excellent contractors and with financial institutions to be able to put together design-build-finance packages.

Encourage the emergence of a few world-class construction firms able to act as standard-bearers.

Harmonise export credit arrangements: and encourage a coordinated approach to major world projects.

Help those contractors who are working outside the EC

- to get reliable information on the export markets (including legislation, regulations etc.)
- to get access to competitive sources of finance and export credit insurance
- to get free access to foreign markets on the principle of reciprocity.

BOX IX. Theme: Environment

Strategic objective:

The construction sector must be seen as the protector, developer and champion of sustainable development; and build on new technologies to capture new markets.

Benefits:

- * improved environment
- * better image for the sector and increased demand
- * focused R&D, developing new processes and products, and new markets
- * less confrontation and more rational discussion of development options

Costs:

- * higher initial costs of some projects; need to restrict some projects
- * restriction on quarrying and impact on materials costs; costs of emission control in construction products manufacturing

Actions:

Make energy conservation in buildings a priority issue for the EC and for all EC governments.

Research, develop and promote passive thermal principles in architectural, structural and environmental services design.

Train more environmental/building services engineers, with a broader role and higher status.

Incentives for energy conservation measures in the existing building stock.

Increased recycling of materials to minimise costs and environmental damage.

R&D on waste management and recycling of construction materials.

R&D and development of new and higher standards of air quality, and microbiological, toxic and allergenic characteristics of building materials.

Information dissemination and awareness campaigns on energy conservation techniques and products.

Energy- and eco-labelling of buildings and construction products.

Uniform and universal inclusion of environmental impact and energy conservation aspects in construction permit procedures.

Implementation of health and safety planning requirements of the Temporary and Mobile Sites Directive, including environmental considerations, waste management and recycling.

Positive marketing and media management by the industry about its positive contribution and fundamental mission towards the development of the natural and built environment.

BOX X. Theme: The Construction Process

Strategic objective:

Develop a legal and institutional framework which permits customers to choose from a range of procurement processes, to suit their own circumstances and capabilities, within the context of a system of guarantees, insurance and legal liability which offers the customers the level of protection they require.

Benefits:

- * Makes the industry more consumer-oriented
- * Removes the disincentives to cross-border activity created by rigid, distinct national systems
- * Permits greater flexibility to meet customers' needs at lower cost
- * Increases competition between approaches, and removes institutionalised monopolies of national professional bodies
- * permits new approaches to collaboration between parties, particularly between the design professions and the contractors, to improve buildability, cost effectiveness, and feedback from construction experience to design
- * permits fast build approaches to minimised financing costs
- * permits more single-point responsibility which enables guarantees to be provided on a project basis

Costs:

- * dangers of loss of customer protection if established control processes are changed too quickly
- * fear of dull or bad design if cost considerations dominate and the independent designer's role is weakened

Constraints:

- * established legal systems, including civil code provisions
- * strong opposition from professional institutions

Actions:

Define clear systems of construction permission in each EC Member State, with clear specification of minimum requirements for documentation and compliance with urban planning, structural safety, environment and health and safety requirements

Compulsory use of registered qualified firm or consultant for construction permission (but not necessarily members of any one professional body)

The sector to work together towards a goal of drawing up a range of standard contract conditions adaptable to the legal framework of each EC state, for alternative procurement routes (general contracting, construction management, design-build, etc.)

Assist the insurance industry to develop systems of guarantees and defects insurance which offer flexibility and choice for consumers - or set up mutual bodies to provide guarantees

Develop systems of registration and qualification of all actors in the process: contractors, consultants, individual professionals, managers and craftsmen

BOX XI. Theme: Structure of industry - contractors and consultants

Strategic objective:

- A. Avoid State intervention in industrial structure, but the industry should develop a structure which combines**
- * the flexibility of many small specialist and local firms
 - * a number of large world-class EC firms.
- B. Raise the performance of very small firms and self-employed persons, which represent half of all employment.**

The overall share of small firms (less than 20 employees) will probably not change, and may increase, but the result of these actions should be to strengthen and stabilise the segment comprising very small firms by reducing the number of self-employed persons and micro-firms (currently over 1.7 million enterprises) and increasing their average size (say from the present average of 2 members per firm to 3 or 4)

Benefits:

- * improved competence of SMEs and so of the whole industry
- * better reputation, leading to increased demand for the industry
- * more stable sector of small firms, with more secure employment and better growth prospects

Actions:

Help small firms overcome the disadvantages of smallness:

Target information and training to small firms and individuals (see Box VI).

Encourage apprenticeships in small firms.

Encourage contractors to take responsibility for the performance of their subcontractors, and to help them with training, technical information, quality management and performance monitoring.

Encourage franchising.

Encourage networking, quasi-firms and other flexible long-term relationships.

Make registration/qualification systems responsive to the needs of small firms, permitting new entrants with good qualifications and capabilities, but excluding unqualified firms or those with bad performance records.

BOX XII. Theme: Information

Strategic objective:

Provide a better flow of information on which technical and strategic decisions can be taken.

Actions:

Develop a consistent and accurate set of construction output statistics which are on an identical basis for each country with respect to definitions of demand sectors (for example, public/private housing, public/private non-residential buildings, public/private infrastructure, industrial construction, repair and maintenance) and NACE categories (for example, major works, building services (electrical/mechanical), finishing trades), published rapidly, and detailed by region within countries.

Cooperation of enterprises and representative bodies with the statistical offices to provide information and help define concepts and methodologies.

Databases on construction products with CE marks.

Databases on defects.

Databases on research results and papers.

Provide comprehensive and easily available information on local procedures, regulations, etc., which affect construction across Europe (this may become an obligation under the new GATT agreements).

Appendix B - GLOSSARY AND DEFINITIONS

The terms used in this report generally have their common English meaning, and not necessarily the meanings ascribed to them by NACE or any other nomenclature, nor the meaning which would be implied by similar words in another EC language.

BOOT: build-own-operate-transfer: a financial structure which permits a private-sector contractor or consortium to obtain a concession from a host government or public body to design, build, own and operate an infrastructure facility for an agreed concession period, transferring the assets of the facility to the government or public body at the end of the concession period. The concessionee obtains its revenue by charging tolls or tariffs for the provision of the services of the facility, or from an operating fee.

Building: the construction of works above ground which are intended to create protection from the elements for human occupation or use, animals, or for enclosing goods, equipment or industrial processes.

Building contractor:

a contractor who undertakes contracts to provide site services on the construction of buildings. A building contractor will usually have employees who undertake some of the site work, but may subcontract all of the site erection work.

Civil engineering construction:

construction of infrastructure: for example, roads, car parks, railways, airports, bridges, tunnels, dams, reservoirs, harbours, rivers, canals, irrigation, land drainage, pipelines, sewers, gas and water mains, power and telecommunications cable networks, overhead lines, towers, offshore platforms, construction work at major industrial installations and large sites, piling, foundations for plant of buildings, shaft drilling, mine sinking, landscaping, parks, sports grounds, land reclamation, opencast mining and quarrying. [In common English civil engineering includes similar activities at military installations.]

Civil engineering contractor:

as for building contractor, but for civil engineering work.

Competition: the act of competing for markets, with the existence of more than one firm or supplier. The strength or degree of competition is indicated by the number of suppliers who bid for a contract. *Excessive competition* is when suppliers are forced to bid at prices below their optimal long-run marginal costs, so that there is insufficient provision for reinvestment, training, R&D costs, etc. *Cut-throat competition* is when bidders deliberately bid at prices designed to retain or gain markets by driving competitors out of business, by accepting short-term losses, or losses on a few contracts, which if continued in the long run would lead to bankruptcy.

Competitiveness (or competitiveness):

levels of productivity, service and quality which are at least as good as those of other suppliers in the same market. [Note that there can be excessive competition between firms which are not competitive, and there can be high competitiveness without any competition.]

Construction: all economic activities which involve assembling or erecting fixed structures, plant or equipment, or earth movement on site. Includes building, civil engineering (roads, railways, ports, waterways, bridges, towers, dams, tunnels, pipelaying, etc.), underground excavation, opencast mining and quarrying, process plant and general steelwork construction, offshore structures, landscaping and land reclamation.

Construction industry:

all actors who contribute to the construction of works: manufacturers, suppliers, building and public works contractors, consultants and designers.

Construction professional or building professional:

an individual trained in design or management for construction (for example, architects, engineers, surveyors and valuers).

Construction sector:

all the actors involved in construction: contractors, consultants, designers, self-employed craftsmen working in construction, construction products and materials manufacturers and suppliers, research establishments and testing establishments working in construction, developers, representative bodies, public bodies and departments dealing with construction, developers and clients of construction.

Constructor: a contractor or subcontractor who executes site construction or erection work.

Consultant: a construction professional or firm providing design, management, cost or other services to a client (or subcontracted to another consultant).

Contractor: any firm which undertakes work relating to a construction project, under a contract to the client. This could include designers, project managers or constructors.

Craftsman: an individual trained (at whatever level) in construction skills.

Heavy engineering construction:

the part of civil engineering which includes the fabrication or manufacture of heavy items of structures, plant and equipment (for example, construction of oil refineries, steelworks and other process industries, power-stations, hydroelectric dams, offshore platforms and modules, steel bridges and structures).

Prequalification:

selection of a list of bidders against objective criteria.

Prequalification system:

a system with standards and codes of practice against which a firm's performance can be measured and information provided to potential purchasers to enable them to prequalify bidders.

Project: a works in the process of design and construction [Note: in English the term does not just mean the plans, drawings and project documentation].

Public works: construction projects for a public authority.

Qualification: systems which provide an assessment of firms' capacity, capabilities and experience, against a classification of work categories.

Quality Assurance:

formalised management and documentation systems designed to assign responsibilities and enable errors to be identified and traced, records to be kept, and documentation to be properly registered and retrieved, and standards and procedures to be enforced.

Quality Management:

management systems for assessing quality and performance, and identifying and implementing changes in operations or products to improve quality.

Registration: systems recording individuals' or firms' compliance with legal requirements to practice their trade or profession.

Value for money:

providing services or products at the highest quality or level of service which is possible, at a given cost, with the technology and know how which is available at the time.

Works: any scheme under construction.

Appendix C - EC PUBLICATIONS REFERRED TO

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Luxembourg, Office for Official Publications of the EC, 1992. Catalogue No CT-75-92-712-EN-C.

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1. Bulletin of the EC, Supplement 6/93. 152 pp., Luxembourg, Office for Official Publications of the EC, 1993. Catalogue No CM-NF-93-061-EN-C.
2. Revised version, 168 pp., including 14 pp. figures and maps in colour. Luxembourg, Office for Official Publications of the EC, 1994. Catalogue No CM-82-94-529-EN-C.

National Accounts ESA, Detailed Tables by Branch 1985-90. Eurostat.
In English, French and German. Luxembourg, Office for Official Publications of the EC, 1993. Catalogue No CA-76-92-108-3A-C.

Legislation

Construction Products Directive

89/106/EEC: Council Directive of 21 December 1988 on the approximation of the laws, regulations and administrative provisions of the Member States relating to construction products, OJ L 40, 11.2.89, p. 12.

Environmental Impact Assessment Directive

85/337/EEC: Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, OJ L 175, 5.7.85, p. 40.

Low Voltage Directive

73/23/EEC: Council Directive of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits, OJ L 77, 26.3.73, p. 29 (as amended).

Municipal Waste Water Directive

91/271/EEC: Council Directive of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.5.91, p. 40.

Mutual Recognition of Diplomas Directives

First Directive

89/48/EEC: Council Directive of 21 December 1988 on a general system for the recognition of higher-education diplomas awarded on completion of professional education and training of at least three years' duration, OJ L 19, 24.1.89, p. 16.

Second Directive

Council Directive 92/51/EEC of 18 June 1992 on a second general system for the recognition of professional education and training to supplement Directive 89/48/EEC, OJ L 209, 24.7.92, p. 25.

Public Procurement Directives

Works contracts

Council Directive 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts, OJ L 199, 9.8.93, p. 54.

Supply contracts

Council Directive 93/36/EEC of 14 June 1993 coordinating procedures for the award of public supply contracts, OJ L 199, 9.8.93, p. 1 (replacing, with effect from 14 June 94, Directives 77/62/EEC, 80/767/EEC and 88/295/EEC).

Services contracts

Council Directive 92/50/EEC of 18 June 1992 relating to the coordination of procedures for the award of public service contracts, OJ L 209, 24.7.92, p. 1.

Water, energy, transport and telecommunications sectors

Council Directive 93/38/EEC of 14 June 1993 coordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors, OJ L 199, 9.8.93, p. 84 (replacing, with effect from 1 July 94, Directive 90/531/EEC).

Temporary or Mobile Construction Sites Directive

Council Directive 92/57/EEC of 24 June 1992 on the implementation of minimum safety and health standards at temporary or mobile construction sites (eighth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC), OJ L 245, 26.8.92, p. 6.

Water Quality Legislation

for the Directives and other legislation on this subject, see

European Community Environment Legislation, Vol. 7, Water. European Commission (Directorate-General Environment, Nuclear Safety and Civil Protection).

Luxembourg, Office for Official Publications of the EC, 1992. Catalogue No CR-61-91-007-EN-C.

Appendix D - ABBREVIATIONS AND ACRONYMS

AQC	Agence pour la prévention des désordres et l'amélioration de la qualité de la construction (Agency for the prevention of defects and the improvement of the quality of construction, France)
BGB	Bundesgesetzbuch (German Civil Code)
BOOT	Build-own-operate-transfer
BRE	Building Research Establishment (UK)
CAD	Computer-aided design
CAM	Computer-aided manufacturing
Cedefop	Centre européen pour le développement et la formation professionnelle/European Centre for the Development of Vocational Training
CEN	Comité européen de normalisation/European Committee for Standardisation
Cenelec	Comité européen de normalisation électrotechnique/European Committee for Electrotechnical Standardisation
CERF	Civil Engineering Research Foundation (UK)
CIC	Construction Industry Council (UK)
CII	Construction Industry Institution (USA)
CIM	Computer-integrated manufacturing
CIRIA	Construction Industry Research and Information Association (UK)
CIS	Commonwealth of Independent States
CITB	Construction Industry Training Board (UK)
CMEA	Council for Mutual Economic Assistance, or Comecon
CNC	Confédération nationale de la construction (National Building Confederation, Belgium)
Comett	Community Programme for Education and Training in Technology
CPD	Construction Products Directive
CSTC	Centre scientifique et technique de la construction (Construction Industry Scientific and Technical Centre, Belgium)
DATAR	Délégation à l'aménagement du territoire et à l'action régionale (Regional development and research agency, France)
DIY	Do it yourself
EAP	Environmental Action Programme
EC	European Community
EDI	Electronic data interchange
EFCA	European Federation of Engineering Consultancy Associations
EFTA	European Free Trade Association (member countries: Austria, Finland, Iceland, Liechtenstein, Norway, Sweden, Switzerland)
EIB	European Investment Bank

ENBRI	European Network of Building Research Institutes
EOTA	European Organisation for Technical Approvals
Erasmus	European Action Scheme for Mobility of University Students
ERDF	European Regional Development Fund
ESA	European System of Integrated Accounts
ETA	European Technical Approval
Eurostat	Statistical Office of the European Communities
Eurotecte	European technical research (Community-wide network of demonstration projects in the field of new technologies and vocational training)
FIEC	Fédération de l'industrie européenne de la construction/European Construction Industry Federation
FORCE	Formation professionnelle continue/Community Action Programme for the Development of Continuing Vocational Training
GAIPEC	Groupement des associations interprofessionnelles européennes de la construction (Federation of European Construction Industry Professional Associations)
GDP	Gross domestic product
GFC-AREF	Groupement professionnel paritaire - Associations régionales pour la formation continue (Regional organisation of GFC-BTP, <i>below</i>)
GFC-BTP	Groupement professionnel paritaire pour la formation continue dans les industries du bâtiment et des travaux publics (Organisation for continuing training in construction, France)
ID	Interpretive Document
IRIS	Programme d'initiative visant la constitution d'un réseau de projets de démonstration en matière de formation professionnelle des femmes/Network of Demonstration Projects on Vocational Training for Women
IT	Information Technology
Lingua	Programme to promote training in foreign languages in the European Community
NACE	Nomenclature générale des activités économiques dans la Communauté européenne (General industrial classification of economic activities with the European Community)
NHBC	National House Building Council (UK)
NVQ	National Vocational Qualification (UK)
OECD	Organisation for Economic Cooperation and Development
OJ L	Official Journal of the European Communities, Series L (Legislation)
OPQCB	Organisme professionnel de qualification et de classification du bâtiment et des activités connexes (Building and allied trades registration and classification organisation, France)
PDI	Product data interchange
PETRA	Programme d' action pour la formation et la préparation des jeunes à la vie adulte et professionnelle (Action programme for the vocational training of young people and their preparation for adult and working life)
PHARE	Pologne-Hongrie: assistance à la restructuration des économies/Poland and Hungary: Aid for Economic Restructuring
QA	Quality assurance

Qualifelec	Organisme de qualification des entreprises de l'équipement électrique (Electrical equipment suppliers' registration and classification organisation, France)
R&M	Renovation and maintenance
RTD	Research and Technological Development
SAVE	Special Action Programme for Vigorous Energy Efficiency
SBM	Synthetic building material
SMEs	Small and medium-sized enterprises
TACIS	Technical Assistance to the Commonwealth of Independent States and Georgia
Tempus	Trans-European Mobility Scheme for University Studies
TQM	Total quality management
UEA _{tc}	Union européenne pour l'agrément/European Union of Agrément
uPVC	unplasticized polyvinyl chloride
VAC	Ventilating and air-conditioning (sector)
VOB	Verdingungsordnung für Bauleistungen (Basic contract conditions for public building works, Germany)
WSA	WS Atkins International Limited



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Construction is back on the agenda after two decades of declining markets. Environmental concerns, the building of European infrastructure networks, solving housing problems, reconstruction in Eastern Europe, and the return to more rapid economic development in many parts of the third world mean there is much to do and many markets to win. There is however a danger of failing to grasp these opportunities, and of allowing the markets in Europe and the quality of construction to decline. This report deals with the long-term strategies required to improve the construction sector's competitiveness and quality, and to raise the level of construction output. It is intended to stimulate debate. There will not be universal agreement with the consultants' views of the future and the strategies to be pursued. The initiative for action should be expected to come from the firms and their representatives in the sector, with support and legislation from national governments and from the Community where necessary.

CHAPTER ONE is an overview of the strategic issues, and summarizes the overall conclusions and recommendations of the study.

CHAPTERS TWO TO FIVE cover the main issues of the structure of the industry, its processes, markets, costs and prices, and competitiveness.

CHAPTERS SIX TO NINE discuss four of the key areas in which the industry must take strategic action: quality, technology and innovation, human resources and training and environment.

THE FINAL CHAPTER summarizes the discussion of the previous chapters into a set of proposals for action, and indicates the consultants' view of the priorities for each of the main groups of actors in the sector. This chapter includes a review of the benefits of the proposed strategies and the consequences of failure to take action.



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Recommendations on achieving quality and best value in the built environment

Building a Better Future

The construction industry is a major part of our national economy and has an impact in every constituency in the land. The industry employs millions directly but it is also an “enabling sector” for the wider economy.

Every £1 invested in construction generates £2.84 in the wider economy. The building and upkeep of new offices, warehouses, homes, service facilities and new places generate jobs, development, and growth. Unlike most other economic sectors, construction activities are widely dispersed throughout the country

Any development programme has to have a construction component. Our health, education and transport systems all rely on the construction industry to design, build and maintain the built environment which underpins our social and economic frameworks.

To achieve national economic growth in tandem with best value, the construction industry needs a commitment to a programme of investment in infrastructure and housing; a commitment to quality in the built environment and; co-ordinated planning for construction.



Construction Industry Council

The Construction Industry Council (CIC) is the representative forum for the professional bodies, research organisations and specialist business associations for professional services providers in the construction industry.

It provides a single voice for professionals in all sectors of the built environment through its collective membership of 500,000 individual professionals and 25,000 firms of construction consultants.



HM Government

Industrial Strategy: government and industry in partnership



Construction 2025

July 2013

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Executive summary

Construction is a sector where Britain has a strong competitive edge. We have world-class expertise in architecture, design and engineering, and British companies are leading the way in sustainable construction solutions. It is also a sector with considerable growth opportunities, with the global construction market forecast to grow by over 70% by 2025.

Changes in the international economy are creating new opportunities for Britain. To help boost the economic recovery, Government is doing all it can to help British businesses grow and have the aspiration, confidence and drive to compete in the global race. This includes reforming the planning system, ensuring funding is available for key infrastructure projects and supporting the housing market through key initiatives such as the Help-to-Buy Equity Loan Scheme and the Funding for Lending Scheme.

The Government wants to work with industry to ensure British companies are well-placed to take advantage of these opportunities. As part of our Industrial Strategy policy, the Government is building long-term partnerships with sectors that can deliver significant growth.

Construction is one of those sectors. Over the last six months, Government has been working with people across the construction industry to develop a long-term vision. The result is 'Construction 2025' a joint strategy which sets out how industry and Government will work together to put Britain at the forefront of global construction over the coming years. This document summarises the key themes and commitments within the strategy. The full strategy can be downloaded from www.gov.uk/bis.

Our vision for 2025

Working together, industry and Government have developed a clear and defined set of aspirations for UK construction.

It begins with a clear vision of where UK construction will be in 2025:

- **PEOPLE** An industry that is known for its talented and diverse workforce
- **SMART** An industry that is efficient and technologically advanced
- **SUSTAINABLE** An industry that leads the world in low-carbon and green construction exports
- **GROWTH** An industry that drives growth across the entire economy
- **LEADERSHIP** An industry with clear leadership from a Construction Leadership Council

This vision will provide the basis for the industry to exploit its strengths in the global market.



The British-designed Reichstag uses reflected light to significantly cut energy consumption.

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials



The global construction market is forecast to grow by over 70% by 2025.

Global Construction 2025;
Global Construction Perspectives and Oxford
Economics (July 2013)

People

An industry that is known for its talented and diverse workforce.

We have a great opportunity to convey excitement about career opportunities in the built environment. Low carbon technologies, digital construction, the internet – all of these developments are changing the world for the better. We want more people to realise the range and potential of working in construction.

To drive our vision for Construction 2025 we must:

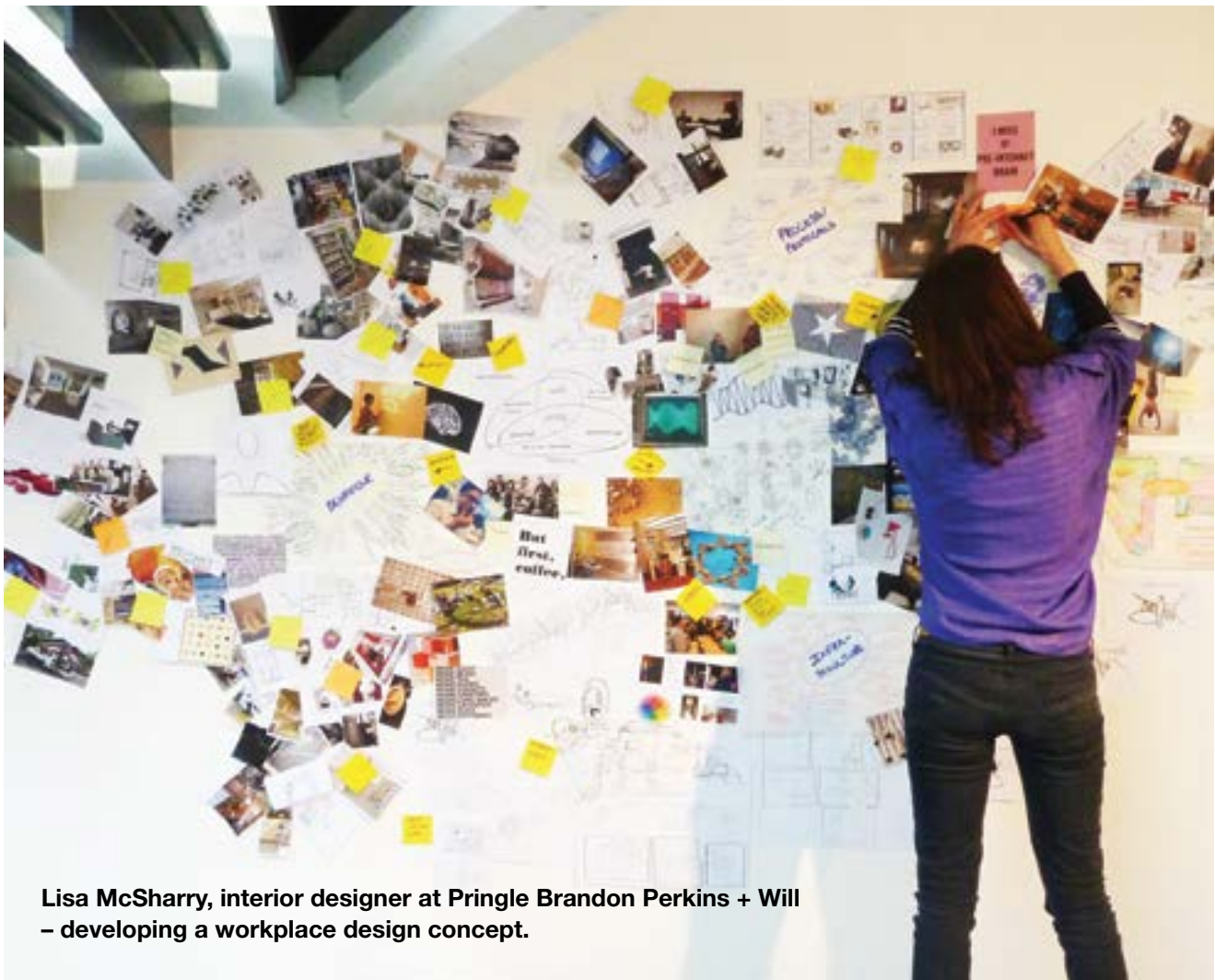
Reinvigorate the image of the industry

Change is required in the construction industry itself and in how the construction industry is perceived by the public.

Industry and Government must work together to inspire young people.

Increase capability in the workforce

The industry faces a pressing need for a capable workforce that can deliver transformational change in the next decade. As the wider economy emerges from recession, construction firms must be able to recruit, retain and develop skilled, hard-working people in sufficient numbers to meet the increasing demand for construction.



Lisa McSharry, interior designer at Pringle Brandon Perkins + Will
– developing a workplace design concept.



“ Our industry is extremely diverse and offers great opportunities for those committed to working hard and succeeding in their field. As a sports team needs a variety of players performing well as a unit, so construction relies on people of all capabilities coming together and doing their bit to deliver successfully. ”

Kevin Louch, Managing Director,
Stanford Industrial Concrete Flooring Ltd

Our commitments to enable us to realise the vision are to:

Improve the image of the industry by inspiring young people and through a co-ordinated approach to health and safety and improving performance in the domestic repair and maintenance market.

Engage with bodies across the industry to ensure that capability and capacity issues in construction are addressed in a strategic manner.



- 1 Graham Brierley – Digital Engineer, Laing O'Rourke
- 2 James Begley – Carpentry and Joinery Level 3 Apprentice, D.W. Begley Carpentry & Joinery, trained by CITB
- 3 Andrew Wolstenholme OBE – CEO, Crossrail
- 4 Richard Meredith – Explore Manufacturing
- 5 Tony Pidgley CBE – Chairman, Berkeley Group
- 6 Marianna Micallef – Imperial College London PhD student
- 7 Claire Gott – Structural Engineer, WSP Group
Barry Clarke – ICE President
- 8 Leon Baptiste – Fire Alarm Engineer, Kier Group
Rutherford Appleton Laboratory

Smart

An industry that is efficient and technologically advanced.

The UK has a world-class science and research base that supports the development of innovative solutions in a number of priority areas for construction. These solutions need to be exploited across the industry in order to achieve the strategy's ambition.

To drive our vision for Construction 2025 we must:

Invest in smart construction and digital design

The radical changes promised by the rise of the digital economy will have profound implications for UK construction. UK construction businesses must be ready

to secure their share of the forecast £200 billion p.a. global market for integrated city systems by 2030.

Bring forward more research and innovation

To meet the local and global opportunities presented by green construction, smart construction and digital design, UK construction must invest in people and technology.

Building Information Modelling

Industry and Government have made a good start through their joint commitment to the Building Information Modelling (BIM) programme.



Runcorn bridge uses an innovative cathodic protection system, with remote monitoring, to stop corrosion and simplify future maintenance and inspection.



“ Industry must embrace technological progress to meet the demands of a rapidly changing world. Innovations like Digital Engineering and Design for Manufacture and Assembly will be fundamental to delivering a higher quality, more sustainable built environment for future generations. ”

Anna Stewart, Group Chief Executive, Laing O'Rourke

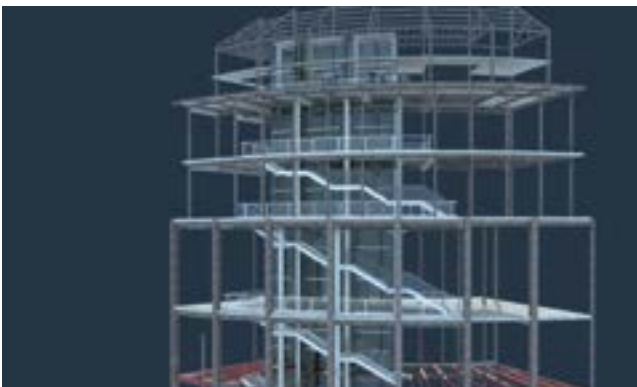
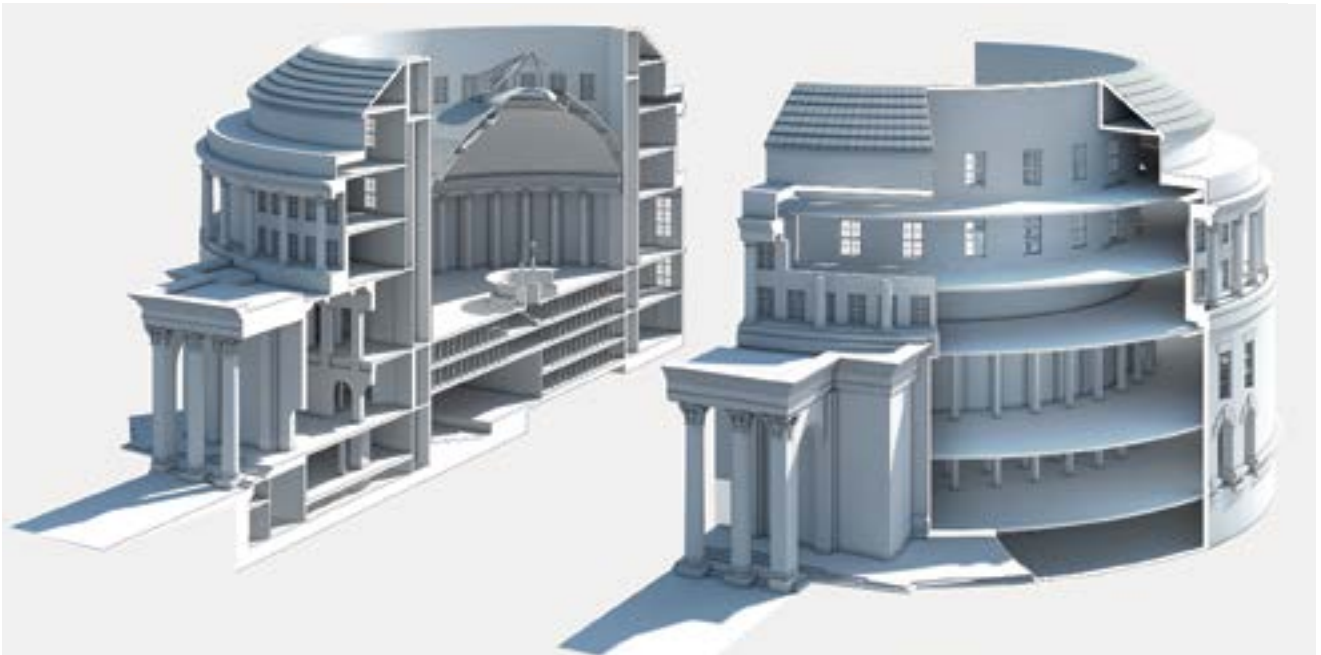
However, the challenge is significant and opportunity vast.

Government will mandate BIM for all centrally procured Government contracts from 2016. Industry must therefore meet the challenge – only through the implementation of BIM will we be able to deliver more sustainable buildings, more quickly and more efficiently. BIM is also critical to the successful implementation of a wider offsite manufacturing strategy.

Our commitments to enable us to realise the vision are to:

Build the UK's competitive advantage in smart construction and digital design through the Digital Built Britain agenda.

Work with academic and research communities to bring forward more research, development and demonstration to the wider industry and work to remove barriers to innovation.



Case study:

The Manchester Town Hall Building project is one of the Government's pilot Building Information Modelling (BIM) schemes and has proved how valuable digital engineering can be during preconstruction and production delivery stages: saving money on unnecessary temporary works, saving the programme a total of nine months and demonstrating to the client BIM's potential for future facilities management purposes. Virtual 3D tours have educated key stakeholders, whilst also providing English Heritage with assurances that the building's heritage would be respected and protected.

Sustainable

An industry that leads the world in low-carbon and green construction exports.

Wider environmental considerations will transform what we build, what we build with, and how we build it. There will also be enormous pressure to improve the energy performance of our existing building stock. Tackling this issue represents a real opportunity – with global growth forecast in green and sustainable building construction to be on average 22.8% pa between 2012 and 2017.

To drive our vision for Construction 2025 we must:

Improve client capability and procurement

The industry's customers (including Government) have an important role to play in transforming the construction

industry. How projects come to market has a significant impact on the ability of the construction industry to provide innovative, value for money solutions. Much waste in construction is driven through the approach to risk across the supply chain.

Build a low-carbon construction industry

Developing greater clarity and certainty around sustainable and low-carbon construction opportunities which are emerging is essential to give businesses the confidence to invest in the potential of these new markets.



M&S Cheshire Oaks is designed to be the most carbon efficient store of its type.



“ I am convinced there will be significant opportunities as the green economy gathers momentum and businesses focus on ‘green’ returns. The emphasis on whole-life cost and retrofit supports this agenda, with reduced embodied carbon in infrastructure and more efficient heating/cooling and lighting in buildings. ”

Mike Putnam – Chief Executive, Skanska

Understand future work opportunities

A better understanding of the shape of the future work prospects in key public and private sector markets will provide individual businesses with a sounder basis on which to make the decisions to recruit, innovate, train and invest – ensuring they are fit for purpose.

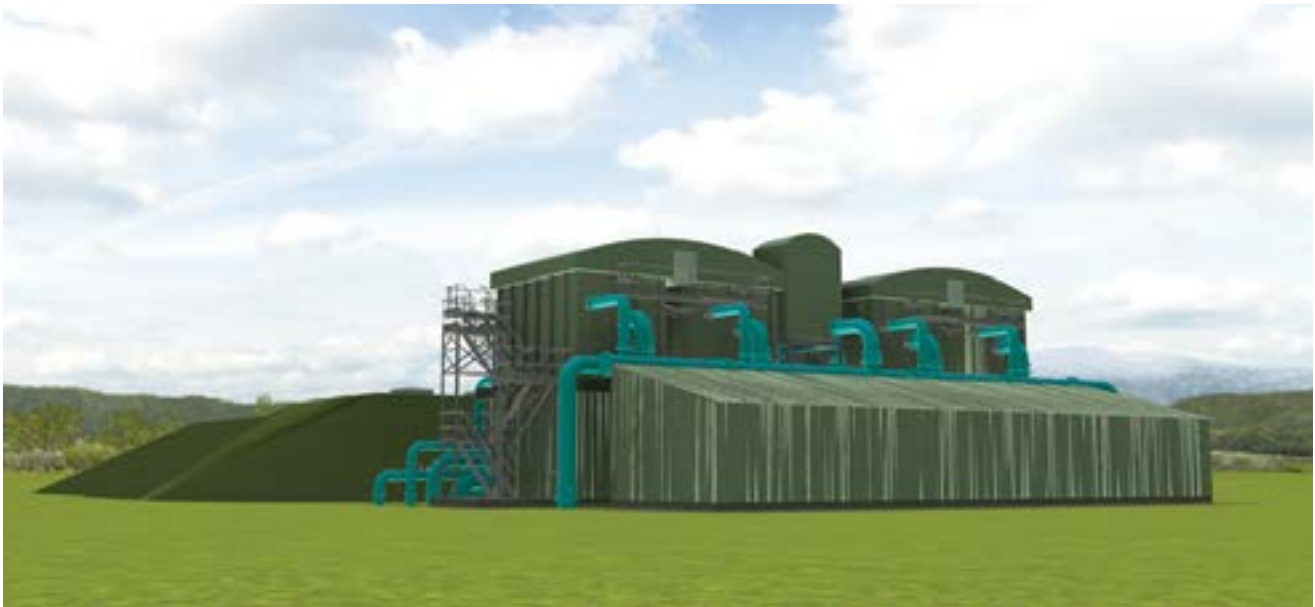
Our commitments to enable us to realise the vision are to:

Develop market and technology based plans to secure the jobs and growth opportunities from

driving carbon out of the built environment, led by the Green Construction Board.

Develop and refine the pipeline of future work opportunities and make it more useable for all construction businesses.

Drive procurement efficiency and explore options for further efficiency gains in the procurement process, led by the Government Construction Board and the IUK Client Group.



Case study:

Anglian Water has an ambitious sustainability policy aimed at reducing both operational and capital carbon emissions, waste and negative community impacts. They have developed a long-term relationship with their supply chain, allowing the establishment of best working practices and common sustainability strategies. This approach is reducing both carbon and cost through, for example, utilising offsite builds and increasing the use of no-dig techniques for the installation of pipelines.

Growth

An industry that drives growth across the entire economy.

The global construction industry is set to see growth of 4.3% pa until 2025, concentrated primarily in emerging economies. Through adopting a more strategic approach to global trade, and focusing support on UK comparative strengths, there is scope for the UK to considerably expand its share of global export markets.

To drive our vision for Construction 2025 we must:

Prepare for global population growth and urbanisation

The global population is forecast by the United Nations to increase to c.9 billion people over the next 40 years, from the current figure of c.7.2 billion. The majority

of that population growth is forecast to be in urban environments. The population in Africa is anticipated to double over the next 40 years and India will likely become the world's most populous country with over 1.5 billion people alone. These major demographic shifts present substantial infrastructure challenges – be it water, transport or power – all of which UK industry is well placed to meet.

Create a strong and resilient supply chain

Construction has been hard hit by the economic downturn. The impact of this is being particularly



Shanghai, like many cities in developing countries faces growing infrastructure challenges.



“ Quality design is an invaluable part of the construction process and I hope my architecture review will bring the industry even closer together. We should capitalise on the success of British architects abroad which brings numerous advantages and export opportunities, as well as sustainable city-making in the UK. ”

Sir Terry Farrell

felt among the many small businesses that operate in the sector. We need to create the conditions for our supply chains to thrive and be confident about investing in new technology and people.

Our commitments to enable us to realise the vision are to:

Identify global trade opportunities for UK professional services, contracting and product manufacturing, develop partnerships and promote UK construction through the GREAT brand.

Create conditions for construction supply chains to thrive by addressing access to finance and payment practices.



Global Cities

In 1900, only 13% of people lived in urban areas. Today, cities account for more than half the global population and this figure is expected to increase to 70% by 2050. In the face of rapid urbanisation, UK Industry can work with global city leaders to help create more liveable, sustainable and productive cities. UK industry has successfully delivered some of the globe's largest infrastructure and regeneration projects, such as Crossrail and London 2012. This expertise and know how, from across the industry spectrum, can be applied to those cities that face the same infrastructure challenges that UK industry is currently meeting.

Leadership

An industry with clear leadership from a Construction Leadership Council.

The publication of this strategy is the start of a process which will be taken forward by the new Construction Leadership Council, co-chaired by The Rt Hon Dr Vince Cable and Sir David Higgins. The Council brings together organisations from across the diverse spectrum of construction. It will provide coherent leadership to ensure that the commitments set out in this strategy are delivered and our shared ambition is achieved.

The Construction Leadership Council

The Construction Leadership Council will focus on the delivery of the joint industry and Government commitments. It will oversee the delivery of the Action Plan and the strategic priorities that will allow us to meet our vision for 2025.



London 2012 was the largest re-development project in Europe and was delivered on budget and on time.



“ This strategy’s publication is just the first step in putting UK construction at the forefront of the global market – strong leadership will be vital in driving lasting change. The Construction Leadership Council will provide a forum for industry and Government to work together in pursuit of our ambitions.

Sir David Higgins, Chief Executive, Network Rail



Our commitment to enable us to realise the vision is to:

Lead the transformation of the industry through the new Construction Leadership Council, with actions owned and delivered by industry bodies

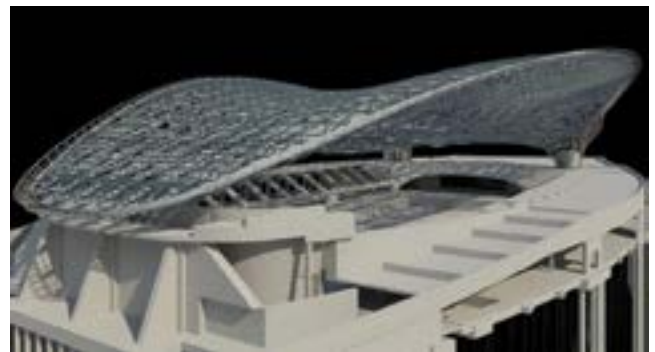


Image courtesy of UKTI

Case study:

London 2012 Olympic Park – an example of UK construction rising to the challenge of delivering a world-class project, under budget and on time. Through an innovative partnership between industry and Government, this major scheme was procured and then delivered in a manner that ensured its success, whilst always under the spotlight of the world’s media.

London 2012 has been widely praised as being the most successful Olympics to date. The Games were the greenest too, with innovative approaches to logistics, site ecology and the reuse of venues. Thirty thousand people worked on the construction of the Games, with schemes in place to ensure the delivery of apprentice places and employment of local people. Most importantly, the Games were the safest ever, with no lives lost during the construction delivery.

Foreword

Construction 2025 is a partnership between industry and Government to transform the construction industry.

Central to the industrial strategy is the development of long-term partnerships between Government and those sectors which can deliver significant growth. Construction is one of those key sectors. It is an enabling sector which has a massive impact on the performance of the wider economy.

But construction faces a number of challenges. Its businesses are struggling to access finance. That is why we are extending our Enterprise Finance Guarantee pilot so that more providers are able to offer trade credit.

The Construction industry could do better in export markets. We have world-class expertise in architecture, design and engineering. British companies are leading the way in sustainable construction solutions. Changes in the international economy are creating new opportunities, with the global construction market set to grow by 70% by 2025. But real effort is required if we are to make the most of these opportunities.

This partnership and the publication of this strategy is only the start of the process. We are very grateful to Peter Hansford and the Construction Industrial Strategy Advisory Council for getting us this far so quickly. And to all those throughout the industry who have contributed their views to developing this strategy.

The industry has set itself stretching ambitions between now and 2025. Achieving these will need passion, commitment and expertise.

The leadership challenge for the Construction Leadership Council is to work with industry and Government to deliver this exciting agenda. As chairmen of the Council we shall do all we can to make this happen.



A stylized, cursive signature of Vince Cable, consisting of a large, sweeping 'V' followed by a smaller 'C' and a long horizontal stroke.

Vince Cable



A cursive signature of Michael Fallon, with the first name 'Michael' and the last name 'Fallon' clearly legible.

Michael Fallon



A stylized, cursive signature of David Higgins, featuring a large 'D' and 'H' followed by a long horizontal stroke.

David Higgins

Our vision for 2025

Our vision for construction in 2025 is:

1. An industry that attracts and retains a diverse group of multi-talented people, operating under considerably safer and healthier conditions, that has become a sector of choice for young people inspiring them into rewarding professional and vocational careers
2. A UK industry that leads the world in research and innovation, transformed by digital design, advanced materials and new technologies, fully embracing the transition to a digital economy and the rise of smart construction
3. An industry that has become dramatically more sustainable through its efficient approach to delivering low carbon assets more quickly and at a lower cost, underpinned by strong, integrated supply chains and productive long term relationships
4. An industry that drives and sustains growth across the entire economy by designing, manufacturing, building and maintaining assets which deliver genuine whole life value for customers in expanding markets both at home and abroad
5. An industry with clear leadership from a Construction Leadership Council that reflects a strong and enduring partnership between industry and Government

Construction in 2025 is no longer characterised, as it once was, by late delivery, cost overruns, commercial friction, late payment, accidents, unfavourable workplaces, a workforce unrepresentative of society or as an industry slow to embrace change.

In short, by 2025 construction has been radically transformed.

Our joint ambition

By working in partnership, the construction industry and Government jointly aspire to achieve by 2025:

1. A 33% reduction in both the initial cost of construction and the whole life cost of assets¹
2. A 50% reduction in the overall time from inception to completion for new build and refurbished assets²
3. A 50% reduction in greenhouse gas emissions in the built environment³
4. A 50% reduction in the trade gap between total exports and total imports for construction products and materials⁴

These are long-term ambitions shared by industry and Government jointly. The Construction Leadership Council will develop an action plan to achieve these ambitions between now and 2025.

1 Based on 2009/2010 benchmarks in line with the Government Construction Strategy.

2 Based on the industry's performance in 2013.

3 Versus a 1990 baseline. This is set out in the Green Construction Board's Low Carbon Routemap for the Built Environment.

4 The UK imports £12 billion of construction products annually and exports £6 billion. ONS monthly statistics of building materials and components: February 2013.

Our joint commitments

1. Build the UK's competitive advantage in smart construction and digital design through the Digital Built Britain agenda.
2. Develop market and technology based plans to secure the jobs and growth opportunities from driving carbon out of the built environment, led by the Green Construction Board.
3. Identify global trade opportunities for UK professional services, contracting and product manufacturing, develop partnerships and promote UK construction through the GREAT brand.
4. Improve the image of the industry by inspiring young people and through a co-ordinated approach to health and safety and improving performance in the domestic repair and maintenance market.
5. Engage with bodies across the industry to ensure that capability and capacity issues in construction are addressed in a strategic manner.
6. Develop and refine the pipeline of future work opportunities and make it more useable for all construction businesses.
7. Drive procurement efficiency and explore options for further efficiency gains in the procurement process, led by the Government Construction Board and the IUK Client Group.
8. Create conditions for construction supply chains to thrive by addressing access to finance and payment practices.
9. Work with academic and research communities to bring forward more research, development and demonstration to the wider industry and work to remove barriers to innovation.
10. Lead the transformation of the industry through the new Construction Leadership Council, with actions owned and delivered by industry bodies.

The following organisations have been closely involved in the development of this strategy, support the vision and ambition and will be responsible for delivering our joint commitments:



Chapter 1: Strategic Context

The CBI has taken a long term view of construction markets and what will shape them over the next decade.⁵ This is based on the National Infrastructure Plan and includes other key markets around new housing and the commercial sector. This clearly shows construction at the heart of the economy, supporting growth in other key market sectors.



5 Building Britain's Future (2013), http://www.cbi.org.uk/media/2118883/building_britains_future.pdf.

The industry is typically a major contributor to UK growth. Key features of the industry's nature and the challenges it faces are set out in the following SWOT analysis:

STRENGTHS	WEAKNESSES
<p>KEY SECTOR TO UK ECONOMY wider construction accounts for nearly 7% of UK's value added; of which: construction related products and services account for about 1% each and contracting accounts for about 4.7%.⁵</p> <p>Some 3 million jobs are based in construction; 10% of total UK's employment.⁶</p> <p>WIDER ECONOMIC SIGNIFICANCE construction sector builds and maintains workplaces to enable businesses to flourish; the economic infrastructure underpinning how economy. functions; provides schools, hospitals and homes.</p> <p>LARGE SUPPLY CHAIN accounting for around £124 billion of intermediate consumption,⁷ almost all sourced within the UK. In other words, construction spend tends to stay within UK supply chain.</p> <p>WORLD CLASS DESIGN SKILLS particularly in architectural design, civil engineering and sustainable construction with BREEAM as an internationally recognised standard.</p> <p>LOW ENTRY COST AND LOW CAPITAL required enables small firms to access the market and promotes competition in the sector.</p>	<p>SECTOR INTEGRATION vertical integration in the supply chain is low and there is high reliance on sub-contracting.</p> <p>Lack of integration often leads to fracture between design and construction management and a fracture between the management of construction and its execution leading to lost opportunities to innovate.</p> <p>LOW LEVELS OF INNOVATION investment in R&D and intangible assets such as new processes (particularly in contracting sub-sector) is low due to uncertain demand for new goods and limited collaboration.</p> <p>LACK OF COLLABORATION AND LIMITED KNOWLEDGE SHARING learning points from projects are often team-based and lost when the team breaks up and project ends. Low technology transfer.</p> <p>HIGH CONSTRUCTION COSTS in comparison to foreign competitors driven by inefficient procurement and processes rather than material input costs but there are significant opportunities to reduce them through greater use of technology, new materials and innovation.</p>

6 ONS Annual Business Survey, 2011.

7 BIS analysis of ONS Labour Force Survey micro-data, January-March 2013.

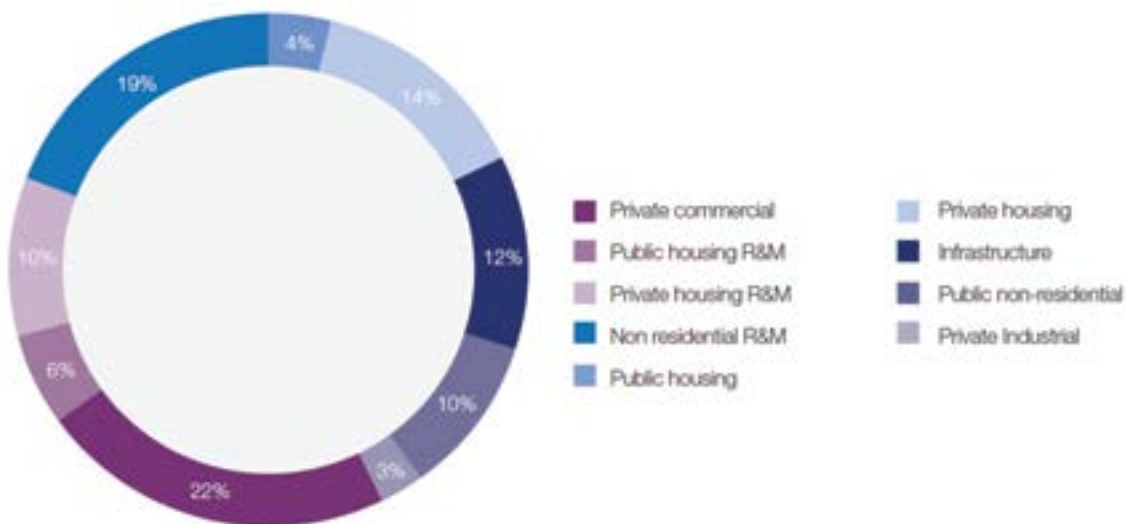
8 BIS analysis of ONS supply use tables. Construction contracting data only.

OPPORTUNITIES	THREATS
<p>LARGE GROWTH OPPORTUNITIES IN EMERGING MARKETS with expected annual growth of 6% in construction output until 2021⁸ which creates opportunities for UK companies to expand their exports, both in products and high value services.</p> <p>LOW CARBON CONSTRUCTION substantial opportunities both in domestic and foreign markets due to environmental requirements and greater societal demand for greener products. Global green and sustainable building industry is forecasted to grow at an annual rate of 22.8% until 2017.</p> <p>WIDE IMPLEMENTATION OF BIM TECHNOLOGIES both domestically and abroad which could improve sector productivity and lower costs due to improved information flow and greater collaboration.</p> <p>COST REDUCTION industry is capable of delivering its product at substantially lower cost e.g. through greater efficiency and greater technology and information sharing such as Building Information Modelling (BIM). UK government is committed to reduce the costs of public sector construction by 15-20% by the end of 2014/2015.</p>	<p>ACCESS TO FINANCE SMEs in construction face more difficulties in accessing bank finance than other sectors. Late payment is a problem. Companies often unaware of support available to them.</p> <p>SKILLS substantial fall in apprenticeship completions in construction related sectors relative to other sectors. Low training among self-employed and skills shortages among trade and professional occupations inhibiting technology deployment and innovation.</p> <p>LACK OF CAREER ATTRACTION due to perceived low image, lack of gender diversity, low pay and job security due to cyclical nature of demand for construction. This is especially evident in construction contracting and materials.</p> <p>INTERNATIONAL TRADE UK has not yet specialised in construction exports despite its capability in construction technology and services and relatively higher proportion of construction-related patents comparing to its competitors. UK remains a net importer of construction products and materials.</p> <p>HIGH DEGREE OF FRAGMENTATION relative to other sectors and countries which impacts on levels of collaboration, innovation and ability to access foreign markets</p>

Scope of the Industry

The construction industry is diverse and its markets broad and varied. Starting with mining, quarrying and forestry, the industry runs all the way from design, product manufacture and construction through to the maintenance of our buildings and infrastructure assets and, at times, into their operation and disposal. The supply chain can be hugely complex. Firms in the industry range from world renowned design practices working on some of the most prestigious projects across the globe, to the plumber who turns up on Wednesday afternoon to fix your dripping tap.

What unites the industry is the fact that it touches all our working, social and home lives every day in a very tangible and visible way. It directly and immediately impacts on our quality of life. Decisions about what we build today, how and with what it is built, and how it can be maintained, have very long term consequences.



Source: ONS Output in the construction industry statistics, May 2013 release

Earlier reform initiatives

The construction industry has made important improvements as a result of the Latham¹⁰ and Egan¹¹ initiatives and the Wolstenholme¹² report. Government too has made real improvements in how it carries out its role as a significant customer of the industry. These changes generally have been incremental and less than comprehensive. We will not achieve our vision or meet our ambition for 2025 without radical, transformational change.

10 Constructing the Team 1994

11 Rethinking Construction 1998, Rethinking Construction – Accelerating Change 2002

12 Never Waste a Good Crisis 2009

The UK construction industry today

Construction contributes £90 billion gross value added to the UK economy (nearly 7% of the total), comprises over 280,000 businesses and accounts for 3 million jobs.¹³ This is equivalent to about 10% of total UK employment.¹⁴

Construction has a wide significance to the economy. It creates, builds, manufactures and maintains the workplaces to enable our businesses to flourish, the economic infrastructure which underpins how the economy functions, and our schools, hospitals, and homes. The whole life value of construction is critical.

But construction has been badly hit by the economic downturn.

Key markets for construction have declined – output in the private housing market has fallen by 40% and private commercial building decreased by over 30% since 2007 – reflecting the general weakness in the economy over this period.¹⁵

Infrastructure and public non-residential activity continued to grow after 2007, but the public non-residential sector has continued to fall since the second half of 2010.¹⁶

Existing support for construction markets

Within the tight fiscal constraints of balancing the nation's books, Government has taken a number of steps to facilitate investment in construction.

Planning

The 2011 Localism Act contained a number of measures simplifying the planning system, incentivising growth and removing top down targets:

- abolishing Regional Strategies;
- incentivising development – the Act allowed a meaningful proportion of Community Infrastructure Levy revenues to be passed directly to neighbourhoods; and
- Neighbourhood Plans: Communities and businesses were given the right to develop pro-growth neighbourhood plans.

13 ONS Annual Business Survey (ABS), 2011 provisional results. The ABS is preferred as it is the only source with sufficient detail to allow for the calculation of GVA for the wider construction sector, and for comparison of wider construction with other industries. It should be noted that the ONS National Accounts (2011) gives GVA for construction contracting alone as £90 billion because it makes adjustment for output unrecorded by the ABS; a figure for wider construction cannot be calculated from National Accounts, but it is likely to be higher.

14 BIS analysis of Labour Force Survey micro-data, non seasonally-adjusted for wider construction sector as above.

15 ONS Annual Business Survey, February 2013 release.

16 Ibid.

The National Planning Policy Framework published in March 2012 radically simplified and rationalised national policy, and reduced 1,300 pages down to only 50 with a presumption in favour of sustainable development.

Planning application approval rates have been on an upward trend for some time and are now 87% – a ten-year high.

In addition to this there has been an ongoing programme of reforms to the Planning system. Deregulatory measures include:

- streamlining the planning application process;
- requiring Enterprise Zones to cut planning requirements by using Local Development Orders;
- introducing a raft of new permitted development rights to make it easier for families to improve their homes and help to kick-start economic recovery by supporting small traders;
- allowing offices to convert to homes, new free schools to open without delay, broadband to be rolled out swiftly, and agricultural buildings to convert to business uses to promote the rural economy – and looking for further opportunities to allow for change to residential use; and
- making planning appeals faster and ensuring authorities who are refusing planning applications which are consistent with national and local policy face cost awards at appeal.

The Growth and Infrastructure Act delivered a further boost to the planning system, with four significant planning changes:

- allowing developers to submit major planning applications to the Planning Inspectorate where an authority is poor performing;
- getting stalled sites moving with new appeal rights to allow for the renegotiation of affordable housing requirements;
- removing the ability to block development through Town and Village Green designation; and
- opening up the major infrastructure regime to deal with a wider range of economically significant developments.

Further measures are in the pipeline during 2013:

- decide on proposals to streamline the planning application process;
- publish the new guidance suite following Lord Taylor's recommendations. Over 7,000 pages of guidance is being significantly reduced, updated and consolidated to make it simpler and easier to use.

Infrastructure



Credit: Steve Allen/Stockbyte/Getty Images

The Government is also supporting infrastructure development and has:

- announced a range of measures at Budget 2013, including increasing its capital spending plans by £3 billion per annum from 2015-16. This will mean £18 billion additional investment by 2020;
- supported the £9.4 billion High Level Output Specification (HLOS) – the largest programme of investment in the railways since Victorian times;
- provided UK Guarantees for major infrastructure projects such as the Northern Line Extension to Battersea which will support the redevelopment of an area of central London;
- invested £5.5 billion as part of a capital package unveiled at Autumn Statement 2012 to boost crucial investment in roads, schools and housing;
- progressed work on the Top 40 priority investments, including completing a programme of eight Highways Agency projects and the King's Cross Station improvements later this year;
- supported the £14 billion Crossrail project, which has completed over 10 kilometres of tunnelling, as part of one of the most significant infrastructure projects ever undertaken in the UK;

- improved the road network, through a series of significant expansions and initiatives to reduce the time it takes to get roads worth over £3 billion built;
- put in place reforms to the electricity market (Electricity Market Reform) that will attract the £110 billion investment we need in this decade alone to replace our ageing energy infrastructure with a more diverse low-carbon energy mix; and
- launched together with industry the Nuclear and Oil and Gas Sector Strategies and will be launching the Offshore Wind Sector Strategy which will detail the work Government and industry are doing to unlock growth in these areas of infrastructure.

The economic regulators will develop a coordinated and streamlined approach to charging and conditions on new infrastructure where it crosses existing transport and utility networks, simplifying the UK's infrastructure landscape for investors.

Housing



Credit: Barratt Group

Unlocking Development

Government is investing a total of £1.8 billion, through the Growing Places Fund, the Local Infrastructure Fund and Get Britain Building, to provide infrastructure and development finance to stimulate economic development and get sites moving and homes built. To date the large sites programme has invested £76.7 million, to deliver 42,000 new homes. Surplus public land suitable for over 100,000 new homes has been identified and its release for development is being accelerated.

Investment in the Rented Sector

Government is supporting the market for homes purpose built for private rent with the £1 billion Build to Rent Fund which provides recoverable finance supporting the delivery of new private rented homes. In April 2013 a shortlist of 45 projects for the first round of the scheme was announced which are expected to deliver up to 10,000 new homes. The Build to Rent fund is providing the platform for large-scale institutional investment in this sector, which will be further supported by a share of our Housing Guarantees schemes underwriting up to £10 billion of private debt.

With a total investment, including from the private sector, of £19.5 billion, Government's main Affordable Homes Programme remains on track to deliver 170,000 new affordable homes for rent and ownership by March 2015. Up to a further 30,000 affordable homes will start on site by the same date, also supported by the Housing Guarantees scheme, as well as grant of up to £450 million.

Supporting ownership; unlocking demand

At Budget 2013 a new Help-to-Buy: Equity Loan scheme was launched – a £3.5 billion scheme to help homebuyers move up the housing ladder. The Home Builders Federation has reported over 4,000 reservations being placed by purchasers through the scheme. From January 2014 this will be complemented by the Help-to-Buy: Mortgage Guarantee scheme which will offer up to £12 billion of Government-backed guarantees to lenders so that they can offer mortgages to those with smaller deposits.

The Bank of England is crediting the Government's £50 billion Funding for Lending Scheme for an increase in mortgage availability and for driving down the cost of loans for homeowners.

Latest official figures show that net housing supply increased by 11% in 2011/12.

Notwithstanding these measures, there is more to be done. It is inevitable that implementation of valuable reform takes time. That is why the construction industry and Government have worked together to develop this strategy and will jointly deliver it.

Chapter 2: Strategic Priorities

For construction to be the heart of our future low carbon, resource efficient, modern and globally competitive economy we need to address three strategic priorities which underpin sustained growth across the economy and an improved quality of life for citizens. These are:

1. Smart construction and digital design.
2. Low carbon and sustainable construction.
3. Improved trade performance.

Success in these priority areas depends on having a skilled, motivated and diverse workforce.

1. Smart construction and digital design

The challenge and opportunity

We are moving quickly towards a digital economy, with profound implications for our built environment. We must act now to ensure UK construction is at the vanguard of smart construction and digital design.

Better design will play a key role in enabling the industry to meet its ambitions. Digital techniques are central to this and, indeed, the transition to a digital economy will drive fundamental changes in our everyday lives. These changes will be dramatic, with global data traffic set to quadruple and two thirds of all data moving on to cloud computing systems by 2016.¹⁷ Through the Internet of Things, the number of physical objects (such as buildings and infrastructure) that are able to interact with humans and with each other will grow to 44 billion by 2020.¹⁸

These developments have already made a huge impact in other industries. In the coming years they will drive a step change in how we build and how our built environment operates. Crucial to this is the emergence of new technologies in sensors and data management that will become embedded in our assets, enabling performance to be constantly monitored and thereby driving substantial efficiency gains in facilities and asset management.

Adopting these innovative technologies will provide asset owners with a full understanding of the performance of their assets, both during construction and throughout their design life. This will result in smarter designs, requiring less material, reducing carbon and needing less labour for construction, whilst still ensuring full resilience of the assets.

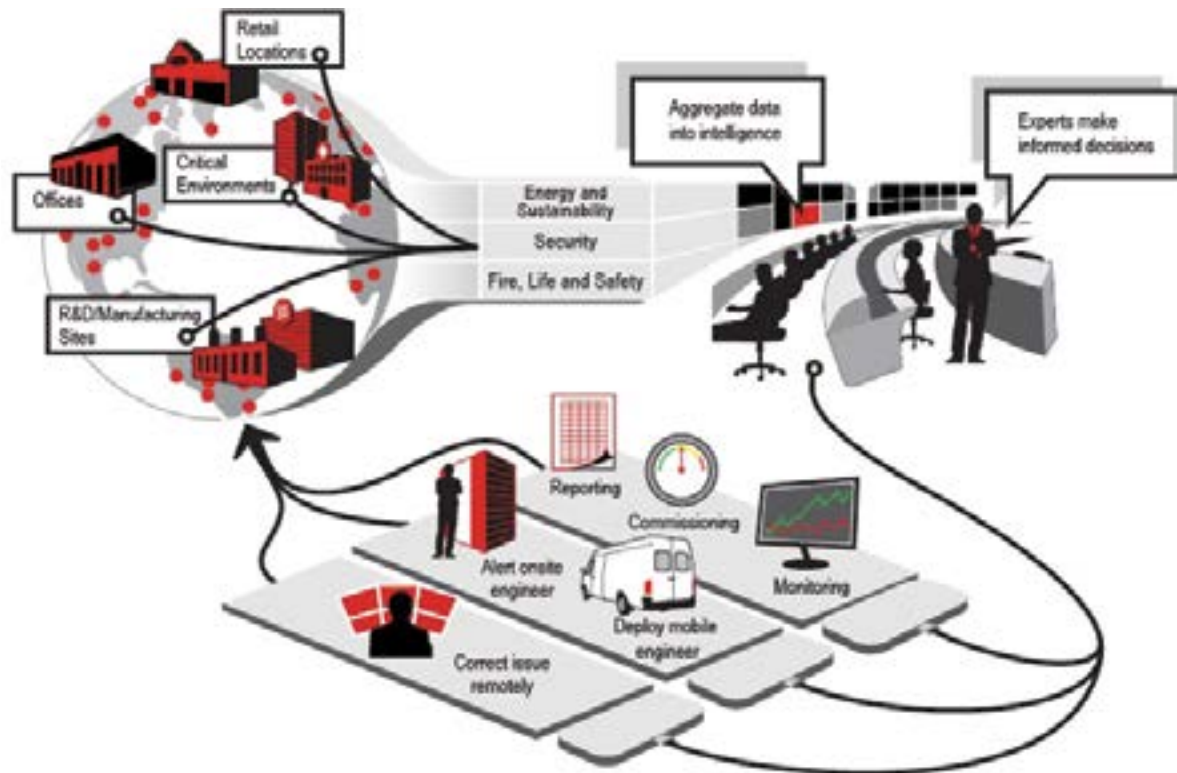
Applying new technology will be a key part of the burgeoning Smart City agenda, where the global market for integrated city systems is set to be worth £200 billion per annum by 2030.¹⁹

The construction industry needs to position itself at the forefront of smart construction and digital design by driving forward the Digital Built Britain agenda. If it doesn't, the UK will be left behind. If it does, UK supply chains will secure a substantial share of this rapidly growing market both at home and overseas, where UK expertise in advanced engineering and design leaves our businesses well placed to capitalise on significant export potential.

17 Against a 2011 baseline – CISCO http://www.cisco.com/cisco/web/UK/tomorrow-starts-here/files/global_index_whitepages.pdf

18 Analysys Mason report: <http://www.telegraph.co.uk/technology/internet/8097488/16bn-devices-online-by-2020-says-report.html>

19 Technology Strategy Board estimate



Availability of huge volumes of live data will drive vast improvements in the operational efficiency of the built environment, with remote monitoring of assets allowing companies to upgrade and maintain buildings and infrastructure far more effectively.

Credit: Jones Lang LaSalle

Industry and Government have made a good start through their joint commitment to the Building Information Modelling programme. But the challenge of the digital economy goes well beyond this, and the potential prize for UK construction is vastly greater.

The commitment

Industry and Government will fully commit to building the UK's competitive advantage in smart construction and digital design by supporting the launch of Digital Built Britain.

2. Low carbon and sustainable construction

The challenge and opportunity

The transition to a low carbon economy presents the UK construction industry with terrific opportunities for growth. There are also opportunities through greater resource efficiency and from adaptation of our built environment to deal with climate change. These opportunities reach into every part of the construction supply chain and there is significant potential to exploit huge export markets.

The potential business opportunities from low carbon construction are huge and they will drive future markets to 2025 and well beyond. The global green and sustainable building industry is forecast to grow at an annual rate of 22.8% between now and 2017 as a result of increasing low carbon regulatory requirements and greater social demand for greener products.²⁰

In recognition of this tremendous opportunity, the Green Construction Board has developed a high level route map which identifies the work required for the built environment to meet the 80% carbon reduction target by 2050.²¹ In doing this, the route map illustrates those built environment sectors which are the most energy intensive and therefore those markets with the greatest potential.

The biggest area of potential opportunity is our existing housing stock which accounts for over half of the greenhouse gas emissions from the built environment. The Government's flagship policy in this area is the Green Deal,²² which helps homes and businesses to pay for some of the cost of energy efficiency improvements through savings on their fuel bills. It will let homes and businesses pay for energy efficiency improvements, like insulation or a new heating system, through savings on their fuel bills. A typical three bed semi could save around £270 a year with solid wall insulation.

On top of robust standards and consumer protection ensured by the Green Deal, around £540 million of additional support will be available each year under the Energy Companies Obligation (ECO) for households on a low income, or in low income areas, to help further with the costs of making their homes easier to warm. Customers who act now could be rewarded with payments of over £1000 through the Green Deal Cashback scheme. Anyone authorised to operate under the Green Deal framework must use the Green Deal Quality mark when promoting or carrying out work under the Green Deal.

The Green Deal will transform the energy efficiency market and will lever in billions of pounds of private investment to improve the UK's millions of draughty homes. It will

20 IbisWorld Report: *Top 10 fastest growing industries*, April 2012. The global green and sustainable building constructing is estimated to grow from about \$103 billion in 2012 to about \$288 billion in 2017.

21 <http://www.greenconstructionboard.org/index.php/resources/routemap>

22 <https://www.gov.uk/green-deal-energy-saving-measures/how-the-green-deal-works>

empower small and medium sized businesses to enter, innovate and grow, and is expected to support up to 60,000 jobs in the insulation sector alone by 2015 (up from 26,000 in 2011). 18,000 assessments were carried out in the first three months.

There are also many opportunities for the construction industry in the non-domestic sector. Most of these exist in the repair, maintenance and improvement market and the analysis suggests that they will be significant.²³ Further, there are key opportunities for certain technologies, particularly in lighting and heating. In July the Government will launch a consultation on implementing new energy efficiency audits for all large enterprises. This new policy will build on existing mechanisms that encourage energy efficiency in buildings such as the CRC Energy Efficiency Scheme²⁴ and Climate Change Agreements.²⁵



Biogas produced at the Anglian Water biosolids treatment facility in King's Lynn is used to generate heat and power for the entire wastewater treatment plant with the surplus exported to the national grid.

Credit: Mott MacDonald

In infrastructure, the construction industry has the most influence over the capital carbon impact of what it produces. There are important steps to be taken here and the industry needs a plan which can sit alongside the Infrastructure UK Cost Review. In this area, less capital carbon can equate directly to less capital cost.

Together we can play a big role in promoting the benefits of investment in energy efficiency and low embodied carbon solutions and in developing products and services to sell into these diverse markets. New evidence is emerging around the

23 See for example a recent study by McGraw Hill Construction: World Green Building Trends (2013).

24 <https://www.gov.uk/crc-energy-efficiency-scheme>

25 <https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2/supporting-pages/climate-change-agreements-ccas>

economic benefits for consumers that adopt energy efficiency measures in their homes. Recent DECC research indicates that energy saving improvements to residential properties can increase its value by 14% on average – and up to 38% in some parts of England.²⁶

Developing greater clarity and certainty around the sustainable and low carbon construction opportunities which are emerging is essential to give businesses and consumers the confidence to invest in the potential of these new markets.

Similarly, we can do much to promote the benefits of water efficiency, improving air quality, better management of noise and bio-diversity. These issues play strongly in terms of the industry's image with the public at large and its attraction to new entrants.



This restored CEMEX quarry at Rugeley was the first winner of the Natural England Biodiversity Award.

Credit: Mineral Products Association

The commitment

Industry and Government will develop market and technology based plans to secure the jobs and growth opportunities from driving carbon out of the built environment, led by the Green Construction Board.

Industry and Government strongly support the continuation of the Green Construction Board.

26 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207196/20130613_-_Hedonic_Pricing_study_-_DECC_template__2_.pdf

3. Growth through improved trade performance

The challenge and opportunity

The global construction market is expected to grow at an annual rate of 4.3% until 2025 with substantial growth opportunities in emerging markets.²⁶ Transforming the UK construction industry therefore opens significant opportunities for global trade.

It is a fact that our construction industry is more fragmented than in competing countries such as the US and Germany. There is one UK firm in the top ten European contractors and housebuilders, and only two in the top twenty.

It is equally a fact that UK-based businesses have a global reputation for architecture, design and engineering, competitive whole life costs and sustainable construction solutions. Our strengths in these areas are aided by significant recent advances in exploiting digital design techniques, whilst our manufacturers are renowned for producing some of the most innovative products in the world. Finally, we have a very good reputation for our collaborative forms of contract. This is a terrifically strong base from which to start.

Currently, however, there is a mixed picture. Exports in construction contracting have been growing steadily to give a net trade surplus of £590 million in 2011.²⁸ We are similarly strong in architecture and surveying services, where we have a net trade surplus of about £530 million.²⁹ In construction products the picture is less positive, with almost £6 billion of exports vastly outweighed by the £12 billion we import annually.³⁰ Overall, construction accounts for less than 2% of all UK exports.³¹

One reason for this is that very few of our prime companies lead on overseas projects. Taking steps to enable UK firms to secure the lead role more often will enable us to make the most of opportunities in the high growth global construction markets. From a lead role, there would be considerable potential to bring in UK-based supply chains, thereby multiplying the potential dividend to the UK. UKTI's High Value Opportunities Programme has a key role to play in bringing UK based companies together for overseas project work. Alongside this, we have a strong ambition to close the trade gap in construction products and to make the UK a strong candidate for inward investment in this sector. Clearly this is part of a much wider macro economic

27 Global Construction Perspectives and Oxford Economics (2013) Global Construction 2025. Construction output is estimated to grow from about \$8.7 trillion in 2012 to \$15 trillion in 2025. www.globalconstruction2025.com

28 ONS Pink Book 2012

29 Ibid.

30 ONS Monthly statistics of building materials and components: February 2013

31 Based on exports in construction contracting, building materials and components, architecture and surveying only.

picture, where Government is taking steps to make the UK more attractive for global investment. This strategy complements that work, whilst placing proper focus on the challenges facing construction manufacturers.



Mott MacDonald provided mechanical and electrical design services and project managed all building services works for Singapore's new integrated cultural, retail and entertainment hub – the Star Performing Arts Centre.

Credit: Mott MacDonald

The commitment

Industry and Government will work with UK Trade and Investment to identify global trade opportunities for UK professional services, contracting and product manufacturing, develop partnerships and promote UK construction through the GREAT brand. UKTI will fund a post in the Construction Products Association to promote exports – a trial for possible funding of similar posts in other trade associations.

Chapter 3: Drivers of Change

To deliver these strategic priorities fundamental changes are required in the way the construction industry operates. Responsibility percolates throughout the supply chain and Government has an important role to play.

Key drivers of change to deliver the vision of an industry with a reputation for world leading efficiency and for attracting and retaining the people we need are:

1. Improved image of the industry.
2. Increased capability in the workforce.
3. A clear view of future work opportunities.
4. Improvement in client capability and procurement.
5. A strong and resilient supply chain.
6. Effective research and innovation.

1. The image of the industry

The challenge and opportunity

The construction industry must attract the right people if it is to realise lasting transformation. To achieve this, fundamental change is required in how the construction industry is perceived by the general public. We have a great opportunity to convey excitement about the opportunities in the built environment, for example, in its potential to address climate change concerns.

People are construction's biggest asset and any strategy seeking to transform the industry must start by setting the right foundations for a positive flow of new talent into the industry. We will not be able to properly address future skills and capability demands without transforming the diversity of the industry and we will not change diversity significantly without addressing the retention of new recruits. Addressing retention is in turn dependent on how we deal with workplace culture.



Created in 1997 by the industry, the Considerate Constructors Scheme operates a voluntary Code of Considerate Practice, to which participating construction sites and companies register. The Scheme encourages best practice beyond statutory requirements. In its 16 years of operation the Scheme has registered more than 60,000 construction sites and over 2000 construction companies. In 2012 the Scheme made its 100,000th site visit.

Credit: Considerate Constructors Scheme

In common with other manufacturing and trade professions in the UK, major parts of the construction industry suffer from a poor image amongst the general public. This has a detrimental effect on companies' abilities to recruit and retain the best talent, with analysis showing that construction companies have more hard to fill vacancies than the economy average.³² There are four areas where action is needed to reform the image of the industry.

Engaging young people and society at large

Engagement with the public must begin at a young age (from 11–12, before GCSE curriculum choices are made) and then be consistently applied right through to further and higher education level. There is a pressing need to properly inform young people, and their influencers (parents and teachers), about the rewards offered by a career in construction.³³

This strategy marks a real opportunity to convey a sense of excitement about opportunities in the built environment sector, from the potential to address climate change to pursuing innovation and technological advance, to creating a world class built environment at home and abroad.

A number of existing schemes already do good work in this area. These include:

- Open Doors, an industry-led scheme that gives access to major construction sites across the country;
- CITB's Positive Image campaign, which reaches 400,000 people each year;
- Design, Engineer, Construct, a programme delivering a project-based curriculum that allows young people to discover architecture and engineering;
- STEMNET, which enables schools and businesses to increase young people's engagement with science, technology, engineering, and mathematics;
- See Inside Manufacturing, organised by Government to give schoolchildren a behind the scenes look at manufacturing workplaces;
- a Professional Career in the Built Environment (see box); and
- the Big Bang Schools Fair, organised by Engineering UK.

³² UK Employer Skills Survey 2011 (UKCES, 2012).

³³ According to a study by CITB (March 2013) on construction industry image the overall appeal of construction industry as a career option is low among young people. On average 14-19 year olds scored construction industry at 4.2 on a 10 point scale (1 being the lowest and 10 the highest). Career advisers ranked industry at 5.6 and parents at 6.2 as a career option for young people.

The Construction Industry Council, working in partnership with the professional institutions, is committed to fostering understanding of the sector amongst young people and their influencers. “A Professional Career in the Built Environment” is a pan-professional careers pack supported by the professional bodies and employers to engage 11-18 years olds.

Since its launch, the pack has been distributed to 4,000 schools, colleges and careers guidance professionals, providing impartial and wide ranging advice on many of the study and career opportunities available in sector. It provides a one-stop gateway into the diverse professional disciplines across the built environment. The Construction Youth Trust has also been using the CIC pack as part of their “Budding Brunels School Engagement Programme”, a national project working with over 50 schools across the UK, which has involved a mix of courses, outreach events and work placements.

This shows the wealth of activity in this area, but it is important that this is supported by the industry and coordinated so that it is delivered as effectively as possible.

Safety and Occupational Health

The UK construction industry has united in its efforts to improve site safety in the last decade. This has brought dramatic improvements across large parts of the industry, with fatal injuries reduced from 113 in 2000/01 to 50 in 2010/11. This marks good progress, but clearly there is more to be done. We must build on the achievements of the highest performing projects so that zero harm becomes the norm across the industry. 70% of fatal accidents now occur in the SME sector. We must address standards on small projects properly so that they match those achieved on larger projects.

The industry must also bring the same focus to health as it has to safety, to recognise the fact that three times as many working days are currently being lost to ill-health as to occupational injury. In particular, occupational cancers, caused by asbestos and dust containing silica, are all too common in the industry.

By addressing these issues, UK construction will build on its existing world class reputation in health and safety. As standards rise in other countries, particularly emerging economies, this will make UK firms even more competitive in the global construction market.

Our goal is for the UK construction industry to operate under safe and healthy conditions at least comparable to other sectors of the economy.

Diversity

Only 13.5% of people working in the industry are women and only 2% are from ethnic minority groups.³⁴ The workforce needs to be much more diverse if it is to meet the

34 CIC and Constructonskills report (Graft and Johnson 2009)

challenges of the future. This requires improvements to communications with stakeholders, in recruitment, and in the retention of employees. To retain employees in the industry will require improvements in ways of working, for example in flexibility, and handling of workplace stress, in order to create working environments which are more inclusive. Such changes will also lead to greater effectiveness of the whole workforce and hence will benefit both employees and employers.

Our goal is to create an industry with a diverse workforce, representative of society as a whole.

Domestic repair and maintenance market

One of the public's main points of contact with the construction industry is through the domestic improvements sector, which encompasses some 150,000 businesses and accounts for £27 billion spend per annum.³⁵ Customer experiences here – good or bad – have a huge bearing on their image of the wider industry.

All too often, however, people are unhappy with the service they receive. Consumer Direct received 70,000 complaints relating to domestic contractors in the year to March 2011³⁶ – more than any other sector. This is thought to cost the UK economy £1.5 billion each year.³⁷ In response to this issue, Government commissioned a study of accreditation schemes for domestic tradesmen in other countries, which found that there was no one size fits all approach. It did, however, identify a number of desirable features common to all effective schemes.

One existing scheme in the UK that displays many of these features is TrustMark, which is licensed by the Department for Business, Innovation and Skills to operate to Government endorsed standards. Of the estimated two million jobs carried out in 2012 by Trustmark registered firms, TrustMark was notified of a problem in one in every 9,929 jobs undertaken – which is a rate of just 0.01%. This strategy commits to expanding the benefits of TrustMark such that it includes a far greater proportion of the industry.

The commitment

Industry and Government will work together to improve the image of the industry amongst the general public by inspiring young people including through a coordinated approach to health and safety and improving performance in the domestic repair and maintenance market.

35 TNS-BMRB (2011) Home Repairs and Improvements: a research report

36 OFT

37 Innovation in Construction Services (DIUS 2008)

2. Capability in the workforce

The challenge and opportunity

The industry faces a pressing need for a capable workforce that can deliver transformational change in the next decade. As the wider economy emerges from the recession, construction firms must be able to recruit and retain skilled, hard-working people in sufficient numbers to meet the increasing demand for construction. We must also be able to recruit and develop people with new types of skills.

In some areas, like sustainable and low carbon construction, the anticipated skills need is already well recognised by the industry, for example through the Green Skills Alliance. To establish the full extent of this, the Green Construction Board is carrying out research to map the current skills landscape in green construction and identify barriers that may prevent the industry from meeting demand through to 2025.

Similarly, if the construction industry is to fully embrace the digital economy, it will need to mobilise the country's brightest talent in order to effectively apply technology in our built environment. Digital design techniques are already creating an imperative for this, but the next decade will demand multi-disciplinary skills that enable integration right through the supply chain.

The Current Picture

Despite high redundancy and low vacancy rates, the industry continues to face significant skills shortages, with almost one fifth of all vacancies classified as hard to fill.³⁸ These shortages are evident mainly in skilled trades and professional occupations.³⁹ This leads to inefficiency in the way the industry operates and reduces its overall competitiveness.

The current system is confusing for many. Multiple entry points, a plethora of qualifications, a wide variety in the quality of training provision and complicated funding options can overwhelm and confuse businesses and individuals. Tough economic conditions have led to a substantial fall in apprenticeship completions in construction related industries; from about 22,000 in 2008/09 to about 16,000 in 2011/12.⁴⁰ This was partly caused by uncertainty in the market, which led employers to reduce the number of workers on the books and use a more flexible self-employed workforce. In contrast, other sectors have been able to maintain or even increase

38 UK Employer Skills Survey (UKCES, 2011).

39 Some 28% of employers reported skills shortages in in trades occupations and 45% in professional and related occupations (UKCES (2012))

40 ILR, BIS

apprenticeship numbers over the same period.⁴¹ Recent research also shows that some 86% of employers in the sector said that they would be unlikely to start an apprentice in the next 12 months.⁴²

Training and development activity in the sector is low relative to other sectors, which is likely to be driven by the high number of self employed who often face an ‘earn or learn’ dilemma. Only 17% of sole traders had funded or arranged training compared to 41% of employers in wider construction.⁴³ However, the evidence on qualifications is positive, with more people in the industry being better qualified and the proportion of employees with a degree or equivalent almost doubling over the last 10 years.⁴⁴



Matthew McAllastair is a plastering apprentice employed by Frank Haslam Milan (Keepmoat Group) and trained by CITB.

Credit: CITB

41 Apprenticeship achievements for all UK sectors increased from some 143,000 in 2008/09 to about 258,000 in 2011/12 (ILR, BIS data).

42 The Construction Industry Training Board (CITB)

43 ConstructionSkills

44 Between 2001 and 2012 the proportion of employees with level 4 qualification (degree or equivalent) in the construction contracting sector increased from about 12% to about 22% (ONS Labour Force Survey). Research has shown this increase reflects increases in managerial and supervisory training (ConstructionSkills, 2011).

Current Activity

The challenge facing the industry is to identify and target new recruits for skilled trades and the professions and address training and development needs on a more strategic basis. The transient nature of the workforce and the changing nature of the industry makes this issue particularly important.

There are a number of initiatives already in progress that provide a good base from which to build capacity in the workforce:

- CITB working with major contractors and their supply chains using the Employer Ownership of Skills pilot to address their skills needs;
- The Engineering and Physical Sciences Research Council's Centres for Doctoral Training are developing highly skilled leaders to design and manage our future infrastructure;
- Network Rail has forecast its demands and is investing in upskilling its supply chain to meet these requirements; and
- The Green Skills Alliance work to develop skills responses to support the introduction of the Green Deal. The competency requirements of the Green Deal and energy company obligation have driven a significant increase in training in the retro-fit sector.

Building a World Class Highways Supply Chain

The Building a World Class Highways' Supply Chain Project aims to take advantage of the visibility of the work ahead to identify the skills and capabilities that are required across the UK and when and where they will be needed. As a result, UK based contractors will be able to plan their workforce requirements in advance and meet the needs of both the Highways Agency and Local Authorities in a timely, effective and efficient manner.

The project is being delivered by a team representing all parts of the highways supply chain, including Institution of Civil Engineers, Association for Consultancy and Engineering, Civil Engineering Contractors Association, Construction Products Association, Chartered Institution of Highways and Transportation and ADEPT, and is being supported by a multi-disciplinary team from the University of Leeds.

Both public and private sector clients are increasingly considering apprenticeships as an effective route to improve local employment and meet their CSR requirements and are therefore including requirements relating to apprenticeships in their procurement contracts. Whilst such requirements may have sometimes been overly prescriptive and hence counterproductive, new National Apprenticeship Service-branded guidance is being drafted for Local Authorities and contractors to help ensure that

procurement policy benefits apprentices and the construction sector, and meets local skills needs.

The industry is coming together in a number of areas to establish pooled apprenticeship models for the sector, seeking to reduce the risk and financial burdens of employing and training apprentices. Shared Apprenticeship Schemes, based on the established Apprentice Training Agency Models, are being established following successful pilot schemes in Lancashire, Merseyside and Wales.

Specialist Apprenticeship Programme

In order to deliver the Green Deal, the External Wall Insulation sector identified the need for an apprenticeship programme. The Insulated Render and Cladding Association (INCA) in partnership with CITB, developed a funded Specialist Apprenticeship Programme, supported by manufacturers and installers, that can be delivered over a two year period and provided a route of entry into the industry for new entrants. This programme has now been developed into a Diploma for delivery through colleges and a specialist upskilling programme to deliver industry recognised qualifications to more experienced workers looking to develop their skills and meet the industry's low carbon commitments.

There is a need to ensure apprenticeships, once delivered, are fit for purpose and deliver the skilled workforce required by the sector. Government will publish its implementation plan for apprenticeships reform following the Richard Review in Autumn 2013. The Industry will seek to engage with this process, leading and owning the development of fit for purpose Apprenticeship standards, assessments and delivery.

To address the issues associated with career planning and to change training and development from a supplier led to a demand led model there is a need to encourage a more strategic approach to Continuing Professional Development (CPD) and Continuing Craft Development across the industry.

Working collectively within Construction Industry Council, the professional institutions have defined CPD as the systematic maintenance, improvement and broadening of knowledge and skill, and the development of personal qualities necessary for the execution of professional and technical duties throughout working lives. Without engaging in appropriate CPD the workforce cannot hope to maintain competence let alone develop the knowledge and skills needed to adapt to changing business and client needs and make use of the latest technology and materials.

The commitment

Industry and Government will work with skills bodies to ensure that capability and capacity issues in construction are addressed in a strategic manner.

This will include:

- *better determination of future capability needs*
- *clear routes of entry and clear career progression pathways*
- *a clear, standard means of recognising competence*
- *exploring the scope to make apprenticeships more flexible*
- *an industry review of the current skills and capability delivery mechanisms*
- *review of approaches to career planning, training and development with a commitment to rationalise.*

3. Future work opportunities

The challenge and opportunity

A better understanding of the shape of the future work prospects in all the key public and private sector markets provides individual businesses with a sounder basis on which to make the investment decisions to drive change in the industry.

The benefits of a clearer understanding of future work opportunities will be seen in:

- strategic resource and skills planning;
- collaborative programme and project planning;
- strategic business planning by industry, from tier 1 investment decisions to SME opportunities; and
- a more consolidated picture of the growth opportunities by region and sector.

Government has been publishing a pipeline of future work opportunities in infrastructure and construction since 2011.⁴⁵

The November 2012 edition of the construction pipeline included some 1200 projects and programmes, amounting to around £40 billion of investment. The December 2012 infrastructure pipeline includes over 550 projects and programmes worth over £310 billion. The pipeline will be updated following the 2013 Spending Review, enabling the industry to look forward to 2020 and beyond.

A clear view of future work opportunities is essential if the industry is to have the confidence to invest in change and transformation.

Tunnelling Industry Capability Analysis

The Tunnelling Capability Analysis built on the increased transparency of the Government future procurement pipelines to allow the industry to evaluate both the strengths, and the weaknesses, in skills, technologies and capabilities of the UK based tunnelling supply chain.

The demand profiling approach improved both industry's and Government's understanding of capacity issues to be addressed. It has encouraged both clients and industry to examine the flow of demand between projects, ensuring that investment in skills and capability is not lost, leading to more costly importing, or repeated skills interventions. The analysis has also identified further opportunities for savings as a consequence of economies of scale accrued when purchasing key plant and equipment.

45 http://www.hm-treasury.gov.uk/infrastructure_pipeline_data.htm

Barbour-ABI is now assisting Government in the development of the pipeline and in making it more accessible and easier for businesses to use. During 2013/14 the pipeline will move from a spreadsheet to a database/website which will be much easier to interrogate.

As well as improving accessibility, Government is also working to improve the quality of data on the pipeline. Government will extend this data to capture progress and performance, initially with the National Infrastructure Plan Top 40, but potentially with all major construction projects.

The new web portal will create a single access point to all the information Government has collected on its future work programme for construction. Bringing both the infrastructure and construction pipelines together in a single place will make it easier to interrogate the data. Users will be able to search in a number of ways including by sector, by region, and by value.

The higher education sector is a key contributor to a number of elements in the industrial strategy. Recognising this, and the infrastructure investment and development being made across the sector, Government and the higher education sector will work together to explore how the potential benefits of the Government construction pipeline can be realised for universities. This will also be pursued with Local Government.



While this work is helpful, the facility only extends to infrastructure and publicly funded construction. It does not, for instance, capture the significant demand which comes from the commercial sector – over 20% of the industry's output is in new build in that sector with further significant spend on repair maintenance and improvement.⁴⁶ More needs to be done to ensure that the work coming from the two-thirds of the market which is not public sector work is captured.⁴⁷

Uncertainty about the impact and timing of regulation is also a factor which can increase business risk and hence can inhibit both investment in innovation and resources.

The commitment

Industry and Government will work together to develop and refine the pipeline of future work opportunities and make it more useable for all construction businesses.

46 ONS Annual Business Survey, February 2013 release.

47 Ibid.

4. Client capability and procurement

The challenge and opportunity

The industry's customers (including Government) have an important role to play in transforming the construction industry. How projects come to market has a significant impact on the ability of the construction industry to provide innovative, whole life value for money solutions. Much waste in construction is driven through the approach to risk across the supply chain.

It tends to be the case that where organisations are repeat customers they approach the industry in a strategic way and secure a better outcome, particularly in the context of whole life value – and generally through the early engagement of key suppliers from across the supply chain. There are good examples of this in both the private sector and in the public sector, including using the OJEU process and securing a positive whole life value outcome.

However, the industry's customer base is even more fragmented than the industry itself. This means that much of the industry's workload comes to it on a one-off and piecemeal basis, where such a strategic approach can be challenging.

Government, as a significant customer of the industry, has sought to be more strategic in its approach to procurement through the implementation of the Government Construction Strategy.⁴⁸ It has similarly sought to use its role as the key sponsor of infrastructure development through the development of the National Infrastructure Plan and the Infrastructure Cost Review.⁴⁹ Both share the objective of achieving a 15-20% saving in the cost of construction over the lifetime of this Parliament by using collective buying power to promote reform and greater efficiency. Under the Government Construction Strategy, Government and the industry delivered £447 million of savings in the 2012/13 financial year. By 2015 it wants to be delivering savings of £1.2 billion. The Infrastructure UK Annual Report⁵⁰ (published in June 2013) demonstrates similar progress. Infrastructure UK's procurement routemap and Government's trial projects are central to delivering these savings.

48 <https://www.gov.uk/government/organisations/cabinet-office/series/government-construction>

49 <https://www.gov.uk/government/organisations/infrastructure-uk>

50 <https://www.gov.uk/government/publications/infrastructure-cost-review-annual-report-2012-to-2013>

Procurement Routemap

Infrastructure UK, in collaboration with industry and academics from the University of Leeds, have developed the “*Infrastructure Procurement Routemap: a guide to improving delivery capability*”. This provides, for the first time, a coherent approach to assessing and building an effective delivery environment, combining best practice tools and case study examples.

Trial Projects

The Government is currently trialling three new models of construction procurement: Two Stage Open Book, Cost Led Procurement; and Integrated Project Insurance. At the heart of these models are the principles of early contractor involvement, collaboration, and transparency. Early results from these trials, across Central and Local Government clients, will start to report on progress from Summer 2013. A robust Trial Projects Support Group, bringing together academic, industry and professional expertise, supports and challenges the Delivery Group, with the remit to objectively report on the outcomes being delivered from the trials. Our vision is that these trials will reap evidence based efficiencies in construction procurement, setting the standard for best practice and becoming business as usual for government procurements.

Government must continue to play a leadership role and demonstrate the value which a different approach to procurement can deliver for customers. It is for the industry to work with those one-off and occasional customers to promote the benefits that a more intelligent approach to the construction market can bring for customers.

Across the supply chain procurement processes can be bureaucratic and wasteful. Government is seeking to use its role to provide some leadership but it is clear that there is much more to do. The way that supply chains are engaged needs to be revolutionised. The responsibility here lies as much with the industry as it does with the customers.

The commitment

The construction industry and Government will drive procurement efficiency and explore options for further efficiency gains in the procurement process, led by the Government Construction Board and Infrastructure UK Client Group.

Industry and Government are strongly committed to delivering the Government Construction Strategy and the HM Treasury Infrastructure Cost Plan.

5. A strong and resilient supply chain

The challenge and opportunity

Construction has been hard hit by the economic downturn. The impact of this is being particularly felt among the many small businesses that operate across the sector. The industry is failing to create the conditions for its supply chains to thrive. This needs to change.

Construction supply chains are diverse and complex, containing many SMEs. They start with the briefing and design process and work all the way through to manufacturing and the primary extraction of minerals and resources. The biggest challenge for the industry is how to bring together these value adding activities consistently, and in a way which ensures the whole is more than the sum of the parts.

Analysis carried out for BIS by EC Harris and published alongside this strategy has shown that for a “typical” large building project (in the £20–£25 million range) the main contractor may be directly managing around 70 sub-contracts of which a large proportion are small – £50,000 or less. For a regional project, the subcontract size may be even smaller – with examples of projects where 70% of sub-contracts were below £10,000. This is clear evidence of the fragmentation of the industry and a real demonstration of the challenge of building integrated supply chains with a close focus on the end product and customer value.

Notwithstanding the structure of the industry, the study found plentiful evidence of effective use of frameworks, early contractor engagement on projects and high levels of cooperation amongst supply chain members on projects. The study also found evidence of the impact of the downturn on the supply chain, as well as the pressure that is being placed on well established relationships as a result of increased competition.

The emerging findings from the same study identified a number of crucial factors which determine successful delivery of a construction project. These include: equitable financial arrangements and certainty of payment; early contractor engagement and continuing involvement of the supply chain in design development; strong relations and collaboration with suppliers; and capability for effective site management including the ability to respond to change flexibly.

The research also identified opportunities for performance enhancement associated with procurement of a large number of small transactions; coordination of multiple trades – particularly at the later stages of project delivery and further improvements in collaboration, design and site management.

One key finding of the research is that the industry has a low awareness of the sources of waste and duplication that are embedded in current construction practice. This finding emphasises the fact that in order to deliver the targeted

improvements – the industrial strategy must address many aspects of construction delivery at all levels of the supply chain.

A further piece of analysis carried out for BIS by UCL has revealed that Tier 1 construction firms take much more trade credit from their suppliers as a proportion of their balance sheet than do firms elsewhere in the economy.⁵¹

The issues raised by this research into aspects of the construction supply chain go to the heart of the industry's business models and commercial culture. The reports focused on specific facets of the supply chain (contracting) but the implications go wider and are key issues for the construction industry and Government to address.



Credit: John McAslan & Partners and John Sturrock

Finance and Payment

The ability of construction companies to access the right type of finance is vital for them to operate and grow. BIS's own analysis shows that there is currently a significant problem with cash flow in the industry:

- construction companies are less likely to apply for bank finance than businesses in other sectors;⁵²
- if they do apply for an overdraft or loan, they are more likely to be turned down;⁵³

51 UCL (2013) Trade credit in the UK construction industry

52 In 2013-Q1 6% of construction contracting SMEs (and 8% of all SMEs) approached the bank looking for new or renewed overdraft or loan facilities, down from 12% in Q1 2012. (SME Finance Monitor Q1 2013).

53 The SME Finance Monitor Survey (Q1 2013) shows that construction contracting sector is less successful than other SMEs on average in applying for overdraft (59% compared to 71% overall) and loans (44% compared to 59% overall).

- construction companies are less aware of the support available to them than businesses in other sectors;⁵⁴ and
- late payment is more of an issue in construction than in other sectors.⁵⁵

All these factors conspire to put supply chains under stress and increased risk of failure and could inhibit construction businesses to realise their full growth potential.

The research by UCL (2013) on behalf of BIS shows that trade credit plays a vital role in the balance sheets of construction contractors, with lower tier contractors receiving trade credit from firms outside of the industry, which then allows them to give trade credit to contractors further up the supply chain, and ultimately to the client.⁵⁶ The Tier 2 sub-contractors are major net providers of trade credit to the rest of the industry which means that their role in the supply chain is of particular significance. The 'cascading' nature of this trade credit provision suggests that if contractors in the lower tiers experience problems accessing trade credit then this could have implications throughout the supply chain. Research suggests that during the recent crisis, construction contractors have been switching their finance sources from bank funds towards other sources of funding including trade credit.⁵⁷

Government has championed a number of initiatives which aim to get liquidity in to the supply chain as quickly as possible. Initiatives such as Supply Chain Finance, Project Bank Accounts (PBAs), and the Enterprise Finance Guarantee all come together with this end in mind.

For construction projects, the Government has committed to ensuring fair payment across all of its construction projects, whether this is evidenced through transparent and auditable 30 day payment terms or through the setting up of a Project Bank Account. On the latter, the Government has committed over £2 billion of project spend via PBAs to date, with payment reaching tier 3 contractors (many of whom are SMEs) within five business days.

Supply Chain Finance, now being deployed in the healthcare, defence and construction sectors, enables the balance sheets of prime contractors to be used to facilitate the financing of payment to supply chain members where this would not otherwise have been affordable or available. This scheme offers the opportunity for cash to be released to the supply chain in advance of contracted payment terms.

One further pilot, which is being trialled by Kingfisher, is the Enterprise Finance Guarantee. This Government backed guarantee enables suppliers to extend their

54 The same survey found that when applying for loans, advice was sought by 1 in 10 construction SMEs compared to a third in other sectors.

55 The BIS Small Business Survey found that Some 33% of construction SME employers state that customers paying them later than they require them to in their normal terms of business is a big problem, This is compared to 19% of all SME employers citing late payment as a big problem.

56 UCL (2013) Trade credit in the UK construction industry.

57 i.e. Trade credit has become an increasingly important part of firms balance sheets.

credit terms to companies who would not otherwise be able to receive trade credit. This opens up local and regional access to finance and stimulates investment which would otherwise not have been possible. Government is keen to attract other such pilots.

However, it is clear that there is more to do.

The commitment

Industry and Government will create the conditions for construction supply chains to thrive by addressing access to finance and payment practices.

6. Research and innovation

The challenge and opportunity

The UK has a world-class science and research base that supports the development of innovative solutions in a number of priority areas for construction. These solutions need to be exploited across the industry in order to achieve this strategy's ambitions.

The UK's research community is amongst the best in the world, and currently there are £188 million worth of construction-related science and engineering projects supported by the Engineering and Physical Sciences Research Council (EPSRC) alone; four-fifths of which are delivered with industry partners. However, the lack of a co-ordinated approach to innovation across the sector means that uptake of research and development is limited, with many construction firms reporting that they undertake no innovation at all.⁵⁸ The challenge for this strategy is therefore fourfold:

- to make the knowledge developed in the research community more visible in the wider construction industry;
- to make the most of existing technologies;
- to remove barriers that inhibit innovation; and
- to anticipate future research needs as part of a long term vision for the sector.

Bringing forward more research and innovation

There is a great wealth of research activity already underway in two strategic priority areas:

1. Green construction

Over the last five years the Technology Strategy Board (TSB) has invested £83 million of innovation funding through the Low Impact Buildings innovation platform, supported by industry match funding of £34 million. This recognises the pressing need to ensure the UK's new and existing building stock is fit for purpose in a low carbon economy. The direct economic benefits of this investment are estimated to have been £1.5 billion over the past five years, and three quarters of the organisations supported are SMEs with fewer than 250 staff.

Alongside this, EPSRC is establishing a number of new or refreshed Centres for Doctoral Training. Some centres are likely to relate to green construction in Sustainable Built Environments and End-Use Energy Demand. These will equip our future research

⁵⁸ For example, according to the Community Innovation Survey (2011) only about a third surveyed firms in construction contracting reported to undertake some form of innovation activity.

and business leaders with the high-level postgraduate knowledge and skills required to meet the cross-disciplinary infrastructure and construction challenges.

Improving our understanding of design approaches, including passive design, to balance energy demand and supply in the built environment is vital in enabling the industry to design and construct high performance, resource efficient buildings. This is an ambition of the discipline, 'building engineering physics', which is being supported by the EPSRC through a number of capital and research investments. Maintaining this support will place building engineering physics on a surer footing so that its potential is realised in the wider industry.

Making the most of this wealth of research activity is crucial if the construction industry is to play its part in meeting the UK's ambitious emission reduction targets. One example of this is the Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings (SPECIFIC) at Swansea University, which aims to turn buildings into mini power stations by developing coatings for steel and glass that can generate, store and then release renewable energy.

2. Smart construction and digital design

There is considerable research activity in the field of smart construction and digital engineering. The Centre for Smart Infrastructure and Construction at the University of Cambridge, jointly funded by EPSRC and the TSB, makes innovative use of emerging technologies in sensor and data management to dramatically improve whole life efficiency of built assets. Its demonstrator projects display how research translates into real world applications.

Two new programmes, funded by the EPSRC and the Economic and Social Research Council, will help provide the new research knowledge for upgrading our ageing infrastructure. The International Centre for Infrastructure Futures at UCL looks at how the interdependence of our infrastructure systems can be most efficiently managed, linking to the wider smart and future cities agenda. Alongside this, I-BUILD at Newcastle University explores novel infrastructure business models and innovative techniques for local delivery of services.

The Technology Strategy Board has set up the Future Cities Catapult with £50 million of funding to enable the UK to exploit the vast opportunities in the market for integrated approaches to delivering efficient, attractive and resilient cities. The UK construction industry is well positioned to play its part in this due to its world-leading status in project management, engineering, architecture and transport systems. The Catapult is backed-up with a major Future Cities demonstrator programme (£39 million) to show the value of integrated solutions. This will support UK-based businesses to develop new approaches and solutions that can be exported around the globe.



Runcorn Bridge uses an innovative cathodic protection system, with remote monitoring, to stop corrosion and simplify future maintenance and inspection.

Credit: Mott MacDonald

This demonstrates the substantial research efforts that are underway in this key strategic area. It is vital that industry and Government works with existing bodies, such as the Modern Built Environment KTN and the National Platform for the Built Environment, to ensure that the research agenda has maximum impact in the wider industry.

[Making the most of BIM and offsite](#)

The joint industry and Government Building Information Modelling (BIM) strategy is beginning to show the transformative potential of digital techniques in construction. BIM allows companies to make more intelligent use of data, which enables waste to be stripped out of the construction process. By 2016 all Government construction projects will be using BIM level 2, irrespective of project size.

The BIM Task Group, driven by industry and supported with £4 million of Government funding, has led implementation of the BIM strategy. As an example, collaboration with the Ministry of Justice has demonstrated significant savings in the design and procurement stages, with the £20 million Cookham Wood prison reporting an 18% saving through effective use of BIM.

Between 2016 and 2025 it is expected that the UK Government and industry will move to Level 3 BIM, which is deeply embedded in the wider digital economy. This

will require the further development of technologies and commercial models, and promises enormous benefits through delivering fully transparent data sharing capabilities across the supply chain. Industry and Government must commit to the Level 3 agenda in order to fully realise BIM's potential.

Availability of digital information will also enable more effective design for manufacture and assembly. This will make offsite construction solutions, which are often precluded by current procurement practices, more readily applicable in the future. As demand for low carbon and sustainable construction continues to increase, the potential of offsite construction to deliver assets with half the waste and 25% less energy in use will make it an ever more attractive option.⁵⁹

Other benefits of offsite construction can include greater precision and quality, reduced overall manufacture/assembly time, and safer and cleaner working conditions. It is crucial that all construction options are considered on a level playing field to ensure assets are built in the most efficient way.

Removing barriers to innovation

Analysis shows that around two-thirds of construction contracting companies are not innovating at all.⁶⁰ There are five main barriers that prevent innovation in the sector:

1. the nature of construction procurement frequently restricts collaboration between client and supply chain, particularly at an early enough stage to fully explore options for innovation;
2. companies are not confident that innovation will be commercially rewarding, with particular concerns about levels of demand for innovative products and services;
3. companies that do want to innovate find that the necessary finance is too expensive and/or difficult to access, that the approach to risk and insurance of works deters innovation and that some of the Government support available to the industry is not sufficiently visible;
4. there is a failure to capture learning from successful innovations and take this forward to future projects; and
5. collaboration between industry, academia and research organisations is patchy, which limits effective knowledge transfer.

Industry and Government must now take steps to remove these barriers. Best practice guidance for applying innovative solutions and new technologies must be disseminated across the industry so that the vast amount of research activity in the sector is translated into real improvements in construction. We will work with the

59 Offsite construction: sustainability characteristics (May 2013, BuildOffsite)

60 Source: Community Innovation Survey (2011)

Modern Built Environment KTN, the National Platform and the research community to make sure this happens.

We will also work with relevant funding agencies to achieve improved visibility of existing sources of innovation funding thereby helping reduce uncertainties for SMEs, increase the uptake of innovative products and services, for example in relation to the supply chain for green construction, and promote transformative solutions in existing areas of innovation, for instance in the use of Green Deal finance to achieve energy efficiency targets in buildings.

The commitment

Industry and Government are committed to working with academic and research communities to:

- *inspire and bring forward more research, development and demonstration;*
- *promote it to the wider industry;*
- *make the most of existing technologies;*
- *remove barriers to innovation; and*
- *improve visibility and access to innovation and R&D incentives.*

Chapter 4: Leadership

This strategy is supported by the key industry bodies. Taking it forward in partnership between industry and Government requires clear and strong leadership from across the entire breadth of the construction industry and Government.

Sector Council

To provide clarity of purpose and strength of leadership we have created a sector council to own and oversee the implementation of this strategy.

The new Construction Leadership Council will be jointly chaired by the Secretary of State for Business, Innovation and Skills and Sir David Higgins, Chief Executive of Network Rail. Full membership of the Council is listed in Annex A. Membership comprises senior business people representing key industry bodies and senior representatives of Government departments.

Ownership of Actions

The initial actions arising from this strategy are set out in Annex B. Further actions will be identified by the Construction Leadership Council as the transformation programme progresses.

Ownership of actions will be assigned to industry bodies. They will be accountable for their implementation to the Council.

Annex A: Construction Leadership Council membership

- Rt Hon Dr Vince Cable MP, Secretary of State for Business, Innovation and Skills, Co-Chair
- Rt Hon Michael Fallon MP, Minister of State for Business and Enterprise
- Sir David Higgins (Network Rail), Co-Chair
- Mark Clare (Barratt Developments)
- Louise Clarke, (CIRIA) CIC 2050 Group
- Geoff Cooper (Travis Perkins), Construction Products Association
- Paul Golby, EPSRC
- Iain Gray, Technology Strategy Board
- Peter Hansford, Government Chief Construction Adviser
- Terry Hill (Arup), UKTI Construction Sector Advisory Group
- Steve Hindley (MIDAS), CBI Construction Council
- Paul Kavanagh (Imtech), Specialist Engineering Contractors Group
- Kevin Louch (Stanford Industrial Concrete Flooring), National Specialist Contractors' Council
- Judy Lowe, Construction Industry Training Board
- Liz Male, TrustMark
- Juliet Mountford, Cabinet Office Efficiency and Reform Group
- Janice Munday, Department for Business, Innovation and Skills
- Steve Murphy, UCATT
- Adrian Penfold (British Land)
- Tony Pidgley (Berkeley Group)
- Jack Pringle (Pringle Brandon Perkins + Will), Construction Industry Council
- Mike Putnam (Skanska), Green Construction Board
- Neil Sachdev (Sainsbury's)
- Paul Sheffield (Kier)
- Geoffrey Spence, HMT Infrastructure UK
- Anna Stewart (Laing O'Rourke)
- James Stewart (KPMG)
- Mark Wakeford (Stepnell), Construction Alliance
- Andrew Wolstenholme (Crossrail), ERG/IUK Joint Steering Committee
- Phil Wynn Owen, Department of Energy and Climate Change

Annex B: Action Plan

This action plan is not complete and it will continue to be updated and supplemented as the strategy is taken forward. Its purpose is to set out those specific actions which will take us closer to achieving our vision. It is therefore currently a tactical, rather than strategic document.

Strategic Priorities

	Action	Target Date	Owner
Smart construction and digital design	<i>Industry and Government will fully commit to building the UK's comparative advantage in smart construction and digital design through the Digital Built Britain agenda</i>		
	Fully commit to the existing BIM programme to create a critical mass	Autumn 2013	The Government Construction Board, the BIM Task Group and the construction umbrella bodies/ SFFC
	Provide support for businesses to exploit the vast export potential of the digital and BIM capabilities the UK is pioneering	Ongoing	BIM Task Group Technology Strategy Board
	Maintain our leadership position by continuing to develop relevant protocols and standards on an international basis	Ongoing	BIM Task Group

	Action	Target Date	Owner
Low Carbon and sustainable construction	<i>Industry and Government will develop market and technology based plans to secure the jobs and growth opportunities from driving carbon out of the built environment, led by the Green Construction Board</i>		
	<i>Industry and Government strongly support the continuation of the Green Construction Board</i>		
	Develop a series of market based plans which set out the programme for investment in energy low carbon construction	First plan complete by Autumn 2013	Green Construction Board
	Develop a series technology based plans which set out the programme for investment in energy low carbon construction	First Plan complete by Winter 2013	Green Construction Board
	Commit to a resource efficiency voluntary agreement	Spring 2014	Construction businesses with support from WRAP
	Consider the scope to develop a climate change adaptation plan	Autumn 2013	Green Construction Board
Global trade	<i>Industry and Government will work together to identify global trade opportunities for UK professional services, contracting and product manufacturing and promote UK construction through the GREAT brand</i>		
	Explore the appetite for a trade “grouping” of UK based contractors	Autumn 2013	UKTI
	Explore the potential for HMG to create an entity to support overseas trade in construction	Autumn 2013	UKTI
	Propagate UK Export Finance Services (UKEF) to UK majors	Ongoing	UKTI

	Action	Target Date	Owner
	Develop marketing materials through the GREAT campaign to better promote UK comparative advantage around whole life cost, sustainable construction and BIM	Winter 2013/14	UKTI
	Government and industry to undertake a construction manufacturing capacity and capability gap analysis to understand what may enable capacity expansion	Spring 2014	CPA
	Government and industry to identify measures to boost export growth and enhance competitiveness at home and abroad	Spring 2014	CPA/UKTI

Drivers of Change

	Action	Target Date	Owner
The image of the industry	<i>Industry and Government will work together to improve the image of the industry by inspiring young people and through a co-ordinated approach to health and safety and improving performance in the domestic repair and maintenance market</i>		
	Develop a co-ordinated approach to engaging young people	Winter 2013	Construction umbrella bodies
	Maintain the UK's global leadership position in health and safety by driving up standards on smaller projects and bringing greater focus to occupational health	Ongoing	Industry
	TrustMark will be re-launched, with new standards and full support from trade bodies, consumer organisations and Government	Summer 2013	Industry and Government

	Action	Target Date	Owner
Capability in the workforce	<i>The construction industry and Government will work with skills bodies to ensure that the capability issues in construction are addressed in a co-ordinated and strategic manner</i>		
	Develop action plans to tackle 5 further capability and capacity issues raised by the pipeline	Spring 2014	Industry
	Address how to make apprenticeships less dependent on market fluctuations e.g. through mechanisms for pooling apprenticeships	Summer 2014	Industry and Government
	Establish a common gateway for the construction industry that will set out routes to entry and career pathways	Summer 2014	Industry and Government
	Provide a high level statement for all in the supply chain which sets out the industry's commitment to having young people working on sites. This will sign post the new guidance HSE has prepared.	Winter 2013	NSCC
	Review the existing approach to the identification of development needs and delivery of qualifications and development interventions	December 2014	Government, industry, academia and relevant professional bodies, ITBs and SSCs
	Review/update the CSkills/ HSE funded research of all recognised card schemes within a critical mass of industry or by sector	Winter 2013	Industry
	Identify one card scheme which will be promoted through public procurement	Spring 2014	Government and industry

	Action	Target Date	Owner
	Develop a transition plan to include all occupations at the appropriate level as defined by sectors.	Autumn 2014	Industry
Future Work Opportunities	<i>The construction industry and Government will work together to develop and refine the pipeline of future work opportunities and make it more usable for all construction businesses</i>		
	Encourage more non-Government owned pipelines to build a better picture of future demand	Ongoing – first additional one by Winter 2013/14	Construction umbrella bodies
	Consider a process to identify specific areas where regulatory risk is creating concern to the construction industry.	To start in Autumn 2013	Construction umbrella bodies and BIS
	Review how businesses use the construction pipeline	Winter 2013/14	CBI Construction Council
	Identify local champions to develop regionally focused pipelines	Autumn 2013	BIS/BIS local
	Government, CBI (for business) and the industry to create a demand map for the industry, including infrastructure, RMI and new build to 2025	Autumn 2013	CBI and Industry umbrella bodies
Client capability and procurement	<i>The construction industry and Government will drive procurement efficiency and explore options for further efficiency gains in the procurement process, led by the Government Construction Board and Infrastructure UK Client Group</i> <i>Industry and Government are strongly committed to delivering the Government Construction Strategy and the HM Treasury Infrastructure Cost Plan</i>		
	Key IUK Work programme items for the next 18 months/ 2 years	Ongoing	IUK

	Action	Target Date	Owner
	Key Cabinet Office work programme items	Ongoing	CO-ERG
	Build on the “Effectiveness of Frameworks Review” by conducting further analysis to identify the cost of accessing frameworks	Winter 2013/14	National Federation of Builders
	Review cross-Federation activity targeted at assisting SMEs to access public sector opportunities	Winter 2013/14	Federation of Master Builders
	Establish a construction procurement group in the Local Government Association and develop a Local Government construction procurement strategy	Spring 2014	Local Government Association
	Develop a business case for how to remove bureaucracy from the construction procurement process by adopting standard PQQs and applying them through the supply chain	Spring 2014	Construction industry umbrella bodies Government
A strong and resilient supply chain	<i>Industry and Government will work together to create the conditions for construction supply chains to thrive</i>		
	Review the supply chain analyses provided by BIS and identify top 5 priority issues	Winter 2013/14	Construction umbrella bodies
	Develop a construction supply chain payment charter		Institute of Credit Management
	Promote the range of access to finance products available to construction SMEs	Winter 2013/14	Construction umbrella bodies/ SFFC and BIS

	Action	Target Date	Owner
Research and innovation	<i>Industry and Government will work with academic and research communities to bring forward more research, development and demonstration to the wider industry and work to remove barriers to innovation</i>		
	Explore options for improving awareness of the innovation and research agenda in the wider construction industry	Spring 2014	Knowledge Transfer Network, National Platform and funding bodies
	Develop funding and collaboration opportunities to support UK businesses innovating in those areas identified as strategic priorities	Summer 2014	Technology Strategy Board Research Councils Knowledge Transfer Network
	Trial the use of “innovation exchange discussions” between clients and their supply chains at the early stage of project development (as pioneered by British Water), and “innovation challenges” that determine likely innovation requirements in a sub-sector	Spring 2014	Construction Alliance
	Explore options for improving post-project evaluation standards	Summer 2014	Industry
	Joint development by the industry and researchers of a long-term vision to inspire research for future exploitation	Summer 2014	National Platform Research Councils

Acknowledgement

The guidance and support of the Construction Industrial Strategy Advisory Council (CISAC) is acknowledged.

CISAC members:

- Peter Hansford (Government Chief Construction Adviser), Chair
- Professor Denise Bower (University of Leeds)
- Mark Clare (Barratt Developments)
- Geoff Cooper (Travis Perkins)
- Keith Howells (Mott MacDonald)
- Chris Kane (Greendale Construction)
- Simon Kirby (Network Rail)
- Kevin Louch (Stanford Industrial Concrete Flooring)
- Professor Robert Mair CBE (University of Cambridge)
- Graham Manly (Gratte Brothers)
- Steve Murphy (UCATT)
- Chris Newsome (Anglian Water)
- Ray O'Rourke KBE (Laing O'Rourke)
- David Pinder (BDR Thermea)
- Jack Pringle (Pringle Brandon Perkins + Will)
- Mike Putnam (Skanska UK)
- Neil Sachdev (Sainsbury's)
- Paul Sheffield (Kier Group)
- James Stewart (KPMG)
- Mark Wakeford (Stepnell)

Also Andrew Shepherd (Laing O'Rourke), and the Futures Working Group, chaired by Professor Tim Broyd (UCL).

A Note on Devolution

This strategy addresses the construction industry as a single entity as the sector operates across the whole of the UK.

When using the term “Government” the strategy is referring to the UK Government and is not communicating on behalf of the Scottish Parliament, the National Assembly for Wales and the Northern Ireland Assembly. The devolved administrations have different responsibilities and powers in relation to construction. We therefore recommend contacting the devolved administrations regarding their approach to any specific issue.



Completion of eastbound cavern at Stepney Green shaft.

Credit: Crossrail

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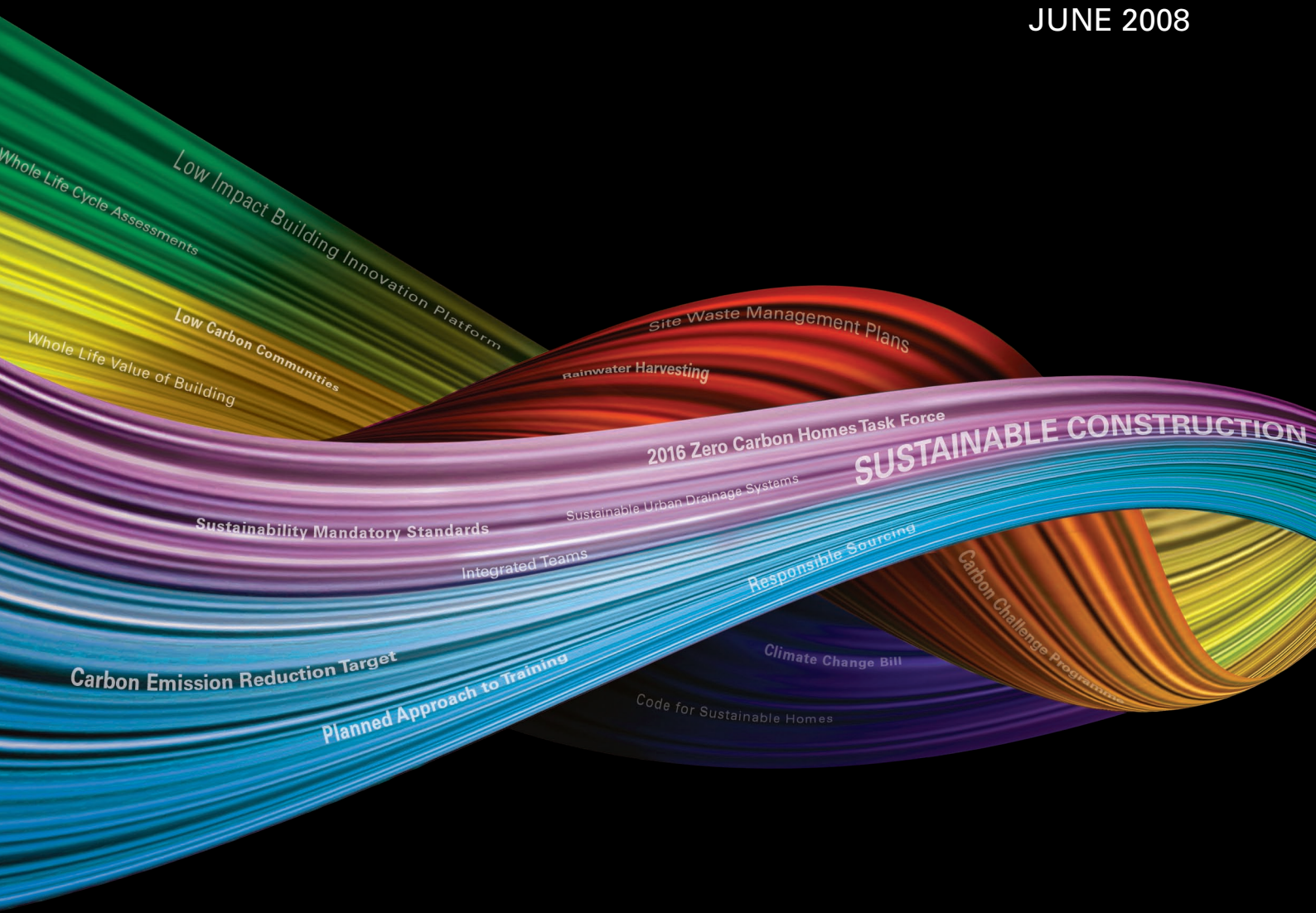
HM Government

in association with



STRATEGY FOR SUSTAINABLE CONSTRUCTION

JUNE 2008



Low Impact Building Innovation Platform

Whole Life Cycle Assessments

Low Carbon Communities

Whole Life Value of Building

Site Waste Management Plans

Rainwater Harvesting

2016 Zero Carbon Homes Task Force

SUSTAINABLE CONSTRUCTION

Sustainable Urban Drainage Systems

Sustainability Mandatory Standards

Integrated Teams

Responsible Sourcing

Carbon Challenge Programme

Carbon Emission Reduction Target

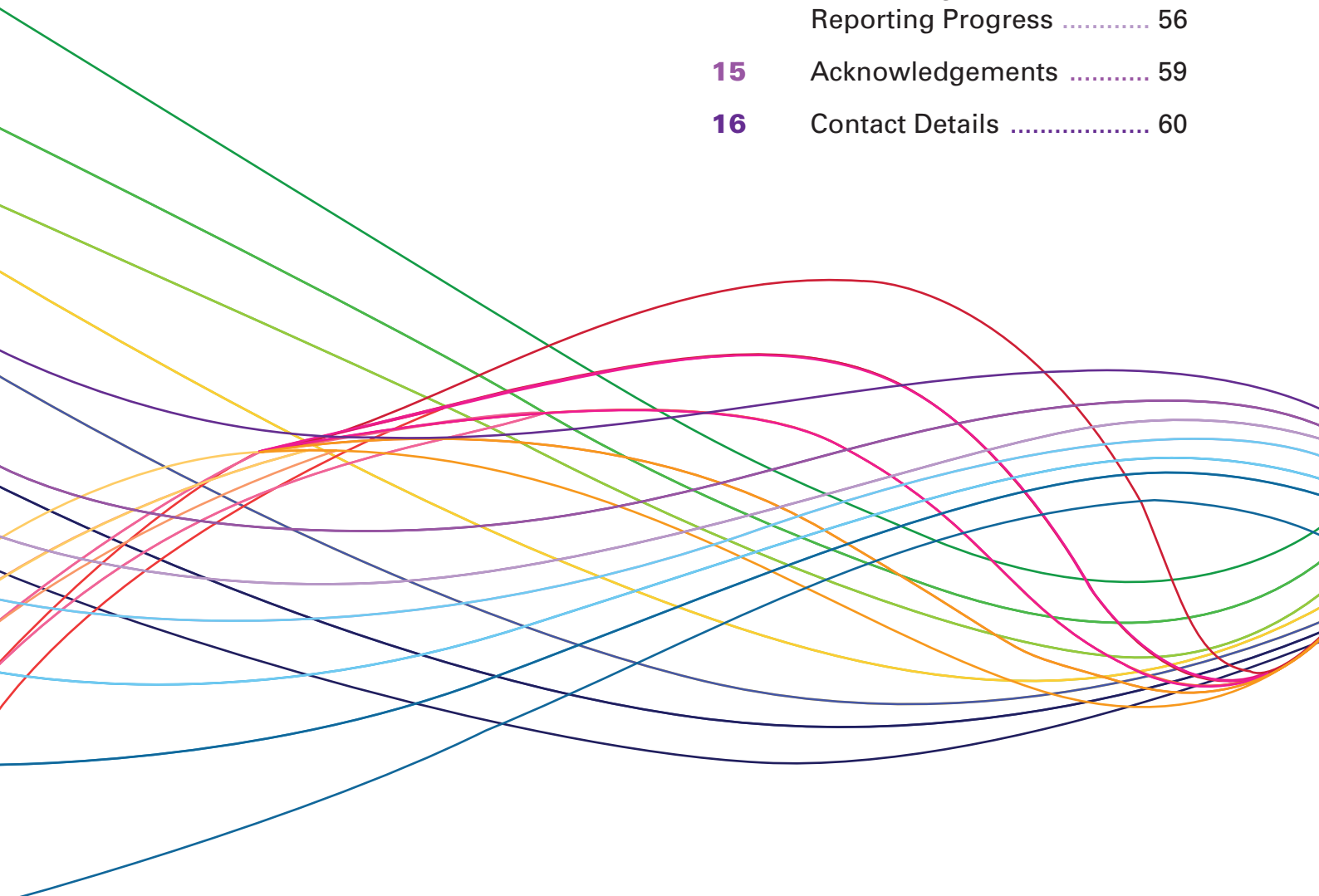
Planned Approach to Training

Climate Change Bill

Code for Sustainable Homes

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1 Foreword

The construction industry is significant: its output is worth over £100bn a year. It accounts for 8% of Gross Domestic Product (GDP) and provides employment for around 3 million workers. The public sector is a major client of the industry and is responsible for directly procuring about a third of all construction.

The output of the construction industry, be it public buildings, commercial buildings, homes or infrastructure such as our roads, harbours and sea defences, has a major impact on our ability to maintain a sustainable economy overall and has a major impact on our environment. Moreover, it is clear that we cannot meet our declared environmental targets without dramatically reducing the environmental impact of buildings and infrastructure construction; we have to change the way we design and build.

This joint industry and Government Strategy is based on a shared recognition of the need to deliver a radical change in the sustainability of the construction industry.

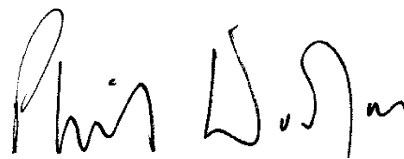
We want to lead the world in sustainable construction. The Strategy for Sustainable Construction represents a commitment from the industry to work towards this vision by reducing its carbon footprint and its consumption of natural resources, while creating a safer and stronger industry by training and retaining a skilled and committed workforce. It lays out specific actions by industry and by Government which will contribute to the achievement of overarching targets within each of the main areas covered by the sustainability agenda.

For its part, in its 2007 Sustainable Procurement Action Plan the Government set out its aim for procure more sustainable properties and infrastructure to be procured throughout the public sector. This Strategy also aims to provide greater clarity about the range of Government commitments and targets which are relevant to the delivery of a sustainable construction industry.



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Chair of the Strategic Forum for Construction

2

Introduction

Economic Contribution of Construction

The construction industry makes an important contribution to the competitiveness and prosperity of the economy. A modern, efficient infrastructure is a key driver of productivity, and the construction industry has a major role in delivering the built infrastructure in an innovative and cost effective way. Firms throughout the economy are dependent on the performance of built infrastructure such as roads, rail, power stations and telecoms networks to remain competitive, and inward investors will consider the quality of the built infrastructure as one of the key factors when considering location decisions. Our productivity also depends on the efficiency and nature of the built environment. The flexibility, mobility and effectiveness of the workforce and the productivity of firms depend on the availability of appropriately configured and located houses and premises.

The design, construction and operation of our built environment have other important economic effects, for example, on the rate at which we use resources. Buildings are responsible for almost half of the country's carbon emissions, half of our water consumption, about one third of landfill waste and one quarter¹ of all raw materials used in the economy. Through its impact on the built environment, construction plays a central role in our drive to promote sustainable growth and development.

1 420Mt from a total of 1508Mt

420Mt - The Construction Industry Mass Balance: resource use, wastes and emissions, R A Smith, J R Kersey and P J Griffiths, Viridis Report VR4 (Revised), 2003, ISSN 1478-0143 www.tinyurl.com/46ho5g

1508Mt - page 59, Mass Balance: An Essential Tool for Understanding Resource Flows, Conor Linstead, Caroline Gervais and Paul Ekins, October 2003, www.massbalance.org/resource

Vision

Government and industry share a vision of construction as a competitive sector which plays a central role in delivering sustainability and prosperity across the economy.

The Government has introduced a wide range of measures to promote competitiveness, most recently in the Enterprise Strategy, Enterprise: unlocking the UK's talent² and the Innovation White Paper, Innovation Nation³. This Strategy is developed by Government and the industry to focus on sustainability in construction.

Joint Industry/ Government Strategy

The Strategy⁴ for Sustainable Construction will help to deliver the aims set out in the UK's Sustainable Development Strategy⁵. It is a joint industry and Government initiative, and is intended to promote leadership and behavioural change, as well as delivering substantial benefits to both the construction industry and the wider economy.

2 www.tinyurl.com/2mhpkp

3 www.tinyurl.com/2mykoz

4 This is a Strategy for England. Policy for most aspects of sustainable construction are devolved matters. Government departments continue to work closely with Welsh, Scottish and Northern Irish counterparts who are also driving forward the sustainable construction agenda.

5 www.tinyurl.com/2rs3h7

This Strategy complements the Action Plan for Civil Engineering published in July 2007⁶. The Strategy does not encompass some of the broader issues facing developers such as planning, the management of the existing built environment and transport policy. Information on Planning policy⁷, the Built Environment⁸ and Transport policy⁹ can be found below in the relevant footnote.

The Strategy lies alongside a strong business case for the sustainable construction agenda, based on:-

- Increasing profitability by using resources more efficiently;
- Firms securing opportunities offered by sustainable products or ways of working;
- Enhancing company image and profile in the market place by addressing issues relating to Corporate and Social Responsibility.

6 www.tinyurl.com/6ytcg

7 www.planningportal.gov.uk

8 www.cabe.org.uk

9 www.dft.gov.uk

Purpose of the Strategy

This Strategy is aimed at providing clarity around the existing policy framework and signalling the future direction of Government policy. It aims to realise the shared vision of sustainable construction by:

- Providing clarity to business on the Government's position by bringing together diverse regulations and initiatives relating to sustainability;
- Setting and committing to higher standards to help achieve sustainability in specific areas;
- Making specific commitments by industry and Government to take the sustainable construction agenda forward.

Delivery

To deliver the Strategy, Government and industry have devised a set of overarching targets related to the 'ends' and 'means' of sustainable construction. The 'ends' relate directly to sustainability issues, such as climate change and biodiversity; the 'means' describe processes to help achieve the 'ends'.

The following table sets out overarching targets and the chapters of the Strategy in which they are discussed. Central to each of these chapters is a delivery plan for industry and Government of specific actions and deliverables which will contribute to the achievement of the overarching target.

	Chapter Headings	Overarching Target
The 'Means'	Procurement	To achieve improved whole life value through the promotion of best practice construction procurement and supply side integration, by encouraging the adoption of the Construction Commitments in both the public and private sectors and throughout the supply chain.
	Design	The overall objective of good design is to ensure that buildings, infrastructure, public spaces and places are buildable, fit for purpose, resource efficient, sustainable, resilient, adaptable and attractive. Good design is synonymous with sustainable construction. Our aim is to achieve greater use of design quality assessment tools relevant to buildings, infrastructure, public spaces and places.
	Innovation	To enhance the industry's capacity to innovate and increase the sustainability of both the construction process and its resultant assets.
	People	An increase in organisations committing to a planned approach to training (e.g. Skills Pledges; training plans; Investors in People or other business support tools; Continuous Professional Development (CPD); life long learning). Reduce the incidence rate of fatal and major injury accidents by 10% year on year from 2000 levels.
	Better Regulation	A 25% reduction in the administrative burdens affecting the private and third sectors, a 30% reduction in those affecting the public sector by 2010.
The 'Ends'	Climate Change Mitigation	Reducing total UK carbon dioxide (CO2) emissions by at least 60% on 1990 levels by 2050 and by at least 26% by 2020. Within this, Government has already set out its policy that new homes will be zero carbon from 2016, and an ambition that new schools, public sector non-domestic buildings and other non-domestic buildings will be zero carbon from 2016, 2018 and 2019 respectively.
	Climate Change Adaptation	To develop a robust approach to adaptation to climate change, shared across Government.
	Water	To assist with the Future Water vision to reduce per capita consumption of water in the home through cost effective measures, to an average of 130 litres per person per day by 2030, or possibly even 120 litres per person per day depending on new technological developments and innovation.
	Biodiversity	That the conservation and enhancement of biodiversity within and around construction sites is considered throughout all stages of a development.
	Waste	By 2012, a 50% reduction of construction, demolition and excavation waste to landfill compared to 2008.
	Materials	That the materials used in construction have the least environmental and social impact as is feasible both socially and economically.

3 Procurement

OVERARCHING TARGET:

To achieve improved whole life value through the promotion of best practice construction procurement and supply side integration, by encouraging the adoption of the Construction Commitments¹⁰ (See Construction Commitments pages at the end of this chapter) in both the public and private sectors and throughout the supply chain.

Context

Good procurement practice is crucially important to reduce the overall cost of projects, to improve the economic efficiency of the construction industry and to ensure that projects, when complete, are fit for purpose, thereby securing whole life value.

For the public sector, there is an extensive range of standards, advice and guidance which forms the procurement framework. This material is generally considered to be of high quality. While the public sector will never be a single, uniform client, and Government has made a great deal of progress, it is clear that more needs to be done to ensure best practice is more widespread. This was reflected in the April 2007 National Audit Office (NAO) report "Building for the future"¹¹.

The 2005 NAO report "Improving public services through better construction"¹² identified significant benefits to the public purse (£2.6 billion annually) through the adoption of best practice procurement. This represents a powerful business case to base procurement on whole life costs (rather than the cheapest option) and to engage at an early stage with the supply chain.

¹⁰ www.strategicforum.org.uk

¹¹ www.tinyurl.com/ywpl4p

¹² www.tinyurl.com/5yu6l

The goal of its Sustainable Procurement Action Plan¹³ is for the UK Government to be among the European Union (EU) leaders in sustainable procurement by 2009 to help achieve a low carbon more resource efficient public sector. The Government is committed to driving up standards in sustainable procurement for public sector buyers. The 2008 Budget¹⁴ announced a new policy framework for procurement including practical guidance on how to take the environment into account; and that a new Centre for Expertise in Sustainable Procurement will be established in the Office of Government Commerce (OGC).

Government recognizes the importance of innovation in procurement through market-based incentives such as Forward Commitment Procurement¹⁵ with direct support for innovation. The Department for Innovation, Universities and Skills (DIUS) will take forward this combined approach, working closely with other departments, to support suppliers to bring forward new approaches to be developed in partnership with the public sector.

The construction industry is also seeking to drive up standards through the Construction Commitments¹⁶.

This Strategy seeks to build on a shared commitment to procure in a more sustainable way and focuses on promoting the business case for better procurement practices in the public and private sectors. For this reason, the Strategic Forum for Construction¹⁶ (SFfC), the Public Sector Construction Clients' Forum¹⁷ (PSCCF), and the Construction Clients Group¹⁸ feature extensively in the actions and deliverables table.

There are a number of enabling operations which can play a significant role in the effective delivery of a construction project. One of these is logistics (in its widest sense). Often considered a backroom function, logistics can be overlooked in terms of its contribution to the broad 'improvement' and sustainability agenda. Studies¹⁹ have shown that improving logistics (product transport, handling, delivery and storage) can reduce up to 2.5% of a capital project cost and significantly reduce waste and transport carbon emissions. While the construction industry has been slow to challenge the status quo and look to better practices, other sectors have seen the optimum integration of logistics into the production process as central to their success.

13 www.tinyurl.com/yp9dsc

14 See full Budget 2008 Report at: www.tinyurl.com/2ethop

15 www.tinyurl.com/5hgvpz

16 See: www.strategicforum.org.uk for further details

17 www.tinyurl.com/yntusz

18 See www.tinyurl.com/4ew5hx for details

19 See: www.tinyurl.com/3ojuee for details

Actions and Deliverables

10

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
<p>Parts of the industry – clients, consultants, main contractors, specialist contractors*, and product manufacturers and suppliers – to be engaged in supply chains on 30% of construction projects and for 40% of their work to be conducted through integrated project teams.</p> <p>* These targets apply to those specialist contractors involved in Mechanical & Electrical work. For other specialists, the target is to establish by 2012 a mechanism for measuring integration in their sector.</p>	Strategic Forum	2012 - measured using Constructing Excellence Key Performance Indicator (KPI) data
35% of client activity, by value, embraces the principles of the Clients' Commitments ²⁰ .	Strategic Forum	2010 - Constructing Excellence using the Construction industry KPIs
60% of client activity, by value, embraces the principles of the Clients' Commitments.	Strategic Forum	2012 - Constructing Excellence using the Construction industry KPIs
BERR ²¹ /SfFC Integration Demonstration Projects.	BERR/SfFC Integration Task Group	Ongoing
BERR / OGC ²² / Constructing Excellence Best Practice Roadshows.	BERR/OGC	2009
Review of Procurement Strategies set out in Achieving Excellence ²³ to ensure alignment with the delivery of whole life value.	OGC and PSCCF ²⁴	2008
Creation of a Centre of Expertise in Sustainable Procurement.	OGC	2008 / 2009
Development of simple "how to" guidance for clients.	Construction Clients Group ¹⁸	2009

20 The Clients' Commitments refer to the support of the Construction Commitments by the Construction Clients Group¹⁸

21 Department for Business, Enterprise & Regulatory Reform

22 Office of Government Commerce

23 www.tinyurl.com/4thee2

24 Public Sector Construction Clients' Forum

Measurement and Reporting

Client leadership, procurement and integration are key planks of the Egan industry improvement agenda²⁵. The Strategic Forum for Construction has agreed a measurement regime for monitoring the industry's progress towards more integrated working and increasing client leadership. More widespread adoption of integrated working practices within the industry should help deliver a more sustainable end product. This will be reviewed on an annual basis and is based on Constructing Excellence's Key Performance Indicator (KPI) data²⁶.

As part of the Comprehensive Spending Review, a new set of Public Service Agreements²⁷ which incorporate the principles of sustainable development have been agreed. Permanent Secretaries are accountable for their departments' overall progress against these agreements and for ensuring, from 2007-2008 onwards, that key staff in their departments have performance objectives and incentives that drive the implementation of the Sustainable Procurement Action Plan.

The Sustainable Development Commission (SDC) reports on Departmental progress towards the targets for sustainable operations on the Government estate (SOGE)²⁸. This scrutiny includes examining progress with completing BREEAM²⁹ assessments for new builds and major refurbishment (See the [Design Chapter](#) below) and compliance with the mandatory procurement standards published alongside the 2007 UK Sustainable Procurement Action Plan¹³. The SDC reports on progress via its annual Sustainable Development in Government Reports³⁰.

The Department for Environment, Food and Rural Affairs³¹ (Defra) already provides guidance to construction clients on setting targets, measuring and reporting performance.

Future Work

Government will continue to work closely with the Strategic Forum for Construction. Close collaboration is essential if we are to make real progress.

The actions and deliverables above set out a range of activities to promote best practice throughout the construction industry and its client base. Achieving a truly integrated industry remains a major challenge.

25 www.tinyurl.com/62ad7a

26 www.tinyurl.com/5yyw63

27 www.tinyurl.com/685us3

28 www.tinyurl.com/4n8ty7

29 BRE Environmental Assessment Method

30 www.tinyurl.com/3lbu5a

31 Through WRAP, Carbon Trust and the Energy Saving Trust

CONSTRUCTION COMMITMENTS IN BRIEF:

The full text of the Construction Commitments are available from the Strategic Forum for Construction website: www.strategicforum.org.uk

PROCUREMENT & INTEGRATION

A successful procurement policy requires ethical sourcing, enables best value to be achieved and encourages the early involvement of the supply chain. An integrated project team works together to achieve the best possible solution in terms of design, buildability, environmental performance and sustainable development.

COMMITMENT TO PEOPLE

Valuing people leads to a more productive and engaged workforce, facilitates recruitment and retention of staff and engages local communities positively in construction projects.

CLIENT LEADERSHIP

Client leadership is vital to the success of any project and enables the construction industry to perform at its best.

VISION ELEMENTS

SUSTAINABILITY

Sustainability lies at the heart of design and construction. A sustainable approach will bring full and lasting environmental, social and economic benefits.

DESIGN QUALITY

The design should be creative, imaginative, sustainable and capable of meeting delivery objectives. Quality in design and construction utilising the best of modern methods will ensure that the project meets the needs of all stakeholders, both functionally and architecturally.

HEALTH & SAFETY

Health and safety is integral to the success of any project, from design and construction to subsequent operation and maintenance.

4 Design

OVERARCHING TARGET:

The overall objective of good design is to ensure that buildings, infrastructure, public spaces and places are buildable, fit for purpose, resource efficient, sustainable, resilient, adaptable and attractive. Good design is synonymous with sustainable construction.

Our aim is to achieve greater use of design quality assessment tools relevant to buildings, infrastructure, public spaces and places.

14

Context

No building, infrastructure, public space or place can be considered genuinely well designed, or sustainable, if it does not contribute to the triple bottom line of environmental, social and economic sustainability.

A good design process requires real engagement with key stakeholders but offers the prospects of more sustainable management and maintenance of assets, and more competitive running costs.

CABE (the Commission for Architecture and the Built Environment) is clear that delivering design quality requires strong leadership and a clear vision from both clients and construction teams on what is to be achieved. Government continues to champion sustainable design through its Better Public Building initiative³². For example, sustainable design and procurement is recognized in the criteria for the Prime Minister's Award for Better Public Building. At Cabinet level, the Prime Minister has recently reaffirmed the importance of good design, and Andy Burnham, as Secretary of State, DCMS³³, has taken on the role of cross-Government Design Champion. At a local level, CABE supports a network of design champions in public authorities across the country. And at all levels, leadership needs to be informed by expert professional knowledge and an understanding of and engagement with the views of multiple stakeholders throughout the design and construction process, both from within the industry and beyond.

Various parties are driving forward the design agenda, including:

- The Strategic Forum for Construction and the Construction Industry Council, by promoting the Design Quality Indicator (DQI)³⁴, a process for evaluating design quality of buildings;
- CABE, the Home Builders Federation and the Civic Trust by developing and promoting the Building for Life scheme³⁵: a process for evaluating the design quality of new homes;
- The Institution of Civil Engineers (ICE), the Building Research Establishment (BRE) and the Construction Industry Research and Information Association (CIRIA), who have developed the CEEQUAL³⁶ assessment and award scheme for evaluating the environmental design quality of civil engineering and infrastructure projects.
- English Partnerships (EP) and Housing Corporation³⁸ (HC) will continue to adopt Building for Life as a consistent design quality benchmark and to ensure that housing schemes are delivered to a high standard against this.

32 www.betterpublicbuildings.gov.uk

33 Department for Culture Media and Sport

34 www.dqi.org.uk

35 www.buildingforlife.org

36 www.ceequal.com

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/ deliverable	Timescale
10% increase year on year from 2007 levels in the proportion of projects using DQI in public buildings (custodial, police, fire, courts and other public projects), housing, and education projects.	Strategic Forum	2010 - CIC ³⁷ measurement of number of DQI projects
10% increase year on year in the number of times the projects above use DQI.	Strategic Forum	2010 - CIC measurement of number of DQI events
Continued 10% per annum growth from 2010 levels in both of the first 2 targets.	Strategic Forum	2012 - CIC measurement of number of DQI projects and events
80% of projects to achieve at least 50% demand side representation at all workshops.	Strategic Forum	2010 - CIC measurement of ratio at DQI events
Full compliance with targets set in 2006 to achieve BREEAM 'excellent' for new builds and 'very good' for major refurbishments procured by Central Government, supported by the Centre for Expertise in Sustainable Procurement within OGC.	All Government Departments (SDC monitoring ⁸⁹)	Immediate
All public sector funded housing is built to Lifetime Homes Standards ^{40a} .	Communities and Local Government (CLG)	By 2011

16

37 Construction Industry Council

38 During 2008/9, English Partnerships and the Housing Corporation will transfer to a new body, The Homes and Community Agency. See www.tinyurl.com/6k5d66 for further details.

Measurement and Reporting

On behalf of the Strategic Forum for Construction, the Construction Industry Council will measure progress towards the Design Quality Indicator targets and report on an annual basis.

The Sustainable Development Commission gathers information from Departments on their use of BREEAM and reports annually via its annual Sustainable Development in Government Reports³⁹. The latest report was published on 18th March 2008⁴⁰.

Future Work

The Office of Government Commerce (OGC) Property Benchmarking Service⁴¹, which captures a number of key sustainability metrics at building level, became mandatory from 1 April 2008, for all Government offices over 500 square metres. This will allow all Government departments and their sponsored bodies to benchmark the performance of their property against industry best practice, informing strategic decisions about buildings and their impact on departmental delivery. The central database of civil estate properties, holdings and occupations (e-PIMS⁴²) is being enhanced in order to accommodate this data.

It is crucial that sustainable urban and landscape design is integrated into the design and construction process to ensure that the environmental, social and economic capacity of the physical and natural environment and the Green Infrastructure⁴³ of sustainable towns and cities, is protected, maintained and enhanced.

39 www.tinyurl.com/3lbu5a

40 www.tinyurl.com/5zlo84

40a Lifetime Homes, Lifetime Neighbourhoods, Feb 08, DCLG, Chapter 7, page 87, www.tinyurl.com/37btps. Lifetime Homes standards is an element in the Code for Sustainable Homes

41 www.tinyurl.com/6898tc

42 See www.tinyurl.com/3rfc7g for further details

43 www.greeninfrastructure.co.uk

5

Innovation

OVERARCHING TARGET:

To enhance the industry's capacity to innovate and increase the sustainability of both the construction process and its resultant assets.

18

Context

Innovation is the successful exploitation of new ideas to obtain competitive advantage. It is integral to developing new products for the market and new processes and ways of working. Greater sustainability should be at the heart of policy (like the Code for Sustainable Homes⁴⁴) and of standards and procurement to provide the signals to which the market can respond in an innovative and flexible manner.

The challenge for Government, industry and the knowledge base is to establish a framework within which innovation, research, development, demonstration, and knowledge transfer can thrive. The industry-led National Platform for the Built Environment⁴⁵ is developing a Strategic Research Agenda identifying future research priorities for the industry. One of its three priority themes is reduced resource consumption. This is also one of the priority themes for the Strategic Research Agenda to 2030, developed by the European Construction Technology Platform⁴⁶, within which a major Joint Technology Initiative on Energy Efficient Buildings is being developed⁴⁷.

The Technology Strategy Board (TSB) has developed an Innovation Platform in Low Impact Buildings⁴⁸ to enable industry to deliver more sustainable buildings through collaborative research and development (R&D), demonstration programmes, and design competitions. The Platform will address a number of key themes such as the integration of technologies into viable buildings; design tools for future climate change; the use of new materials and components; building management and the use of low-carbon energy sources. The Platform will draw on the Knowledge Transfer Network for the Modern Built Environment (MBE-KTN)⁴⁹ which aims to intensify technological innovation in the built environment and promote knowledge transfer.

BERR and the TSB are working closely with overseas partners on the innovation needs of a sustainable construction industry in the new European Research Area network for the construction and operation of Buildings (ERACOBUILD) due to commence in Autumn 2008.

The Government first published "Quick Wins"⁵⁰ procurement standards, which are mandatory for Government departments, in 2003. These standards were updated and extended in 2007. Further updates will be published later this year. They include minimum specifications for central heating, air conditioning, glazing and water appliances. BSI⁵¹ has also published its revised standard: "Design management systems: guide to managing innovation", (BS 7000-1:2008).

The Government Chief Information and Chief Technology Officers' Councils have produced two toolkits for Green Information and Communications Technology (Green ICT). A Green ICT Scorecard is available to aid the review and improvement of existing installations and there is also guidance, materials and information on best practice for the construction of sustainable data centres and the procurement of Green ICT⁵².

45 www.nationalplatform.org.uk

46 www.tinyurl.com/4djaoa

47 www.tinyurl.com/53nh7d

48 www.tinyurl.com/4tucnet

49 www.mбекtn.co.uk

50 www.tinyurl.com/5o4bzz

51 www.bsi-global.com

52 www.tinyurl.com/56nme2

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
Complete and publicise the National Platform's Strategic Research Agenda shaping medium to long term research priorities in Reduced Resource Consumption; Client orientated value; and information technology and automation. The aim is to promote awareness and engagement with the research agenda and influence Research & Development (R&D) direction and support.	National Platform; MBE-KTN.	By September 2008
Low Impact Building Innovation Platform - 1 st stage – the development of collaborative R&D and Design challenge competitions. 2 nd stage activities will develop demonstration and procurement opportunities.	TSB	Commenced in May 2008. Initial activity to 2011
To ensure the Knowledge Transfer Network attracts a critical mass of construction businesses, and identifies areas where it has added value with members successfully exploiting new technologies and techniques including learning from overseas and other industries.	TSB and MBE-KTN Consortium	to Summer 2009
NESTA ⁵⁶ to create a new annual innovation index to "measure British innovation in the round".	NESTA	Pilot published 2009
Develop a third phase of the Sustainable Urban Environment Research Programme ⁵³ .	Engineering & Physical Sciences Research Council (EPSRC)	2008
Eco-towns initiative ⁵⁴ . Creating 10 new socially, economic and environmentally sustainable (zero-carbon) new settlements of up to 20,000 homes.	Department for Communities and Local Government (CLG) & Local Authorities	2016 (up to five Eco-Towns) 2020 (10 expected)
The Carbon Challenge Programme ^{57a} will help accelerate the home building industry's response to climate change by fast-tracking the creation of a number of new zero carbon communities initially on EP owned sites which will meet the zero carbon, water, waste and other targets of Code level 6.	English Partnerships (EP)	2009 (first completed units). 2011 (First completed development)
Ensure UK co-develops relevant research studies and co-ordinates collaborative R&D support on sustainable construction with partners in the proposed new European Construction Research Area network: ERACOBUILD.	TSB, BERR	Autumn 2008 to Autumn 2011

53 www.tinyurl.com/6lbtxd

54 Companies may commit to higher and earlier targets than the national target for 2012. The Construction Waste Commitment includes

setting procurement requirements for good practice and measuring and reporting performance.

55 www.tinyurl.com/5dvelg

Measurement and Reporting

Ongoing indications of the state of innovation will be gauged by the biennial DIUS Community Innovation Survey, and the TSB, Regional Development Agencies (RDAs) and European Commission statistics on R&D grant awards.

A desire for better indicators of the state of innovation in the sector will be explored in the context of the DIUS and NESTA⁵⁶ - led work to develop an innovation index progress on which will be reported in the first annual innovation report to be published in autumn 2008.

Future Work

- The European Union's Lead Markets Initiative⁵⁷ on sustainable construction (one of six pilot markets chosen), which aims to influence and promote demand for the supply of innovative products and services, through reviewing regulation, procurement and standards. The Comité Européen de Normalisation (CEN) has established a Working Group under the aegis of BSI, with the task to carry out an inventory of existing standards to identify possible further contributions to the initiative.
- The Foresight project (sponsored by DIUS, CLG, Defra and BERR) on "Sustainable Energy Management and the Built Environment" which will report in autumn 2008.
- The Government response⁵⁸ to the Commission for Environmental Markets and Economic Performance report⁶⁰ undertook to examine the product approvals regime for innovative products in the construction sector to understand better the barriers to introducing innovative, sustainable products.
- The Energy Technologies Institute⁵⁹, with a focus on supporting development programmes contributing to low carbon, secure energy supplies, may also consider support for projects on improving energy efficiency of the existing build stock in the context of its proposed work programme on Energy Efficiency in Domestic and Commercial Buildings.

⁵⁶ National Endowment for Science, Technology and the Arts: www.nesta.org.uk

⁵⁷ www.tinyurl.com/4qp8e3

^{57a} www.tinyurl.com/3jpsen

⁵⁸ www.tinyurl.com/553b5b

⁵⁹ www.energytechnologies.co.uk

6 People

OVERARCHING TARGET:

An increase in organisations committing to a planned approach to training (e.g. Skills Pledges; training plans; Investors in People or other business support tools; Continuous Professional Development (CPD); life long learning).

The various built environment Sector Skills Councils (SSCs) are at different stages in developing their Sector Skills Agreements, and developing strategies in this area. The members of the Built Environment Skills Alliance (BESA) have agreed to embrace the principle of the approach (driving a training culture) set out here. For instance ConstructionSkills⁶⁰ (building / civil engineering) aims to increase the number of organisations adopting training plans or committing to Investors in People (or other business support tools) to 6,400 by 2010 and 9,400 by 2015. The aim is that other sectors' SSCs, or industry training bodies would be added, with their associated targets, as soon as possible.

Reduce the incidence rate of fatal and major injury accidents by 10% year on year from 2000 levels.

Context

The training and development scene for the built environment is characterised by a large number of players: various Sector Skills Councils (SSCs); bodies such as the Academy for Sustainable Communities (ASC)⁶¹ and the Green Building Council (UK - GBC)⁶²; and training providers. The SSCs have developed, or are developing, their Sector Skills Agreements and other high level skills strategies. The ASC is a centre of excellence working at a strategic level, supporting the construction sector to deliver sustainable communities.

A number of responses to the consultation on the draft Strategy highlighted training supply aspects, such as the perceived need for more accessible training provision in particular areas. Others focused on the need to encourage customer demand for skills development among both companies and individuals. Unless demand is nurtured, training products and services will not be used, and the knowledge/skills base will not develop.

Although suppliers may think a training need exists, it is not always clear that firms or individuals want a specific training product or service. This is why it is so important that the skills system is shaped around the needs of employers.

Fostering demand by promoting and instilling a culture of training and life long learning / continuous professional development, is at the heart of this Strategy. This is intentionally a high level, generic approach, which gives scope on which a wide range of sustainability-specific skills organisations can build. Championing effective brokerage mechanisms, and working with the training/development supply side to create a better understanding of the benefits of training/development, especially sustainability aspects, will be important. Work to drive improved health and safety in the industry will also feature.

Generating demand and uptake for learning and training will require increased awareness, understanding and engagement at community and individual levels, particularly among children and young people. This should generate a supply of motivated people interested in further training and development.

61 www.ascskills.org.uk

62 www.ukgbc.org

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
Net increase of 230,000 qualified people recruited and trained in the industry compared with 2006	Strategic Forum	2010 - from Annual Labour Force Survey
Net increase of 260,000 qualified people recruited and trained in the industry compared with 2006	Strategic Forum	2012 - from Annual Labour Force Survey
To achieve 13,500 apprenticeship completions in England, Wales and Scotland by 2010 and to increase this to 18,700 a year by 2012	Strategic Forum	2012 - Information from CS Managing Agency.
Promotion of Investors in People, other business support tools, and Skills Pledge through Company Development Advisors (ConstructionSkills), and CS central marketing.	ConstructionSkills	2008 and continuing
Development and promotion of sector-specific Skills Pledge	Proskills	August 2008
Development of Action Plan for driving a training culture in the building products sector.	Proskills	August 2008
Promotion of the value of CPD, and facilitating access to suitable developmental training on sustainability aspects.	Construction Industry Council, professional institutions, BERR.	2008 and continuing
Influencing the development of the Construction Qualifications Strategy (CQS). The CQS Action Plan includes: Strategy Strand 20: Identify and implement strategies to support cross cutting themes important to the development of a sustainable, inclusive construction industry.	ConstructionSkills	2008 and continuing

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
Fully trained, qualified and competent workforce on all projects	Strategic Forum	2010 - Annual Labour Force Survey and trade association site audits
Reduce the incidence rate of fatal and major injury accidents by 10% year on year from 2000 levels	Strategic Forum	2010 - Information ⁶⁴ provided by HSE
Reduce the incidence rate of cases of work-related ill health by 20% from 2000 levels	Strategic Forum	2010 - Constructing Better Health, HSE Surveys
50% increase in projects offering a route to Occupational Health support from 2008	Strategic Forum	2012 - Constructing Better Health, HSE Surveys
10% year on year reduction in the incidence rate of fatal and major injuries from 2010 levels	Strategic Forum	2012 - Information provided by HSE
30% increase from 2007 level of micro-SMEs (Small and Medium Sized Enterprises) and SMEs taking up Health & Safety training and education at an organisational level	Strategic Forum	2012 - Surveys undertaken by ConstructionSkills, Working Well Together, Constructing Excellence, HSE

63 Universities and Colleges Admission Service; and the Higher Education Funding Council for England.

64 Health and Safety Executive

Measurement and Reporting

The main built environment SSCs will organise and maintain systems to track progress against targets as part of their ongoing role. Reporting will be done annually.

Future Work

- Work in this area is part of the wider Government Skills Strategy, World Class Skills⁶⁵.
- There is a programme of ongoing work being pursued by HSE and the industry to improve health and safety in construction.
- Activities relevant to developing sustainable communities are covered in the programmes and strategies of the Academy for Sustainable Communities (ASC). It is important that the SSCs and the ASC continue to work together on this agenda.

- Additional specific interventions which will support the overall agenda are likely to emerge over time. Some of the ideas that emerged from the consultation on the draft Strategy will be helpful in this respect. The role of the Regional Development Agencies will be crucial, and they will be closely involved in the implementation of this Strategy. Many of the skills issues are seen in other industry sectors, and in some cases there may be shared solutions.
- As part of the National Skills Academy for Construction activity based on the Olympic site, the Olympic Delivery Authority (ODA) will be piloting a way of linking up the support offered through Learning and Skills Council's Train to Gain and Employability funds and DWP⁶⁶ City Strategy Pathfinder funding.
- SummitSkills⁶⁷, industry, CLG and Defra will take forward work on the development of codes and standards for the training of plumbers on the installation of water-efficiency systems.
- SummitSkills, industry, CLG and Defra will take forward work concerning the development of training programmes for Facilities Managers and plumbers on the need for, and operation of water-efficient buildings.

⁶⁵ World Class Skills: implementing the Leitch Review of Skills in England, July 2007, DIUS, see: www.tinyurl.com/66gz4u

⁶⁶ Department for Work and Pensions

⁶⁷ www.summitskills.org.uk

7 Better Regulation

OVERARCHING TARGET:

A 25% reduction in the administrative burdens affecting the private and third sectors, and a 30% reduction in those affecting the public sector by 2010.

27

Context

The Government is committed to cutting red tape for business, the public and voluntary sectors. Proportionate, risk based regulation can help provide protection and deliver significant benefits for businesses. Better Regulation is about striking the right balance between regulation and protection without disproportionately increasing costs or deterring compliance.

The need to present policy and legislative requirements coherently is integral to the Better Regulation agenda. The Climate Change Bill currently (June 2008) before Parliament will provide, amongst other things, a clear framework for the UK to achieve its long-term goals of reducing carbon dioxide emissions and to ensure that steps are taken towards adapting to the impact of climate change.

The Better Regulation agenda is also being taken forward by the Environment Agency, which is working with stakeholders to develop a Construction Sector Partnership Plan. This will be a collaborative document that identifies jointly agreed environmental priorities with contractors in the sector and voluntary mechanisms to promote better environmental outcomes. This will complement existing initiatives within the sector and be the subject of consultation during the summer of 2008.

Given the role that Building Regulations⁶⁸ play in setting requirements for standards of construction, and improving compliance, Government is:

- working to improve the building control system in England and Wales. A consultation was published in March 2008⁶⁹;
- looking at ways to make the Building Regulations⁶⁸ system deliver better compliance, with reduced burdens to industry;
- planning a degree of certainty for the construction industry by introducing, subject to consultation, a cycle of three yearly reviews of Building Regulations⁶⁸, rather than the current continual changes, which will help industry's forward planning.

68 In the context of this Strategy, references to Building Regulations apply to England and Wales.

69 The Future of Building Control: Consultation Paper. Published by Department for Communities and Local Government, March 2008, see: www.tinyurl.com/3bsk89

Actions and Deliverables

The Actions & Deliverables required to meet this overarching target are reflected in individual Government Departmental plans⁷⁰. New construction-specific initiatives have not been introduced and so a table of Actions and Deliverables has not been presented in this chapter.

Future Work

- Any new policy will have risk based evidence to support its implementation, and will be informed by consultation and Impact Assessment. Any new regulation will be proportionate, transparent, accountable, consistent and targeted, and will not produce perverse incentives or unintended consequences.
- Following a commitment in the recently published Enterprise Strategy, Enterprise: unlocking the UK's talent⁷¹ all new regulatory requirements will be examined to assess whether small firms can be exempted from or be subject to simplified enforcement. If this is not possible for legal or policy reasons departments will seek to work with small firms to design specific approaches for them. The Government will also consult on the introduction of a new system of "regulatory budgets" for departments which will provide a means of controlling the totality of new costs from the regulation Government introduces over a period.
- Regulation will be supported by high quality and timely guidance, and effective communication of change.
- Regular Government reviews will be conducted to examine how to improve compliance, maintain safeguards and keep people well-informed, while reducing costs and administration wherever possible.

70 www.tinyurl.com/5g2zr4

71 www.tinyurl.com/2mhpkp

8 Climate Change Mitigation

OVERARCHING TARGET:

Reducing total UK carbon dioxide (CO₂) emissions by at least 60% on 1990 levels by 2050 and by at least 26% by 2020. Within this, Government has already set out its policy that new homes will be zero carbon from 2016, and an ambition that new schools, public sector non-domestic buildings and other non-domestic buildings will be zero carbon from 2016, 2018 and 2019 respectively.

30

Context

In response to the threat of climate change, the Government has already committed to a number of actions including setting legally binding CO₂ reduction targets, and will introduce five year carbon budgets through the Climate Change Bill⁷². Other actions are included in the Planning White Paper⁷³ and the Energy White Paper⁷⁴ to be taken forward by the Planning Reform and Energy Bills respectively, the Housing Green Paper Policy package⁷⁵ and Planning Policy Statements (PPS)⁷⁶. The PPS Climate Change, as a supplement to PPS1: Delivering Sustainable Development, is of particular significance in ensuring that tackling climate change becomes a primary objective of the planning system.

72 www.tinyurl.com/25j33o

73 www.tinyurl.com/yukna5

74 www.tinyurl.com/594gr3

75 www.tinyurl.com/2gsgoo

76 www.tinyurl.com/ydw9ch

There are also the commitments to Building Regulations⁷⁰ and the Code for Sustainable Homes⁴⁶ to deliver increasing levels of energy efficiency of homes over the coming decade, with the target for all new homes to be zero carbon from 2016. It is also the Government's ambition that all new public sector buildings will be zero carbon from 2018, and all new non-domestic buildings will be zero carbon from 2019¹⁴. The feasibility of these ambitions is currently being explored and will be subject to consultation later in 2008.

The Department for Innovation, Universities and Skills (DIUS) sponsored Learning and Skills Council has announced that all new college buildings will be zero carbon by 2016⁷⁷. DIUS has also announced over £30m of capital funding for the Higher Education Funding Council for England (HEFCE) in the 2008 grant letter that will enable them to launch their Revolving Green Fund - supporting invest-to-save projects to make universities more energy efficient. And the Department for Children, Schools and Families (DCSF) is establishing a task force to determine whether new school buildings could be zero carbon from 2016. That task force will release its first report by the end of 2008.

All products used in the construction industry have embodied environmental impacts - whether from raw materials, manufacture or transportation. The amount of embodied carbon is generally far less than the energy consumed during the lifetime of the building or infrastructure project. Nevertheless, embodied carbon is addressed in the BRE Green Guide to Specification⁷⁸ and the EU Emissions Trading Scheme encourages materials manufacturers to reduce emissions.

Existing Buildings

In terms of the built environment, it is the existing building stock that accounts for by far the most carbon emissions and where the greatest opportunities for savings can be found. Buildings that pre-date 1985, when energy efficiency was first introduced to the Regulations, are on average particularly energy inefficient.

Given that around two thirds of the building stock that will still be standing in 2050 has already been built, improving the energy efficiency of the existing stock will be a critical element in delivering the Government's long term carbon emission reduction targets.

Many of the technologies that are needed to make significant energy savings in the existing stock are already cost-effective and widely available. The challenge for Government and industry is to put in place policies, programmes and products that will roll out those technologies in a way that will take us towards our long term carbon reduction targets.

77 www.tinyurl.com/4jfe4w

78 Further details on The BRE Green Guide to Specification can be found at: www.tinyurl.com/6jx4lu

The Government has consistently recognized this challenge and has in place a wide range of mutually reinforcing policies and programmes which are designed to tackle emissions from the existing stock. This policy framework comprises of:

- minimum standards for building work on existing homes;
- action to inform, support and incentivise those who are prepared/able to change their behaviour and/or take action in their own homes;
- obligations on energy suppliers to realise energy and carbon savings from their customers;
- financial incentives to tackle issues such as split incentives, encourage innovation and improve the uptake of low and zero carbon technologies;
- action to ensure that the most vulnerable in society - those who are least likely to be able to improve their own homes and those who are most likely to suffer from fuel poverty - are assisted.

Specific schemes include the introduction of energy efficiency requirements for thermal elements into the Building Regulations⁷⁰ and key programmes such as the Carbon Emissions Reduction Target (CERT)⁷⁹, the introduction of Energy Performance Certificates⁸⁰, the Energy Saving Trust's Act on CO₂ advice line⁸¹,

Warm Front⁸² and Decent Homes⁸³. These are expected to deliver reductions in emissions from existing homes of around 23MtCO₂ by 2020 and represent a total investment by Government and energy companies of over £1 billion a year.

The above policies mean that carbon reductions from existing buildings are on a trajectory consistent with our 2020 targets. However, Government fully recognizes the importance of a strategic approach that continues to deliver savings beyond 2020. That is why, for example, Government is exploring policies which go beyond current mainstream programmes – for example the green neighbourhoods programme⁸⁴ announced by Defra, which will demonstrate what can be achieved in 'hard to treat' homes at a neighbourhood scale. Government will also continue to look closely at what can be done to make best use of levers such as Energy Performance Certificates⁸² to improve the most inefficient homes. This includes difficult to treat and hard to target homes, including those in the rented sector.

The Government will continue to analyse such issues in preparing its response to the Climate Change Committee's carbon budgets by spring 2009 and will announce any additional policies and programmes in this area in light of these budgets.

79 www.tinyurl.com/26sm48

80 www.tinyurl.com/36rgk5

81 www.energysavingtrust.org.uk

82 www.energysavingtrust.org.uk

83 www.tinyurl.com/5banqt

84 www.tinyurl.com/6grq8l

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
All new homes to be zero carbon from 2016, with Building Regulations ⁷⁰ locking in improvements in 2010 and 2013 ⁸⁷ .	CLG	2016
Consultation on programme and timetable for achieving zero carbon non-domestic buildings by 2019.	CLG	Summer 2008
Establish a task force to establish whether new school buildings could be zero carbon from 2016.	DCSF	2008
The Carbon Reduction Commitment will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations by 1.1 million tonnes of Carbon (MtC) per year by 2020.	Defra	2010
Departments to increase their energy efficiency per square metre by 15% by 2010 and 30% by 2020 ⁸⁸ .	All Government Departments (SDC monitoring ⁸⁹)	2010
Reduce carbon emissions on the central Government office estate by 12.5% by 2010/11 and 30% by 2020 relative to 1999/2000 levels ²⁸ .	All Government Departments (SDC monitoring)	2010/11
Central Government's office estate to be carbon neutral by 2012 ²⁸ .	All Government Departments (SDC monitoring)	2012
15% reduction in carbon emissions from construction processes and associated transport compared to 2008 levels.	Strategic Forum	2012 - Aim to establish mechanism for measurement

85 www.tinyurl.com/2gsgoo

86 UK government Sustainable Procurement Action Plan, 2007 See: www.tinyurl.com/yp9dsc

87 Sustainable Development Commission is monitoring via annual Sustainable Development in Government Reports

Measurement and Reporting

The Committee on Climate Change:

a new independent, expert body being established by the Climate Change Bill will advise the Government on the optimum pathway to the 2050 target. The Committee will report annually to Parliament on progress towards budgets and targets. The Committee is currently (June 2008) operating in “shadow” form ahead of Royal Assent of the Bill and has begun work on the statutory review of the 2050 target and will report by 1 December 2008.

The Sustainable Development

Commission: provides an independent assessment of the performance of Government departments against the targets for the Sustainable Operations of the Government Estate⁸⁸, and publishes annual Sustainable Development in Government Reports⁸⁹. The latest report was published on 18th March 2008⁹⁰.

Future Work

The Committee on Climate Change is required to report its findings on the review of the 2050 target and provide advice on the level of the first three carbon budgets (covering the period 2008-2022) by 1 December 2008. The Government will announce the carbon budgets alongside Budget 2009, together with proposals and policies for meeting them.

In light of these requirements, a Government wide project has been set up to provide Ministers with the advice they require to set and meet the first three carbon budgets. This will include consideration of:

- The technical potential for the cost effective abatement across a range of sectors;
- Possible budget scenarios and gap analysis;
- Further policies and measures for reducing emissions; and
- Carbon accounting and budget management.

88 www.tinyurl.com/4jt6xe

89 www.tinyurl.com/3lbu5a

90 www.tinyurl.com/5zlo84

Government will be consulting later in 2008 on options for improving the energy performance of new non-domestic buildings. This follows the Chancellor's announcement in the 2008 Budget that the Government's ambition is to achieve zero carbon new non-domestic buildings by 2019.

Government will be consulting early in 2009 on the amendments to Building Regulations⁷⁰ necessary to deliver the next steps in improving energy efficiency improvements from all buildings in 2010.

Government is considering what further measures may be needed to reduce the carbon emissions from existing buildings as part of its wider strategies on improving energy efficiency generally, and for renewable energy and renewable and low carbon heat. These include a range of ideas which industry has been proposing and will cover emissions from both domestic and non-domestic buildings.

As part of the consideration of existing buildings, Government will look at ways in which the energy efficiency of existing non-domestic buildings might be improved. During 2008 English Heritage is launching a research project to measure the energy use and embodied energy of Victorian terraced homes and to lead the enhanced advice on the cost-effectiveness of various energy-saving measures.

Government will be publishing a consultation later in 2008 on the rules that should underpin the zero carbon definition for new homes.

The Carbon Reduction Commitment (CRC), beginning in 2010, will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations (including supermarkets, hotel chains, all Government departments, large Local Authorities) by at least 1.1 MtC / year by 2020. This commitment will affect the construction sector directly (by targeting emissions from construction companies whose emissions are large enough to be included in the CRC) and indirectly (by influencing the demand for lower carbon buildings by CRC participants). The industry will have the opportunity to comment on the proposed regulations as part of a consultation later in 2008⁹¹.

91 For full details see: www.tinyurl.com/3nb69c

9 Climate Change Adaptation

OVERARCHING TARGET:

To develop a robust approach to adaptation to climate change, shared across Government. (Comprehensive Spending Review 2007, Public Service Agreement (PSA) 27: Tackling Climate Change)⁹².

36

Context

In the UK, we can expect future changes to seasonal rainfall (wetter winters and drier summers), higher temperatures, rising sea levels and coastal erosion. It is also expected that the UK is likely to experience increased extreme events, such as high winds, heavy prolonged rainfall, flooding, drought and heat waves⁹³. All of these have direct impacts – but also secondary ones, such as the stability and moisture of soils.

⁹² www.tinyurl.com/44fuml

⁹³ www.tinyurl.com/42nzuj

It is essential that we build the potential for adaptation into design and construction methods – whether this is new development, refurbishment or regeneration. Green Infrastructure⁹⁴, for instance, has a key role to play in ensuring developments are resilient and adaptable to the likely impacts of climate change. Government is helping to shape places resilient to the impact of climate change⁹⁵ and is also looking at what levers might be used to provide greater adaptability when buildings are built or altered. This includes looking at ventilation and limiting the effects of solar gain alongside energy efficiency in Building Regulations⁷⁰, to avoid buildings with higher levels of energy efficiency overheating in our warming climate. Government is also improving the standards of efficiency of water fittings through Water Fittings Regulations, Building Regulations⁷⁰ and the Code for Sustainable Homes⁴⁶.

Delivery of adaptable developments and urban environments, including the refurbishment of existing buildings and infrastructure, will require improved skills and multi-disciplinary working. The Sector Skills Councils and the appropriate professional bodies will therefore be working with industry and skills providers to ensure that both new entrants and existing professionals have developed the skills necessary to respond to climate change and keep pace with policy and technology advancements.

Government has issued PPS *Climate Change* as a supplement to PPS1: *Delivering Sustainable Development* to ensure that tackling climate change becomes a primary objective of the planning system, helping to speed up the shift to renewable and low-carbon energy, supporting its ambitions on zero carbon development and helping to shape places resilient to the impact of climate change. PPS25 *Development and Flood Risk* helps planners to avoid, manage and reduce future flood risk to communities through the location, layout and design of development. There is draft practice guidance supporting the PPS on climate change⁹⁶ and a Practice Guide supporting PPS25.

Through the Climate Change Bill⁹⁷, the Government is putting in place a national framework for tackling climate change impacts and is continuing to fund research in this area – notably through the Hadley Centre and UK Climate Impacts Programme⁹⁸.

94 www.greeninfrastructure.co.uk

95 www.tinyurl.com/ypdd2y

96 www.tinyurl.com/552n3q

97 www.tinyurl.com/25j33o

98 www.tinyurl.com/6fde79

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
Adaptation Policy Framework: National Policy Framework.	Defra/Government	2008
National Programme on Adaptation.	Defra/Government	2011
UK Risk Assessment.	Defra/Government	2011
Regional spatial and Economic strategies to take account of adaptation.	Regional Planning Bodies and Regional Development Agencies	ongoing
Reviews of Building Regulations ⁷⁰ which will include consideration of impacts such as temperature change and flooding.	CLG	Ongoing, periodic reviews planned for every three years
Review of water fittings Regulations to maximize water efficiency	Defra	2009

Measurement and Reporting

A range of measures is in place to report on the actions and deliverables. These include the Local Government Performance Framework⁹⁹, scrutiny by the Committee on Climate Change and the assessment, led by Defra, of UK climate change risks, which is reported to Parliament. There is also the biannual reporting (annual report and Autumn Performance Report) led by Defra on the Public Service Agreement (PSA) target on Climate Change¹⁰⁰.

⁹⁹ www.tinyurl.com/4l2xmf

¹⁰⁰ www.tinyurl.com/4o54p2

Future Work

The Government's programme on improving the knowledge of climate change and its impacts is developing, and it is an issue that the Government takes seriously. It is vital that other stakeholder organisations – including trade and professional bodies – are properly engaged and recognize their roles and responsibilities and the part they can all play in this. Many have begun this process – others need to develop their understanding.

For the Government's part:

- The UK Climate Impacts Programme 08 is due to be available in November 2008. This will help organisations adapt to inevitable climate change;
- The Government will be publishing the Adaptation Policy Framework document once the Climate Change Bill's provisions are confirmed;
- The Climate Change Bill will allow for a statutory National Risk Assessment to be developed, and a programme of action flowing from this;
- Government is also looking at what opportunities might exist to provide greater resilience and resistance to climate change impacts, such as flooding, when buildings are built or altered, e.g. through Building Regulations⁷⁰;
- Within the context of delivering the Government's Strategy for Trees, Woods and Forests, the Forestry Commission will continue to develop the contribution which trees, woods and forests can make to sustainable housing growth, including climate change adaptation;
- Through the publication of Future Water¹⁰¹: the Government's water Strategy for England, the Government is placing climate change adaptation at the heart of water policy development;
- The Government is developing a portfolio of possible options for facilitating the adoption of sustainable flood and coastal erosion risk management approaches to enable communities to adapt to both short term and longer term changes, working with natural processes where possible.

¹⁰¹ Future Water, the Government's water Strategy for England, Defra, February 2008, see: www.tinyurl.com/ynk96x for further details

10

Water

OVERARCHING TARGET:

To assist with the Future Water¹⁰¹ vision to reduce per capita consumption of water in the home through cost effective measures, to an average of 130 litres per person per day by 2030, or possibly even 120 litres per person per day depending on new technological developments and innovation.

40

Context

Future Water, the Government's Water Strategy for England¹⁰¹ was published in February 2008 and sets out the Government's vision for the water sector by 2030. Future Water maps out how the above overarching target of reducing domestic water usage to 130 litres per person per day, can be achieved from a current estimate of 150 litres of water used by every person in Britain per day¹⁰².

¹⁰² See page 14 of the OFWAT 2006/07 Security of Supply report
See: www.tinyurl.com/5dkls9

Household water demand accounts for more than half of all public water supply use in England and Wales, and many of the new homes to be built in the next decades are in areas currently designated as water-stressed; hence, encouraging efficient water use in the home is crucial. The Government is introducing Building Regulations⁷⁰ to improve the water efficiency of new homes from April 2009. This will require a whole building standard of 125 litres per person per day. It has also integrated water usage targets into the Code for Sustainable Homes⁴⁶ and will be working to encourage wider uptake of the Code over the coming years¹⁰³.

One method to encourage households to save water is to install a water meter. Changes to legislation in 2007 will allow companies in areas of serious water stress to install meters in households, where there is a resource case to do so. Government will be commissioning an independent review of metering and water charging that will look at how to progress metering beyond current arrangements¹⁰⁴.

The Government as client is leading the way. From April 2008, water use in all new domestic property financed by Government must reach level three of the Code for Sustainable Homes⁴⁶, equal to 105 litres per person per day. This will allow flexibility about the choice of individual water fittings whilst still enabling the achievement of an overall performance level for the home.

The Water Saving Group¹⁰⁵, chaired by the Minister for the Environment, has led the work to reduce the demand for water in households in England. Established in 2005, the group brings together key water industry organisations in order to combine their skills and experience to work together on a package of measures to promote the efficient use of water in households. The Group is currently (2008) reviewing water efficiency measures in the industrial and commercial sector, and is also working with BSI and others to develop a code of practice for non-potable water use in rainwater harvesting systems.

41

103 The Code for Sustainable Homes, Setting the standard in sustainability for new homes, Communities and Local Government, February 2008. Available at: www.tinyurl.com/25qz4o

104 Paragraph 28, Page 12, Future Water, the Government's water Strategy for England, Defra, February 2008, www.tinyurl.com/ynk96x

105 See www.tinyurl.com/5vqse8 for further details of this group

The Department for Communities and Local Government (CLG) is currently undertaking a study into the water efficiency of new non-domestic buildings, including the possibilities for whole building performance standards for non-domestic buildings.

Over the coming year (2008/9), Defra will consult on revisions to the Water Supply (Water Fittings) Regulations. These regulations set out the maximum permitted water usage of toilets, urinals, washing machines and dishwashers. The review will consider enforcement issues, advances in technical standards and water conservation, and the case for setting new performance standards for key water using fittings. Subject to consultation, any revised regulations will be issued in 2009. These will work alongside the new Building Regulations for water efficiency of new homes by discouraging the replacement of water efficient fittings installed in new homes by ones that use more water, and will work to improve water efficiency in existing and non-domestic buildings.

In due course, there may be European standards and labelling schemes for some categories of water using products, as the European Commission develops proposals to take forward the measures in its Communication on Water Scarcity and Drought¹⁰⁶. Defra will continue to work with the Commission and other Member States on the proposals, including the establishment of minimum water efficiency standards for products such as dishwashers and washing machines via the Framework Directive for the Eco-design for Energy Using Products¹⁰⁷. Defra will encourage the Commission to do the same for other water using products within its wider proposals for eco-design requirements under the Integrated Product Policy Framework¹⁰⁸.

In early 2008, Defra completed a consultation on improving surface water drainage, which incorporated a discussion regarding the future development of Sustainable Drainage Systems (SUDS). The uncertainty surrounding the responsibility for the ownership and long term maintenance of SUDS constitutes one of the key barriers to their implementation on a wider scale. The consultation considered potential options for resolving this uncertainty. Defra will publish a summary of the responses to the consultation in July 2008 and a Government response is anticipated later in the year.

¹⁰⁶ www.tinyurl.com/4tjeao

¹⁰⁷ www.tinyurl.com/ya9543

¹⁰⁸ See: www.tinyurl.com/5g5jor for details of this framework

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/deliverable	Timescale
All new homes built with English Partnerships and Housing Corporation support to meet Code for Sustainable Homes Level 3 standards for water efficiency (from April 2008), and (subject to funding) Level 4 standards from 2011 (105 litres per person per day).	English Partnerships, Housing Corporation ³⁸ and CLG	From April 2010
Development of standards for non-potable water use.	Water Saving Group/ BSI	Standard in place for rainwater harvesting systems by the end of 2008.
Defra will review the Water Supply (Water Fittings) Regulations 1999 in 2008 with a view to setting new performance standards for key fittings.	Defra	2009
A reduction in water consumption to an average of 3 cubic metres per person per year for all new office builds or major office refurbishments on the Government Estate.	All Government Departments (SDC monitoring ⁸⁹)	Ongoing
Reduce water consumption by 25% on the office and non-office estate by 2020 relative to 2004/5 levels.	All Government Departments (SDC monitoring)	2020
Water usage in the manufacturing and construction phase to be reduced by 20% compared to 2008 usage.	Strategic Forum	2012 - Sample surveys of water usage measured by water metering
Introduction of changes to Building Regulation to improve the water efficiency of new homes, with a whole building performance standard of 125 litres per person per day.	CLG	From 2009

Measurement and Reporting

The Government's progress towards the targets regarding water efficiency in its own estate is monitored by the Sustainable Development Commission (SDC).

Progress towards the ambition to reduce per capita consumption to an average of 130 litres per person per day by 2030 will be tracked through the information water companies submit annually to Ofwat, which is published in Ofwat's annual Security of Supply report¹⁰⁹.

Future Work

- As announced in Future Water¹⁰¹, the Government will commission an independent review to advise on how metering and charging should progress beyond the existing arrangements.
- Defra will respond to the consultation on SUDS by end of 2008.
- CLG will conduct research and analysis looking at how a whole building performance standard might be used and improve water efficiency for non-domestic buildings.
- Defra will continue to work with the European Commission and other Member States on the proposals to establish minimum water efficiency standards for products such as dishwashers and washing machines, via the Framework Directive for the Eco-design for Energy Using Products.

¹⁰⁹ www.tinyurl.com/5e99q9

11

Biodiversity

OVERARCHING TARGET:

That the conservation and enhancement of biodiversity within and around construction sites is considered throughout all stages of a development.

45

Context

The UK Biodiversity Action Plan was published in 1994 as part of the UK Government's response to the Convention on Biological Diversity¹¹⁰ signed at Rio de Janeiro in 1992. Since the Rio de Janeiro meeting, Heads of State at the United Nations World Summit on Sustainable Development in 2002 committed themselves to achieve by 2010 a significant reduction in the current rate of biodiversity loss. The European Union has gone further, agreeing in 2001 that biodiversity decline should be halted with the aim of reaching this objective by 2010.

¹¹⁰ See: www.cbd.int for further details

From a public policy point of view the planning system is an important tool in biodiversity conservation. Planning authorities have the power to prevent developments that are damaging to biodiversity, to secure biodiversity enhancement through attaching conditions or to defer decisions until more information is available. Additionally, planning authorities have a statutory duty to “further” or “have regard to” the conservation of biodiversity in the exercise of their planning functions. This includes an obligation to consider protected species, protected sites and species and habitats of primary importance.

In England, Planning Policy Statement 9¹¹¹ sets out the Government’s policy on protection of biodiversity through the planning system. It is against this background that the construction industry has set the above target.

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/ deliverable	Timescale
All construction projects over £1m to have biodiversity surveys carried out and necessary actions instigated.	Strategic Forum	2012
Biodiversity Toolkit for planners and local biodiversity officers.	Defra/CLG/ALGE ¹¹⁴ and Statutory nature conservation agencies	Summer 2008
Set up a cross-sectoral workshop and task group to develop a roadmap for the industry to maintain and enhance biodiversity in support of the target.	UK Green Building Council	End of 2008

¹¹¹ www.tinyurl.com/65nyfz

¹¹² Association of Local Government Ecologists

Measurement and Reporting

The overarching target will be measured through a sample survey of projects.

The UK Green Building Council's cross-sectoral workshop will develop a roadmap and will report on progress by the end of 2008.

Future Work

The responses to the consultation on the draft Strategy highlighted a number of areas where industry indicated that further work should be undertaken to support the enhancement of biodiversity. In addition, the joint BERR/ Defra Biodiversity in Construction workshop of November 2007 identified some ideas and actions that the industry could take to raise awareness and improve the ecological impact of construction. The UK Green Building Council will take responsibility for setting up a cross-sectoral industry workshop and manage a time-limited task group to develop a roadmap for the industry and its clients to maintain and enhance the biodiversity of the built environment in support of the above target.

Examples of key themes are:

- The role of Planning Guidance in implementing Green Infrastructure¹¹³ initiatives;
- The role of training throughout the supply chain;
- The development of simple guidance and quick wins providing clarity and coherence to support the industry.

Furthermore, CIRIA intend¹¹⁴ to develop guidance on enhancement of biodiversity within large civil infrastructure projects. This will provide those involved in large civil infrastructure projects with the techniques and opportunities for biodiversity conservation and enhancement.

As noted in the above table, the Association of Local Government Ecologists and the Planning Portal¹¹⁵ are collaborating on a web-based Biodiversity Toolkit for planners and local biodiversity officers. The toolkit will offer guidance and advice on handling forward planning and development control matters in relation to biodiversity. The guidance will focus on species and habitats and link to key legislation and policy as well as other third party information resources. The toolkit will be delivered through the Planning Portal¹¹⁷ and will be available from summer 2008.

113 www.greeninfrastructure.co.uk

114 www.tinyurl.com/4qe2ca

115 www.planningportal.gov.uk



12

Waste

48

OVERARCHING TARGET:

By 2012, a 50% reduction of construction, demolition and excavation (CD&E) waste to landfill compared to 2008.

This 2012 target, agreed by the Strategic Forum for Construction, does not include aggregates used for backfilling quarries, site restoration or legitimately spread on exempt sites. For limited types of CD&E waste, landfill is likely to remain the least environmentally damaging option. Further work over the next few years on, for example, life cycle assessments, increased capacity and alternative disposal options, will allow industry to assess better how much more ambitious it could be beyond 2012 and how close we might get to ending the disposal of CD&E waste in landfill in the longer-term.

Context

The construction industry in England uses around 400 million tonnes of materials every year. Around 90 million tonnes of CD&E inert waste is produced, with half of this recycled as aggregates, including at the site of production. Estimates suggest at least a further 20 million tonnes of non-inert and mixed CD&E waste is also produced annually. The overarching target focuses on the total amount of CD&E waste being disposed of via landfill, estimated at over 25 million tonnes a year in England. Work is underway via Defra's Waste Data Strategy¹¹⁶ to strengthen understanding of CD&E waste production, recovery and disposal. With data expected to be more robust in 2008 than previous years, this is taken as the baseline year for measuring progress towards the 2012 target.

Given the scale of the construction industry's resource use and the quantity of CD&E waste entering landfill, the Waste Strategy for England 2007¹¹⁷ identified construction waste as a priority sector for action. A number of fiscal and legislative tools are already driving up resource efficiency in the construction sector and driving down

waste production. These include the landfill tax, the standard rate of which for non-inert material will increase to £48/tonne in 2010/11, the aggregates levy which encourages the use of recycled rather than virgin materials, new legislation making Site Waste Management Plans (SWMPs) mandatory for construction projects in England worth over £300,000 and the Code for Sustainable Homes⁴⁶ against which ratings were made mandatory for all new homes from May 2008¹¹⁸.

In order to meet the challenging target of halving CD&E waste to landfill by 2012 (as a result of reduction, reuse, recycling and recovery) complementary action by industry will be needed through all elements of the supply chain. While the overarching target of halving waste to landfill may not automatically translate at a sector or individual business level, all of the actions detailed below will provide an important contribution to cutting CD&E waste to landfill. In addition, some companies have already set their own challenging waste targets based on a clearly demonstrated business case.

49

116 www.tinyurl.com/5w6a96

117 www.tinyurl.com/39rxgb

118 Implementing a SWMP is a mandatory element of the Code, and credits are available for waste reduction and recovery actions.

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/ deliverable	Timescale
Construction Waste Commitment: individual organisations commit to waste to landfill targets ¹¹⁹ at company level.	Waste & Resources Action Programme (WRAP), working with client and contractor sector bodies and Government Estate	Formal Launch in September 2008, then ongoing
Develop guidance on waste reduction for small builders.	National Federation of Builders (working with WRAP & Envirowise)	By 2009
Sector resource efficiency plans prepared and implemented by trade associations.	Construction Products Association*	Three begun by end 2008
Setting an overall target of diversion of demolition waste from landfill.	National Federation of Demolition Contractors*	By 2009
Extension of Plasterboard Voluntary Agreement to rest of the supply chain.	Construction Resources and Waste Platform and WRAP	By 2009
20% reduction in construction packaging waste.	Construction Products Association	By 2012

¹¹⁹ Companies may commit to higher and earlier targets than the national target for 2012. The Construction Waste Commitment includes setting procurement requirements for good practice and measuring and reporting performance.

Measurement and Reporting

Sector level organisations(*) will monitor delivery of actions for which they are responsible and progress against their own commitments and targets, collating aggregated data from individual businesses where appropriate. Similarly, WRAP will co-ordinate progress against the Construction Waste Commitment. Measurement of the overall volumes of CD&E waste going to landfill will be conducted by Defra, drawing on a range of available data sources including the CLG aggregates survey, landfill operator returns and other data streams identified in the Waste Data Hub Strategy¹²⁰.

Future Work

Even if all agreed actions are met, there will still be a large amount of CD&E waste arising from construction activities, with landfill likely to remain a necessary outlet for significant quantities of CD&E waste beyond 2012. Reducing these quantities will require an integrated supply chain approach which addresses both waste minimisation and recovery.

Defra, in conjunction with a new construction waste group representing all sectors of the industry along with WRAP and Envirowise, will look at the following areas for further work:

- incorporating waste minimisation principles into building design and throughout the supply chain;
- improving our knowledge base via life cycle assessments of construction products and encouraging them to be used efficiently;
- obtaining better waste data and evidence;
- developing and rolling out necessary tools; and
- improving take back or exchange opportunities for unwanted and waste materials.

120 www.tinyurl.com/5v8p8n

13

Materials

OVERARCHING TARGET:

That the materials used in construction have the least environmental and social impact as is feasible both socially and economically.

Context

The rapidly increasing demand for greener buildings provides both challenges and opportunities in relation to the materials used. Accurate, accessible and timely information on the environmental and social impact of using different materials is increasingly desired by designers, contractors and procurers. The 2006 Code for Sustainable Homes⁴⁶ awards credits based on the environmental impact of materials and for materials responsibly sourced¹²¹. The aim in doing so is to encourage the use of materials with lower environmental impacts over their lifecycle and to recognize and encourage the specification of responsibly sourced materials for basic building and finishing components.

¹²¹ A Responsible Sourcing Scheme is a documented set of criteria setting out the obligations of an organization in managing the supply of construction products in accordance with a set of agreed principles of sustainability.

As a result of significant work in the 1990s funded by Government, the Building Research establishment (BRE) and the manufacturing trades associations, developed a system for Environmental Profiling of construction products and common building elements (later incorporated into the BRE Green Guide to Specification⁸⁰). More recently, the surge in demand for greener construction products is stimulating the manufacturing sector to invest and innovate in the hope of capturing more market share as procurers adopt more sustainable procurement policies.

Government, through the policy of procuring only legal and sustainable timber and timber products has, for this material, altered the market demand and changed the behaviour of the timber trade. From the 1st of April 2009, all timber and timber products used on the Government estate must be from legal and sustainable sources or licensed under the EU Forest Law

Enforcement, Governance and Trade initiative¹²². Other material sectors are now beginning to think about establishing responsible sourcing schemes with input from relevant stakeholders and establishing performance levels.

There is now a growing industry emerging using renewable construction materials which in the right context, can deliver buildings with enhanced environmental properties – for example through performance in use (energy consumption, thermal properties, ease of maintenance) and at “end of life” (how the material is recycled, recovered or disposed). However, further work is needed to gain a better understanding of the overall impacts of using such materials - from the growing and processing of the raw materials, through to the decommissioning and disposal stages. Government is investing in this area through the Defra Renewables and Low Carbon programme in collaboration with BERR¹²³.

122 In Europe, CEN (TC350) has been mandated to develop voluntary standards to address the application of life cycle methodologies to the environmental performance assessment of construction products and buildings.

123 www.tinyurl.com/3s8fe4

A fuller understanding of the sustainability of materials entails consideration of a complex and interconnected set of environmental, economic and social factors. Considerable work is now underway through a variety of initiatives, both public and private, to develop tools to aid industry to lower its impact across a broader range of environmental and social issues. Particular emphasis has been placed on attempting to understand better which parts of the life cycle have the greatest impacts, and where and how interventions can be focused to improve the environmental and social performance of products and services.

As a pilot project, in collaboration with relevant industry partners, the Sustainable Products and Materials Division¹²⁴ within Defra, has begun work on three construction product roadmaps (plasterboard, window systems and toilets), among ten products being considered overall. The intention of the roadmaps is to collect evidence about impacts of the products across the full product lifecycle, to identify and prioritise any particular problems and then develop the most effective solutions for improving sustainability. The Progress Report on Sustainable Products and Materials, to be published by Defra in Summer 2008, will outline the work to date and discuss a vision of the future¹²⁵. Other tools are being developed by BRE and industry.

124 The Sustainable Products and Materials Division was established in September 2007. Its aim is to:

- focus attention on high impact products and services
- encourage business and consumers to take account of the full range of lifecycle environmental impacts
- drive solutions that achieve environmental and economic benefits through improving resource efficiency

125 Progress Report on Sustainable Products and Materials, Defra, June 2008, available at: www.tinyurl.com/5765k5

Actions and Deliverables

List of Actions & Deliverables which contribute to the Overarching Target	Body Responsible for each action/ deliverable	Timescale
Pilot product roadmaps to assess impacts of products across the full product lifecycle, to identify and prioritise any particular problems and then develop the most effective solutions for improving sustainability.	Government and relevant industry supply chain partners	Initial mapping exercises - completed summer 2008; agreement on next steps - second half of 2008
Finalising Framework Standards to facilitate the development of sector Responsible Sourcing schemes.	Construction Products Association with BRE and BSI	2008 / 2009
25% of products used in construction projects to be from schemes recognized for responsible sourcing.	Strategic Forum	2012 - Sample survey of products used in projects.
To develop means of improving access for designers to product Life Cycle Inventory information.	Construction Products Association / BRE/ designers and other certification bodies	2008 - 2010

Measurement and Reporting

Considerable further work needs to be done to decide on the best means of measuring the uptake of sustainable products within the building sector. The development of the standards for responsible sourcing is currently underway by both BRE and the BSI.

Future Work

The development of roadmaps for improvement, framework standards for responsible sourcing and improved access to Life Cycle Assessment information, will provide essential next steps towards further improving the sustainability of materials used in construction. Government and industry will collaborate to consider what additional tools and mechanisms are needed to promote both increased use of sustainable materials in construction and improvements in materials themselves.

14

Embedding and Reporting Progress

The construction industry and Government will have key roles in implementing this Strategy.

For instance, all 30 member organisations of the Construction Industry Council (CIC) will be developing and delivering a work programme in support of sustainable construction. The CIC will also be developing a Sustainability Charter to which all members would be required to sign up as a condition of membership.

The Construction Products Association has embedded sustainability thinking within its organisational objectives and is encouraging the industry to develop products and processes that contribute to a more sustainable built environment. It convenes numerous working groups, workshops and work programmes with its members to take forward the necessary activities. It promotes the uptake of Key Performance Indicator measurement by its members.

The UK Green Building Council (UK-GBC) is working with members and other stakeholders to create a 'Roadmap to Sustainability', a shared vision of a sustainable built environment that provides a path for the industry, its clients and policy makers to follow¹²⁶.

CIRIA will provide a means through which the many different stakeholders in construction can work together to promote this Strategy throughout industry. This will be performed using member contacts, networks and events (including CIEF¹²⁷), where appropriate, to promote the Government's targets for sustainable construction.

Constructing Excellence will use its extensive network of organizations and businesses from across the built environment to communicate and promote the Strategy. It will also engage its local club network to promote the Strategy to SMEs and regional offices of major players. To aid uptake of sustainable practise, the Construction Clients Group has produced a Plain English Guide to Sustainable Construction¹²⁸.

Regional Development Agencies (RDAs) will support this Strategy through strategic alignment and working in partnership with the rest of the public sector while understanding the needs of business. RDAs will:

- Apply the Common Minimum Standards¹²⁹ for all construction works carried out directly or with RDA financial support - these include the standards set out in the OGC's Achieving Excellence²³ initiative;
- Require that where RDA investment relates to housing development they will require achievement of at least the same levels of the Code for Sustainable Homes⁴⁶ and complementary housing quality standards now required by English Partnerships³⁹;
- Support innovation in partnership with the Technology Strategy Board and align their investments to achieve this;
- Support Small and Medium Sized Enterprises with a particular focus on resource efficiencies;
- Support sustainable development in their regions through the Integrated Regional Strategies;
- Be signatories to the Construction Commitments¹³⁰.

126 For details see: www.ukgbc.org

127 Construction Industry Environmental Forum

128 For details see: www.tinyurl.com/67y8es

129 See: www.tinyurl.com/3kou3w for details

130 See: www.strategicforum.org.uk for further details

Industry, Government and its agencies will continue to work together – primarily by the actions outlined in the preceding chapters. As an example of activity within the public sector, the Department of Health promotes the Strategy across the health and social care sector and has developed the BREEAM Healthcare environmental assessment tool. This is supported by guidance¹³¹, to ensure that in future NHS healthcare facilities are built and operated in accordance with these sustainable construction principles.

The intention is to publish reports on progress at two year intervals and to hold conferences in 2009 and 2011. Targets, actions and deliverables will be reassessed and refreshed at these times.

Constructing Excellence collects the key performance indicator data for the industry. A number of Key Performance Indicators are relevant to the chapters within the Strategy and would help organisations to measure their performance against industry averages. Further information is available at: www.kpizone.com

The Sustainable Development Commission will continue to monitor the performance of central Government operations against the targets of the Sustainable Operations on the Government Estate¹³²; this framework covers energy, biodiversity and consumption/production¹³³.

Reporting and Monitoring

The Strategic Forum for Construction will be monitoring industry's progress in regard to the actions and deliverables contained in this Strategy.

BERR will be undertaking a similar function for actions and deliverables relating to the public sector.

¹³¹ Health Technical Memorandum 07-07 "Sustainable Social and Healthcare Buildings: planning, design, construction and refurbishment"

¹³² www.tinyurl.com/4jt6xe

¹³³ www.sd-commission.org.uk/sdig2007

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Acknowledgements

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We would like to express our gratitude to all those involved in supporting development of this joint Strategy.

In particular, we would like to acknowledge the assistance of Atkins, the Construction Industry Council, Lafarge and Skanska UK plc in providing secondees to help formulate the Strategy; to the Sustainable Construction Task Force on behalf of the Strategic Forum for Construction for providing a focus for industry input; and to the Sustainable Development Commission for guidance and oversight.

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Contact Details

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20 – Σκωτία

21 – Scottish Procurement Policy Handbook

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23 – Το Υπόδειγμα της Σκωτίας



The Scottish Government Riaghaltas na h-Alba

- ▼ Public Sector
- ▼ Procurement
- ▼ Policy and Legislation
- ▶ Review of Procurement in Construction
- ▶ Governance
- ▶ Implementation timetable
- ▶ Consultation
- ▶ Project Bank Accounts
- ▶ Stakeholder Engagement
- ▶ Workstream Outputs
- ▶ Sustainable Procurement of Steel

Review of Procurement in Construction - introduction



The report of the [Review of Scottish Public Sector Procurement in Construction](#) was published in October 2013. The report is complementary to John McClelland's report on Public Procurement in Scotland which focused on the procurement of goods and services. The independent construction review looked at how public bodies involved in construction-related procurement adopt practices that are streamlined and deliver value for taxpayers' money.

Public Procurement Reform Programme

Scottish Procurement Policy Handbook

Legal framework

The legal framework for public procurement includes:

- EC Treaty obligations¹²;
- EC Procurement Directives, as implemented in national law;
- European Court of Justice and national caselaw.

4.1 EC Treaty

The EC Treaty applies to all public procurement activity above the thresholds at which advertising in the Official Journal is required. Contracts which are exempt from application of the EC Treaty include:

• contracts for the purchase of goods or services which are not covered by the procurement rules;

• contracts for the purchase of goods or services which are not covered by the procurement rules;

• contracts for the purchase of goods or services which are not covered by the procurement rules;

Public Procurement Reform Programme

Scottish Procurement Policy Handbook

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Ministerial Foreword

Public procurement has a key role to play in supporting sustainable economic growth in Scotland. The public sector spends over £8 billion each year on goods, works and services and it is essential that we make the best use of this significant amount of expenditure. Better procurement can significantly improve the quality of services the public sector delivers to the people of Scotland and can release funds for additional frontline services. How we spend this money is also important for our businesses, who rightly expect that public contracts will be awarded fairly, transparently and on merit.

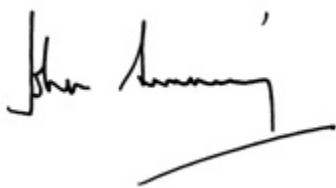
While the public sector in Scotland is made up of many diverse organisations, the fundamental issues that affect public procurement are broadly similar, whichever organisation or sector you work in. John McClelland's *Review of Public Procurement in Scotland* recognised the need for strong, consistent, policy guidance and his report recommended that a "public sector wide Procurement Policy Handbook should be established offering a standard and well-documented approach to be utilised across all of the public sector". This Handbook has been developed in response to that recommendation. It provides an overarching statement of the fundamental rules, behaviours and standards applicable to public procurement activity in Scotland.

The Handbook describes the key roles and responsibilities in relation to the procurement function and outlines the governance and accountability arrangements that organisations should have in place. It addresses key policy issues: the achievement of value for money for the taxpayer through effective competition; the importance of collaboration at a national, sectoral and local level; incorporating environmental and social issues in public procurement; and fostering innovation through procurement.

The Handbook has been developed in consultation with the Procurement Policy Forum. Membership of the Forum comprises key stakeholders from each sector and representatives from each of the procurement Centres of Expertise. I am very grateful to Forum Members for their contribution to the Handbook. It has also been endorsed by the Public Procurement Reform Board and COSLA.

As Chair of the Public Procurement Reform Board, I expect the highest standards of those involved in public procurement in Scotland and I regard compliance with the principles in the Handbook as essential for all public sector procurement organisations. I expect compliance to feature prominently in internal and external audit scrutiny of public procurement in Scotland.

It is very helpful to have, for the first time, a clear statement of the standards that all public sector procurement organisations are required to meet. Under the Public Procurement Reform Programme, we are committed to establishing and embedding appropriate procurement policy and best practice in order to ensure fair and efficient procurement practices. This Handbook forms the cornerstone of work the Scottish Government is taking forward to deliver this commitment.

A handwritten signature in black ink, appearing to read 'John Swinney', with a long horizontal stroke underneath.

JOHN SWINNEY, MSP

Cabinet Secretary for Finance and Sustainable Growth

December 2008

1 Introduction

The Procurement Policy Handbook sets out the fundamental rules, behaviours and standards applicable to public procurement activity in Scotland.

The *Review of Public Procurement in Scotland* by John McClelland (published in March 2006) recommended (section 7.1) that:

“A public sector wide Procurement Policy Handbook should be established offering a standard and well documented approach to be utilised across all of the public sector.”

This document has been developed in response to that recommendation, in consultation with the Procurement Policy Forum. It has been endorsed by the Public Procurement Reform Board (PPRB). Information on the Forum and the PPRB is available on the SPD website:

<http://www.scotland.gov.uk/Procurement>

The Handbook should be read in conjunction with Scottish Procurement Policy Notes (SPPNs) and other supporting documents issued by the Scottish Procurement Directorate (SPD). The Handbook provides an overarching framework; it does not replace an organisation’s policy manual¹ or sector-specific policy guidance issued by the Centres of Procurement Expertise. Each contracting authority is responsible for reviewing its policy and procedures to ensure consistency with the Handbook. Similarly, the Centres of Procurement Expertise should ensure that any supplementary, sector-specific policy guidance is consistent with the Handbook.

The Handbook is available to download from the SPD website, which provides access to published guidance and includes contact details for further enquiries:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy>

¹ An organisation’s policy manual typically provides detailed information about the procurement process and the procedural requirements that should be met by that organisation.

2 Application

Compliance with the principles in the Handbook is regarded by Ministers and the Public Procurement Reform Board as mandatory. The *Review of Public Procurement in Scotland* stated (section 7.1) that:

“The Policy contents of the handbook should be mandatory for implementation across all public sector organisations and compliance measured and reported upon during audits and other reviews.”

The Handbook applies, therefore, to all Scottish contracting authorities (bodies governed by public law) included in regulation 3 of The Public Contracts (Scotland) Regulations 2006. Compliance with the requirements of the Handbook is expected to feature prominently in internal and external audit scrutiny.

Any contracting authority which fails to comply with the principles and requirements of this Handbook and to apply best practice procurement processes and procedures is unlikely to be able to demonstrate value for money, or be able to demonstrate adequate governance and accountability for the appropriate management of public funds and expenditure.

3 Procurement organisation and governance

3.1 Scope of public procurement

Public procurement can be defined as the acquisition, whether under formal contract or otherwise, of goods, services and works from third parties by contracting authorities.

The scope of public procurement ranges from the purchase of routine supplies or services, to formal tendering and placing contracts for large infrastructure projects by a wide and diverse range of contracting authorities.

This Handbook outlines the principles that should be applied to all procurement. Additional guidance on best practice is provided in the Scottish Public Procurement Toolkit. Further information on the Toolkit can be found in section 16.3. Those who are responsible for procuring, managing or delivering major construction projects should also refer to the Construction Procurement Manual. Further information on the Construction Procurement Manual can be found in section 8.

If contracting authorities employ private sector agents to undertake procurement on their behalf, they should procure these as formal public contracts under EC law, including in the terms an obligation on the provider to:

- require compliance with EC procurement rules;
- ensure clear allocation of responsibilities; and
- where appropriate, obtain the agent's indemnity against any costs incurred as a result of its failure to comply with the legal framework on its behalf.

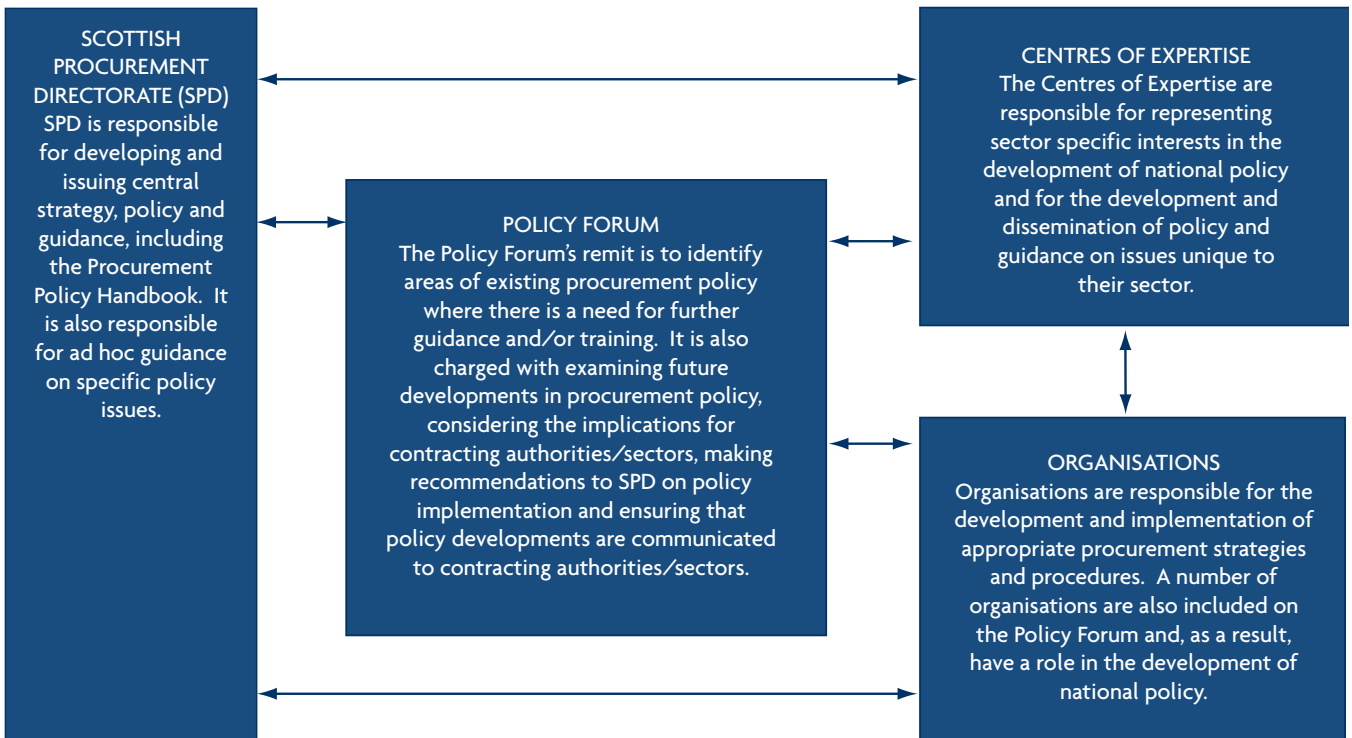
"Procurement" for the purposes of this Handbook is not intended to cover funding agreements or forms of co-operation between contracting authorities which are non-contractual. However, it should be noted that relationships between contracting authorities may constitute contracts for the provision of goods, services or works in certain circumstances. Further information on the application of EC procurement rules to the provision of services between public bodies and/or between public bodies and delivery vehicles intended to support the provision of shared services to more than one public body can be accessed through the following link:

<http://www.scotland.gov.uk/Resource/Doc/1265/0051647.pdf>

Even where funding agreements or other forms of co-operation are not contractual and do not constitute procurement, normal commercial disciplines should be applied wherever possible to ensure that public funds and resources are used effectively.

3.2 Procurement landscape

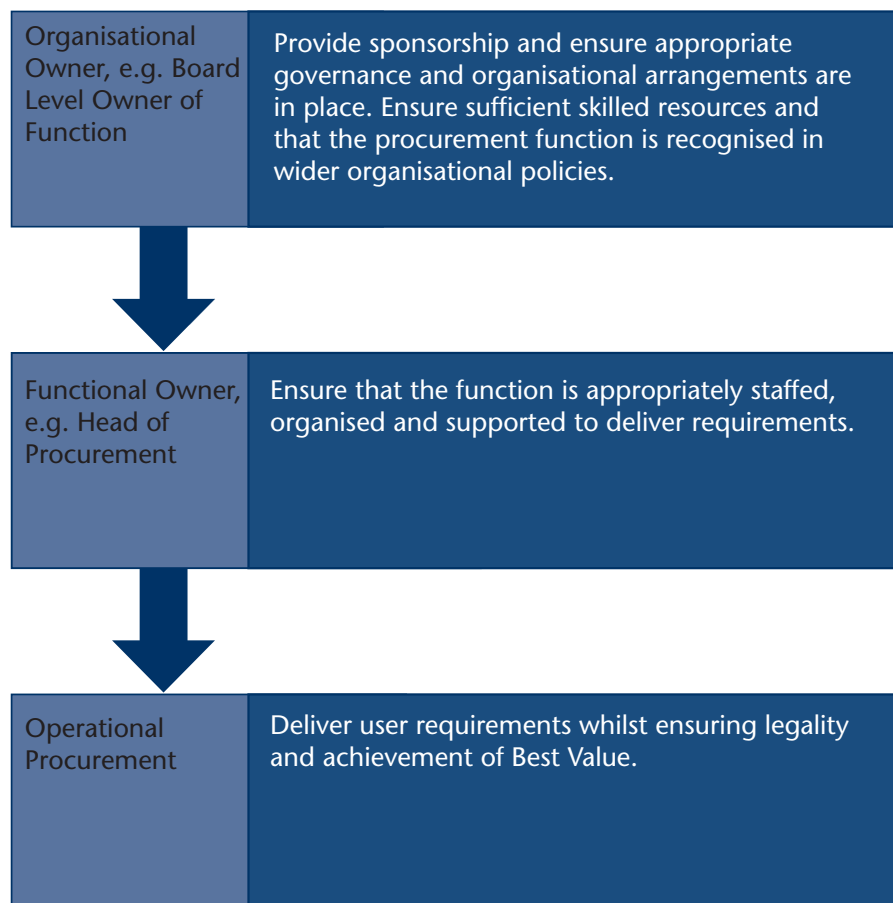
Key roles and responsibilities in relation to the development and implementation of procurement policy are illustrated below:



3.3 Procurement function

Sections 3.3 and 3.4 describe a mature procurement function within a contracting authority. As a result, the text may not be representative of contracting authorities with a less mature procurement function or contracting authorities which share procurement resources. **It should be noted that, even where an organisation is not yet mature, it is the Accountable Officer’s responsibility to ensure that procurement activity is undertaken or overseen only by those formally authorised to act as procurement officers.**

Key roles and responsibilities in relation to the procurement function are illustrated below:



3.4 Role of the procurement function

Each organisation should ensure that its arrangements for procurement are appropriate to the level of procurement undertaken by the organisation and should have, or have access to, a dedicated procurement function. This function should be led by a Head of Procurement with full responsibility for procurement across the organisation².

The Head of Procurement should be at Board level or, at a minimum, one level below with a Board member taking clear ownership for procurement and commercial matters.

The specific role of the procurement function may vary depending upon the size and nature of the organisation it serves. At a high level, however, the primary role of the procurement function is to:

- provide professional, qualified procurement expertise, advice and services;
- provide strategic procurement advice;
- ensure that business needs are met through its procurement of goods, services and works;
- contribute to the aims and objectives of the organisation, as detailed in its business plan;
- pro-actively manage and develop the supplier base, including small and medium-sized enterprises (SMEs) and third sector and voluntary sector organisations, identifying and managing any supply risks or value add opportunities;
- ensure that value for money is achieved, including through implementation of national contracts;
- advise, guide and support the development of and adherence to procurement policy, best practice and law;
- develop, promote and implement appropriate procurement strategies and procedures;
- establish and address training needs, utilising national/sectoral training contracts where appropriate;
- co-ordinate training development and registering of procurement officers across the organisation;
- assess procurement competencies across the organisation, using tools such as the Scottish Procurement Competency Framework³;

² Where procurement is devolved within an organisation, responsibility may be spread across a network of procurement officers, including staff with part-time procurement roles, led by a Head of Procurement.

³ See section 3.7 for further information on the Competency Framework.

- promote and engage in collaboration and information sharing with relevant Centres of Expertise and SPD;
- support sustainable policies through procurement processes⁴;
- comply with and, where appropriate, promote equalities legislation and policy; and
- promote and engage in the implementation of relevant technology solutions, including e-procurement, to minimise purchase to pay costs.

A mature procurement function will encompass the following activities:

- act as the interface between the contracting organisation and the external marketplace on commercial matters;
- determine requirements and establish specifications in collaboration with end users;
- challenge the organisation's/end-users' requirements critically for need and cost effectiveness, taking account of whole life costs and corporate social responsibility/sustainability issues;
- conduct market engagement and research;
- engage effectively with Centres of Expertise and SPD in relation to issues of policy, practice, information sharing and collaboration;
- manage supplier relationships, including responding to suppliers' complaints;
- manage commercial relationships;
- manage procurement competitions;
- manage the award of contracts;
- contract management;
- establish a comprehensive contract register;
- establish arrangements relating to authority to procure;
- measure and report procurement performance, including Best Practice Indicators (BPIs); and
- encourage participation of users/feedback into relevant advisory groups (user intelligence groups).

⁴ Contracting authorities subject to the duty of Best Value are required to secure continuous improvement in their services, having regard to value for money and taking account of equalities and sustainability.

3.5 Role of procurement officers

The term “procurement officer” is used within this document to describe any member of staff who is formally authorised to procure goods, services and works (i.e. to place contracts on behalf of the organisation)⁵.

The key elements of the procurement officer’s role in the procurement process are to provide support and guidance to the end user/customer in:

- market analysis and engaging in initial market dialogue, where appropriate;
- challenging end users’ requirements for cost-effectiveness and need, taking account of whole life costs and corporate social responsibility/sustainability issues;
- identifying and engaging other subject matter experts as required (e.g. end user, legal, finance etc.);
- developing an appropriate output-based specification⁶ which is fashioned to attract market interest and stimulate competition and innovation;
- developing a procurement strategy which requires consideration of existing and/or collaborative contracts;⁷
- ensuring that all procurement processes (tender, order from framework etc.) are compliant with relevant legal and policy obligations, advertising through the national portal where appropriate;
- publicising procurement contact points and making available as much information as suppliers reasonably need to respond to the bidding process;
- understanding and complying with relevant legal obligations relating to the goods, services or works to be purchased, e.g. environmental/health and safety legislation;
- ensuring that procurement decisions take account of wider policy requirements;
- ensuring that procurement decisions are aligned against organisational objectives;
- ensuring that the organisation’s policies on corporate social responsibility/sustainability are adhered to;
- managing the procurement procedure;
- supporting partnership working arrangements;
- conducting any procurement clarification required prior to contract award;
- finalising the contractual agreement and formal contract documentation;

5 For some staff procurement forms only part of their remit.

6 For further information on developing an output-based specification, whereby contracting authorities identify their needs and invite the market to propose appropriate solutions, see section 14.

7 If necessary, in order to tie in with a collaborative approach, consideration should be given to short-term contract extensions.

- establishing a clear audit trail (including recording the contract on the organisation’s contract register);
- notifying the outcome of bids promptly and, within the bounds of commercial confidentiality, debriefing winners and losers on the outcome of the bidding process to facilitate better performance on future occasions⁸;
- ensuring that adequate contract and supplier management arrangements are in place, supporting supplier management as appropriate;
- sharing knowledge to develop best practice: and
- handling Freedom of Information requests on procurement matters in accordance with organisational policy.

Detailed guidance on individual aspects of procurement practice is available in the ‘Scottish Public Procurement Toolkit’ and from SPD/Centres of Expertise websites (see section 16.3 and Annex A).

3.6 Role of the end user

The term “end user” is used within this document to describe the individual with responsibility for formulating the requirement, i.e. the goods, services or works required or the budget from which the requirement will be purchased.

The key elements of the end user’s role in the procurement process are to:

- adequately define the user’s needs, identifying minimum and desirable elements and ensuring that there is adequate consultation with users and their representative bodies (where necessary);
- ensure that the requirement takes account of the organisation’s policy requirements, including its corporate social responsibility/sustainability policies, and is aligned against organisational objectives;
- ensure compliance with relevant legal obligations relating to the goods, services or works to be purchased, e.g. environmental/health and safety legislation;
- where appropriate, prepare a business case;
- ensure that funding is in place;
- contribute to drafting the tender specification⁹;
- contribute to development of the procurement strategy;

⁸ This is a requirement of the ECJ judgments in the Alcatel cases (Case C81/98 *Alcatel Austria and Others v Bundesministerium für Wissenschaft und Verkehr* and C212/02 *Commission v Austria*) and has been incorporated in the Public Contracts (Scotland) Regulations 2006 and Utilities Contracts (Scotland) Regulations 2006.

⁹ In some projects, technical experts/end users have a specific responsibility to prepare an appropriate specification.

- be involved throughout the life cycle of the procurement exercise – implementation, review, ongoing intelligence groups;
- provide technical expertise and input to support the bid assessment processes;
- prepare the technical recommendation in any bid assessment report; and
- approve key review stages throughout the procurement process.

End users should not deal directly with bidders or potential bidders during the procurement process without the full involvement of and/or approval by the procurement officer.

3.7 Procurement skills

The *Review of Public Procurement in Scotland* recommended that skill levels of procurement staff should be continuously improved through programmes of professional training and development. Training for staff involved in the procurement process should be considered by organisations as an investment.

The recruitment and retention of suitably qualified staff is essential. Organisations should implement a process to assess, at regular intervals, their organisation's procurement capability and develop training and development strategies which ensure that their procurement activity is both compliant with legislation and obtaining value for money.

The diversity of the work involved in procurement necessitates that procurement staff are required to be competent in a wide variety of generic procurement skills in addition to the specific technical skills and knowledge required when procuring for different sectors and commodities.

A Scottish Procurement Competency Framework has been developed which complements existing staff development tools in organisations by ensuring that the skills are specific to procurement. The flexibility of the framework ensures that it can be utilised by all sectors. It will support the development of procurement staff using a consistent and measurable approach across the Scottish Public Sector. It should be noted that the skills are applicable to all staff where procurement activity is an integral part of their role, not only staff employed in a specific procurement post. The Competency Framework can be accessed through the following link:

<http://www.scotland.gov.uk/Topics/Government/Procurement/npcoe/Capability/CompetencyFramework>

Professional training and development programmes, both nationally and sectorally will be established between the public sector, professional bodies e.g. Chartered Institute of Purchasing and Supply, Society of Procurement Officers (SOPO) and Association of University Procurement Officers (AUPO) and training providers. These programmes will be accessible by all public sector bodies.

3.8 Governance and audit

Contracting authorities are responsible for establishing arrangements for ensuring the proper conduct of their affairs, including conformance to standards of good governance and accountability with regard to procurement. They will usually involve their audit committees or similar groups in monitoring these arrangements.

Internal audit should provide an independent and continuing appraisal of an organisation's internal control system and continuing assurance that its internal control systems are adequate and effective.

Each organisation's audit committee should set the degree of assurance it requires concerning the management of procurement risk, and internal audit should plan its work accordingly. This should address the *Review of Public Procurement in Scotland* recommendation that organisations confirm annually that they comply with minimum standards of governance and accountability for procurement¹⁰.

External audit provide an opinion on contracting authorities' financial statements and the regularity of transactions. As part of the wider scope of public audit, each year they review and report on contracting authorities' corporate governance arrangements, including arrangements to achieve value for money in the use of resources and may seek assurances on compliance with public procurement law.

External audit may review and report on standards of risk management and governance with regard to procurement in any contracting authority. Additionally, Audit Scotland's programme of performance audits¹¹ may scrutinise and report on contracting authorities' procurement systems and effectiveness.



¹⁰ Work is underway to develop a generic tool for the assessment of minimum standards of governance and accountability for procurement. A link to the tool will be added in due course.

¹¹ Audit Scotland does not audit universities in Scotland.

4 Legal framework

The legal framework for public procurement includes:

- EC Treaty obligations¹²;
- EC Procurement Directives, as implemented in national legislation; and
- European Court of Justice and national caselaw.

4.1 EC Treaty

The EC Treaty applies to all public procurement activity regardless of value, including contracts below the thresholds at which advertising in the Official Journal of the European Union is required and including contracts which are exempt from application of the EC Procurement Directives¹³.

Fundamental principles flowing from the Treaty include:

- transparency – contract procedures must be transparent and contract opportunities should generally be publicised;
- equal treatment and non-discrimination – potential suppliers must be treated equally;
- proportionality – procurement procedures and decisions must be proportionate; and
- mutual recognition – giving equal validity to qualifications and standards from other Member States, where appropriate.

4.2 EC Procurement Directives and implementing Scottish Regulations

EC Procurement Directives 2004/17/EC and 2004/18/EC set out detailed procedural rules which are based on the principles outlined in the EC Treaty and which are intended to support the single market by harmonising procedures for higher value contracts, ensuring that they are advertised in the Official Journal of the European Union in standard format.

These Directives are given effect in Scots law by The Public Contracts (Scotland) Regulations 2006 (SSI 2006 No 1) and The Utilities Contracts (Scotland) Regulations 2006 (SSI 2006 No 2) which came into force on 31 January 2006.

A copy of the Scottish Procurement Regulations and amending regulations can be found on the SPD website: <http://www.scotland.gov.uk/Topics/Government/Procurement/Selling/10615>

¹² In addition, World Trade Organisation (WTO) Government Procurement Agreement (GPA) obligations ensure that signatories to the Agreement, of which there are twenty-seven, have equivalent rights of access to bidding for public contracts in the EU.

¹³ with some limited exceptions, e.g. relating to defence and national security.

Prior to implementing EC Procurement Directives in national legislation, the Scottish Government will consult publicly on its approach to implementation and/or draft legislation.

Further information relating to EC procurement law is provided in the Scottish Public Procurement Toolkit (see section 16.3).

4.3 European Court of Justice and national caselaw

Decisions of the European Court of Justice and the national courts provide interpretation of the requirements of the EC Treaty and the EC Procurement Directives and can establish precedents which must be observed. Caselaw, by its nature, is constantly evolving and can have significant effects.

4.4 Meeting legal obligations

The legal framework is not static: it evolves through new/amended legislation, through European Commission decisions/guidelines and through Court judgments. Every contracting authority should therefore ensure that it has appropriate arrangements in place to ensure that staff involved in procurement activity are kept up to date with developments in the legal framework and are equipped to meet their legal obligations. Where appropriate, SPD will issue guidance on changes to the legal framework via Scottish Procurement Policy Notes or Action Notes (see section 18).

Organisations should bring any complex legal issues to the attention of SPD and the relevant Centre of Expertise. This will allow SPD to determine if wider dissemination across the procurement community is appropriate.



4.5 Formal challenges/complaints

Regulation 47 of the Public Contracts (Scotland) Regulations 2006 allows suppliers to bring proceedings in the Sheriff Court or Court of Session against contracting authorities which have infringed their obligations to comply with the Regulations, or any other enforceable European Community law provision which may be relevant to awarding a public contract¹⁴.

Any individual may bring an alleged breach of the EC Procurement Directives to the attention of the European Commission. In the event of proceedings by the Commission against a Scottish contracting authority, SPD will co-ordinate the UK response under the arrangements set out in a subject specific Concordat on public procurement which has been published on the SPD website:

<http://www.scotland.gov.uk/Resource/Doc/175738/0049495.pdf>

In co-ordinating the response, SPD will consult with the individual contracting authority or Centre of Expertise (where the challenge/complaint relates to an alleged breach by a Centre of Expertise), as appropriate.

¹⁴ Regulation 47 of the Public Contracts Regulations 2006 (SI 2006 No.5) similarly allows suppliers to bring proceedings in the High Court in England, Wales or Northern Ireland.

5 Value for money

The overarching aim of public sector procurement activity in Scotland must be the achievement of value for money¹⁵ for the taxpayer. Value for money is defined as the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user's requirement. Depending on the nature of the contract, whole-life cost may include implementation costs, ongoing operating costs and end-of-life disposal.

Regulation 30 of The Public Contracts (Scotland) Regulations 2006 sets out two methods for evaluating tenders: contracting authorities can award contracts on the basis of the most economically advantageous tender or the lowest price. In determining the criteria for the award of contracts, purchasers should rarely rely on price alone. This is because awarding contracts on the basis of the most economically advantageous tender allows purchasers to balance the quality of the goods, services and works they are procuring against price and to frame specifications in a way which encourages innovation rather than defining the solution. Appropriate investment appraisal techniques should be used in assessing which compliant bid offers best value for money.

As part of value for money, due regard to other relevant organisational policies is important, for example, policies in relation to corporate social responsibility/sustainability.

¹⁵ Section 1, Local Government in Scotland Act 2003 places a statutory duty on local authorities to secure best value. Procurement activity which delivers value for money will contribute to the achievement of best value. The achievement of value for money underpins many of the recommendations in the *Review of Public Procurement in Scotland*.

6 Competition

Competition promotes efficiency and effectiveness in public expenditure. Awarding contracts on the basis of value for money following competition contributes to the competitiveness of suppliers.

Goods, services and works should be acquired by effective competition, including adequate publication of the contract opportunity, unless there are convincing and justifiable reasons to the contrary.

Subject to any relevant legal obligations, for example under the EC procurement rules, the form of competition should be appropriate to the value and complexity of the goods, services or works to be acquired. Contracting authorities should keep bidding costs to the minimum necessary for effective competition and should remove barriers to participation by, for example small firms, the self-employed and the third sector without discriminating against others. Consistent with legal obligations, during competition any minimum standards required should be proportionate to the contract in question.

Guidance on publication of contract opportunities is available on the SPD website:

<http://www.scotland.gov.uk/Resource/Doc/1265/0023351.pdf>

To facilitate compliance with the requirement for adequate publicity, the public sector in Scotland has access to a national advertising portal called Public Contracts Scotland through which advertisements for contracts of all levels can be placed. The portal enables free of charge access to public sector contracts for potential suppliers, thereby providing a means of stimulating competition.

The portal is available at:

<http://www.publiccontractsscotland.gov.uk/>

Contracting authorities may also publish advertisements on their own websites or other portals and in trade or other relevant publications or journals.

7 Collaboration

Collaboration across public procurement functions provides opportunities for: better utilisation of procurement skills and resources; greater purchasing leverage through aggregation of spend; encouraging competition or innovation in markets (thereby providing value for money); maximising benefits; and the spread of best practice. Organisations should collaborate to achieve these benefits where it makes logical and commercial sense to do so.

In the absence of comparable local arrangement, where a requirement can be met and value for money achieved through the use of an existing contract (e.g. a contract put in place by one of the Centres of Expertise or another collaborative procurement agency), organisations should utilise the existing contract.

Contracting authorities should seek to collaborate wherever possible with the Centres of Expertise.

The aggregation of purchasing spend has the potential to provide significant value and benefit across the public sector. To assist the realisation of these potential benefits, areas of spend or categories have been grouped by sector specific attributes or commonality. These groupings define how and by whom in the national procurement structure, contracts are established for each of the categories.

Category A – National Contracts are established centrally and will include, for example, stationery and Information and Communications Technologies (ICT). There is a presumption that National Contracts will be used by all organisations funded or owned by the public sector in Scotland unless there are compelling and objective business reasons to the contrary.

Category B – Sector Specific Contracts are established within each sector (local authorities, the health service, universities and colleges, and the Scottish Government and its agencies and Non-Departmental Public Bodies). There is a presumption that Category B contracts will be used by all organisations across the relevant sector unless there are compelling and objective business reasons to the contrary.

Category C – General Contracts for commodities and services which are neither classified as A (National Contracts) or B (Sector Specific Contracts) and which will be conducted as the remit of a single organisation.

Category C1 – Local/Regional Contracts for commodities and services which are neither classified as A (National Contracts) or B (Sector Specific Contracts) and which could be consolidated in a region or other grouping to the benefit of purchasing power and optimisation of skilled resources.

To enable organisations to identify and exploit opportunities for collaboration, contracting authorities should place details of all advertisements and contracts on the national portal:

<http://www.publiccontractsscotland.gov.uk/>.

8 Construction projects

Those who are responsible for procuring, managing or delivering major construction projects¹⁶ should follow the policy and procedural framework set out in the Scottish Construction Procurement Manual, use of which is mandatory throughout the Scottish Government, its Agencies and those contracting authorities which are subject to the Scottish Public Finance Manual. SPD's Construction Advice and Policy Division (CAPD) provides guidance and advice on construction procurement procedures and best practice. Further details and guidance, including guidance on sustainability/use of recycled content, can be found at:

<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building>



¹⁶ Major projects are defined in the Construction Procurement Manual as those with a total budget exceeding £2 million inclusive of professional fees and VAT.

9 Working with suppliers

9.1 Suppliers' Charter

The *Review of Public Procurement in Scotland* recognised that “The existence of a base of high quality and cost competitive suppliers is the optimum environment in which to achieve Best Value in procurement expenditure”.

A Suppliers' Charter¹⁷ has been established for Scottish contracting authorities. It defines the generic standards which suppliers can expect from contracting authorities and the standards which will in turn be expected of them as suppliers to the public sector.

The Charter sets out a number of commitments for contracting authorities, including:

- adequate publicity¹⁸ of contract opportunities;
- use of a core qualification questionnaire; and
- provision of tender debriefing to any supplier that requests it.

It also commits contracting authorities to ongoing dialogue with businesses to achieve change.

The Charter commits business organisations to encourage their members to adhere to the Charter, recognise the legislative framework in which public procurement operates and make effective use of their skills and resources in bidding competitively for and providing specified quality/delivery on public sector goods, services and works.

¹⁷ The Suppliers' Charter is available at <http://www.scotland.gov.uk/Topics/Government/Procurement/Selling/Supplierscharter2>.

¹⁸ This requires public sector organisations to ensure “a degree of advertising and follow a procedure leading to the award of the contract which is sufficient to enable open competition and meet the requirements of the principles of equal treatment, non-discrimination and transparency” (Regulation 8 (21), Public Contracts (Scotland) Regulations 2006). This can be achieved by advertising a contracting opportunity on the national portal, Public Contracts Scotland: <http://www.publiccontractsscotland.gov.uk/>. Contracting authorities may also publish advertisements on their own websites or other portals and in trade or other relevant publications or journals.

9.2 Standards expected of suppliers

Suppliers to the public sector are expected to maintain high standards of business and professional conduct e.g. in relation to legislative and policy requirements on the environment, equality issues, health and safety, employment and taxation. Bidders should generally be required to disclose any recent adverse court or tribunal rulings regarding their business/professional conduct. Where a bidder has failed to comply with relevant legal obligations, consideration should be given to whether it should be excluded from competition on grounds of its unsuitability. In deciding whether or not a bidder should be excluded, account should be taken of the seriousness of the ruling/offence, whether or not the ruling/offence indicates that the bidder is of poor reputation and whether or not the bidder has taken appropriate action to remedy the problem which was the subject of the ruling¹⁹.

9.3 Gifts and hospitality

It is an offence under the Prevention of Corruption Act 1906 for those employed by contracting authorities in their official capacity corruptly to accept any gift or consideration as an inducement or reward for doing, or refraining from doing, anything or showing favour or disfavour to any person.

Under the Prevention of Corruption Act 1916, any money, gift or consideration received from a person or organisation holding or seeking to obtain a contract will be deemed by the courts to have been received corruptly unless proved to the contrary.

Organisations should ensure that they have guidance in place²⁰, which is specific to the needs of those engaged in the commissioning of tenders/contracts, on the propriety of accepting gifts or hospitality.

9.4 Involving suppliers

Suppliers from all sectors are represented on the Public Procurement Advisory Group (PPAG).²¹ The purpose of the group is to provide the framework for an ongoing dialogue, about, and influence upon, public procurement practices as they affect suppliers.

¹⁹ A bidder who has been convicted of any of the criminal offences listed in Regulation 23(1) of The Public Contracts (Scotland) Regulations 2006 should be excluded from competition unless there are overriding requirements in the general interest which justify that bidder's inclusion.

²⁰ Such guidance should be consistent with organisations' HR policies.

²¹ The Advisory Group reports to the Public Procurement Reform Board; it has no executive authority to enforce change.

9.5 Ethical standards

In all dealings with suppliers and potential suppliers, contracting authorities must preserve the highest standards of honesty, integrity, impartiality and objectivity. In particular, those engaged in commissioning of tenders/contracts must:

- be fair, efficient, firm and courteous;
- maintain the highest possible standard of integrity in all business relationships;
- acquire and maintain current technical knowledge;
- achieve appropriate professional standards in the management of contracts;
- foster appropriate standards of professional competence amongst those for whom they are responsible;
- comply with the law, guidance on professional practice and contractual obligations;
- declare any personal interest which may affect or be seen by others to affect impartiality;
- respect the confidentiality of information received in the course of duty and ensure that information given in the course of duty is honest and clear; and
- respond promptly, courteously and efficiently to suggestions or enquiries, including handling Freedom of Information obligations according to organisational policies.

9.6 Handling complaints

Contracting authorities should have in place a formal process to ensure that any complaints from suppliers are dealt with in a professional, objective and timely manner. Effective analysis and handling of complaints will benefit both suppliers and contracting authorities, in terms of future business and practices. When dealing with a complex complaint, contracting authorities may wish to seek advice from the relevant Centre of Expertise and/or SPD.

9.7 Single Point of Enquiry

A Single Point of Enquiry (SPoE) has been established, as recommended by the *Review of Public Procurement in Scotland*, to which suppliers can address concerns about public procurement practices. The SPoE will work with the Centres of Expertise and contracting authorities to review issues raised by suppliers and to work towards improvements in public procurement practices in Scotland.

In all cases, suppliers should seek to resolve issues with the relevant contracting authority before submitting an enquiry to the SPoE.

Suppliers can submit an enquiry to the SPoE by completing the online form on the SPD website:

<http://www.scotland.gov.uk/Topics/Government/Procurement/Selling/supplier-enquiries/submit-an-enquiry>

10 Corporate Social Responsibility

Corporate Social Responsibility (CSR) in public procurement (including sustainable procurement) is essentially about how, as part of overall value for money and affordability considerations, contracting authorities take account of the economic, social, environmental and equality impacts of their purchasing activity, maximising the positive outcomes and minimising the negative.

It is essential that when contracting authorities buy goods, services and works they spend public funds in a way that achieves value for money. Contracting authorities and end-users can make a significant contribution towards meeting wider CSR objectives by including, wherever it is sensible and legitimate to do so, such objectives within the overall assessment of value for money and affordability. Generally CSR issues can be taken into account only where they are directly related to the subject matter of the particular contract in question. It is generally not permissible to take into account aspects such as an organisation's overall company policy on Corporate Social Responsibilities or the environment, where such policies are not directly relevant to the performance of a particular contract.

A short introduction to incorporating CSR in procurement is available at:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy/Subject-Specific/corporate-responsibility/susdevsummarynote>

Guidance on how to incorporate environmental issues in public procurement is available at:

<http://www.scotland.gov.uk/Resource/Doc/1265/0009333.pdf>

Guidance on how to incorporate social issues in public procurement has been published by the Scottish Procurement Directorate and is available at:

<http://www.scotland.gov.uk/Resource/Doc/116601/0053333.pdf>

The key messages are that it is possible and very often desirable to incorporate economic, social and environmental issues in public procurement²², provided that doing so offers a value for money outcome, complies with legislative requirements and is directly related to the subject matter of the contract.

The greatest impact will be gained by considering such issues at the outset and building them in at the beginning of the procurement process. Further guidance on CSR issues is available at:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy/Subject-Specific/corporate-responsibility>

²² Contracting authorities subject to the duty of Best Value are required to secure continuous improvement in their services, having regard to value for money and taking account of equalities and sustainability.

The Office of Government Commerce's Centre of Expertise on Sustainable Procurement can be accessed using the following link:

<http://www.ogc.gov.uk/procurement.asp>

Further information on the EU Green Public Procurement initiative is available at:

http://ec.europa.eu/environment/gpp/index_en.htm



11 Equality and the Public Sector Equality Duties

There is a range of equality legislation protecting people from discrimination on the grounds of race, disability, gender, age, sexual orientation and religion or belief. In addition, there are three public sector equality duties that require public authorities to take proactive steps to eliminate discrimination and harassment and to promote equality of opportunity with regard to race, disability and gender.

The race, gender and disability equality duties apply to public functions which are carried out through procurement as well as those carried out directly by a public authority. This means that a private or voluntary organisation must have due regard to the general duties relating to race, disability and gender when carrying out the function on behalf of a public authority.

Contracting authorities must comply with all relevant equality legislation. Where a contractor is carrying out a public function on behalf of a public authority, the legal liability for the duties in relation to that function remains with the public authority which contracts out the function.

The degree to which equality and diversity requirements are specified and incorporated within procurement documentation will vary according to the goods, services or works being purchased and should be assessed on a case by case basis. This will ensure that full consideration is given to the needs of, and the likely impact on, all users and others who will be affected by the contract.

Further information on equality legislation, including guidance on the public sector equality duties, can be found on the Equality and Human Rights Commission (EHRC) website:

<http://www.equalityhumanrights.com>

12 Health and Safety

The degree to which health and safety requirements are specified within procurement documentation will vary according to the goods, services or works being purchased. For example, particular health and safety legislation applies in the context of construction. The potential health and safety risks arising from a contract should be assessed on a case by case basis. Contracting authorities should ask suppliers to provide evidence to demonstrate that their organisation complies with current health and safety legislation and actively promotes and manages good health and safety practice. Where particular health and safety risks are identified, suppliers should be asked as part of the procurement process to provide information on the measures that they would put in place in response to the identified risks. Contracting authorities should monitor contracts to ensure compliance with health and safety requirements.



13 Freedom of Information and Data Protection Act

In relation to public procurement, the Freedom of Information (Scotland) Act 2002 provides a general right of access to information about all public contracts and procurement activity held by contracting authorities, subject to certain conditions and exceptions. It also imposes a duty on contracting authorities to adopt and maintain a scheme for the publication of information. Organisations must comply with the provisions of the 2002 Act when responding to requests for information about public sector procurement. SPD has produced guidance on responding to such requests:

<http://www.scotland.gov.uk/Resource/Doc/1265/0006892.pdf>

Annex A of the guidance provides examples of the main classes of procurement information that contracting authorities may be asked to disclose.

The above guidance also provides advice on responding to an individual's request under the Data Protection Act for information held about that individual.

Organisations should bring any complex issues relating to requests under the Freedom of Information Act or Data Protection Act to the attention of SPD. This will allow SPD to determine if wider dissemination across the procurement community is appropriate.

14 Innovation

The procurement of innovative goods, services and works by contracting authorities can contribute to improvements in the quality and delivery of public services and lead to growth in the Scottish economy by encouraging suppliers to invest in and deliver pioneering solutions to current and future public service needs. Contracting authorities should identify their needs (often through consultation with service users and their representative bodies) without always identifying an appropriate solution, although for highly technical equipment reference to standards or benchmarks is also important²³. In many circumstances it may be more appropriate to ask the market what solutions are currently or potentially available prior to advertising a contract. This encourages suppliers to be creative in the potential solutions they come up with, in turn, informs the decisions of contracting authorities as to when and how to procure the best available solutions to their particular needs. Market sounding can be beneficial as a long term strategy, even where the purchaser does not intend to carry out a procurement in the immediate future.

There are different ways of testing the market, such as the publication of a Prior Information Notice (PIN) in the Official Journal of the European Union (OJEU). However, it should be remembered that even at this early stage, all potential tenderers must be treated equally. This may mean, for higher value contracts, that any market sounding is carried out on an EU-wide basis.

Contracting authorities should also take full advantage of the more flexible procurement procedures available in the Regulations where the Regulations permit them to do so. For example, the competitive dialogue procedure, which can only be used for the award of complex contracts, allows scope for early discussion with suppliers to determine how their solution meets the needs expressed. In addition, contracting authorities can procure works for purely research and development purposes using the negotiated procedures. This allows them to test the suitability of new designs and materials for future use.

When it comes to publishing a contract notice and drawing up the contract documents, specifications should be expressed in terms of outputs/outcomes and performance. Describing what is to be achieved rather than specifying how it should be done will maximise the scope for the tenderers to propose innovative solutions.

Guidance on market engagement and developing “outcome” specifications is available from the Scottish Public Procurement Toolkit:

<http://www.scotland.gov.uk/Publications/2006/11/16102303/whatshouldbeinaspec#a2>

²³ Technical specifications must comply with Regulation 9, The Public Contracts (Scotland) Regulations 2006 and Regulation 12 of The Utilities Contracts (Scotland) Regulations 2006.

15 Business processes

15.1 Purchasing authority

No member of staff may award a contract²⁴ without written delegated purchasing authority. This delegated authority to commit to a contract (purchasing authority) is entirely separate from delegated budgetary authority, including that detailed in individual financial responsibility statements.

15.2 Separation of duties

In any procurement process, the key roles of budget holder and purchaser should not be performed by the same individual. The budget holder should have authority to commission goods, services or works and to provide financial authority for the expenditure. The purchaser should have authority to commit the organisation to a contract for the purchase of goods, services or works.

Separation of these roles within a procurement process provides necessary safeguards against impropriety or unethical practice. Accountable officers are required to ensure that procedures exist that allow only those staff with appropriate purchasing authority to commit the organisation to a new contractual relationship.

15.3 Ordering and payment procedures

All valid invoices should be paid on time. All public sector organisations are bound by the Late Payment of Commercial Debts (Interest) Act 1988, under which suppliers have a right to claim interest on payments made outside the agreed terms, or 30 days after receipt of a valid invoice where no payment terms are agreed. Where there is no contractual provision or other understanding to the contrary, suppliers should therefore be paid within 30 days of receipt of a valid invoice or similar correct and due demand for payment.

The payment of invoices that do not have a pre-requisite contract or order for the goods, services or works provided tends to facilitate unofficial buying by allowing the procurement function to be bypassed. It also means that authority to procure is retrospectively given rather than pre-approved. Therefore, suppliers should be given notice that goods, services and works should only be provided on receipt of appropriate contract or order reference information and within that same written notice informed that invoices received without contract or authorised order references will require special approval if they are to be paid. At a later and appropriate point in time invoices received without a pre-approved contract or order number should be returned to suppliers for this information. The payment cycle should not commence until a valid invoice with all required data is received.

Procurement arrangements should be reviewed periodically to consider whether ordering and payment procedures could be streamlined and value for money improved through implementation of relevant technology solutions, including e-procurement.

²⁴ All contracts should be made in writing unless there are exceptional circumstances. In this context, it is worth noting that a verbal agreement can create a legally binding contract.

16 Management information and best practice

16.1 Use of management information

Management information is key to making informed decisions in procurement related activities. SPD has developed a management information tool (the Scottish Procurement Information Hub) which analyses spend by organisation, type of goods, services or works procured and the geographical location of suppliers. Organisations should use this information to develop appropriate national, regional and local sourcing strategies and to identify opportunities for collaborative buying.

Public sector procurement organisations can access the management information tool via <http://www.spikescavell.net/>

16.2 Performance measurement and reporting

The *Review of Public Procurement in Scotland* set out a vision of increased efficiency and professionalism through structured collaboration and a national effort to adopt best practice.

To track progress with the reform programme, procurement organisations will need to monitor, manage and report on their performance in a consistent way. A common, core set of National Procurement Best Practice Indicators (BPIs) has been developed to ensure that public procurement in Scotland operates according to identified core values, and to monitor national progress against the priority areas of efficiency, collaboration, compliance, skills and e-procurement.

Best Practice Indicators for Public Procurement In Scotland: Guidance sets out the definition, rationale, calculation method, and expected trend for each BPI. The document is available at:

<http://www.scotland.gov.uk/Publications/2008/05/29141216/0>

The BPIs are not intended to replace any local performance measures that may already be used by individual organisations. Contracting authorities may find it useful to gather additional management information on their business practices in a variety of ways. The BPIs are intended to allow organisations to monitor their progress against the national vision for excellent public procurement practice over time, against their peers, and against national trends. To make reporting and analysis as easy as possible for organisations, a web based reporting tool has been developed alongside the Scottish Procurement Information Hub.

16.3 Best practice

The Scottish Public Procurement Toolkit provides best practice guidance and downloadable templates to assist in the development and implementation of market-facing commodity strategies, which in turn can help deliver improvements in financial, supplier relationship and contract management, priority areas of the Best Practice Indicator project.

The Toolkit provides guidance on the following areas:

- ▶ project start-up and initial analysis, including pre-contract risk assessment;
- ▶ commodity profiling;
- ▶ developing commodity strategies;
- ▶ guidance on EC procurement rules;
- ▶ supplier selection and pre-qualification questionnaires (PQQs);
- ▶ tender preparation, issue and analysis;
- ▶ post tender clarification;
- ▶ contract award and debriefing; and
- ▶ contract and supplier management.

The Toolkit can be found on the SPD website:

<http://www.scotland.gov.uk/Topics/Government/Procurement/Resources/SPDToolkit>

17 Gateway Review

For those parts of the public sector subject to the Scottish Public Finance Manual (SPFM), the Construction Procurement Manual also applies. The Major Investment section of the SPFM and the Construction Procurement Manual both provide mandatory policy and procedures in respect of the Gateway Review of capital projects. Further guidance on Gateway Review is available from the Scottish Government's Centre of Expertise for Programme, Policy and Project Delivery:

<http://www.scotland.gov.uk/Topics/Government/ProgrammeProjectDelivery/Gateway-Review>

In the case of public bodies, including local authorities, which are not subject to the Scottish Public Finance Manual, they should incorporate in their projects (particularly those considered by them to be highly complex or critical to the delivery of their business and services) review or assurance processes at key decision stages, conducted independently from the project team.

18 Supplementary guidance

18.1 Scottish Procurement Policy Notes

SPD produces Scottish Procurement Policy Notes (SPPNs) on an ad hoc basis on current procurement policy issues. SPPNs are circulated widely to Scottish public sector organisations and are also published on the SPD website. SPPNs supplement the policy guidance in this Handbook. Every contracting authority should ensure that it keeps up to date with and takes appropriate action in response to policy developments disseminated via SPPNs.

SPPNs can be found on the SPD website:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy/manual/policy-notes>

18.2 Scottish Procurement Action Notes

SPD also produces Scottish Procurement Action Notes (SPANs) on an ad hoc basis. One use of SPANs is to alert organisations to recent court decisions which do not influence procurement policy but which are nonetheless of interest to procurement professionals. SPANs are circulated widely to Scottish public sector organisations and are also published on the SPD website:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy/manual/SPAN>

18.3 Scottish Procurement Directorate website

The SPD website has a section dedicated to procurement policy:

<http://www.scotland.gov.uk/Topics/Government/Procurement/Policy>

18.4 Policy Forum

Membership of the Policy Forum comprises key stakeholders from each sector and representatives from each sectoral Centre of Expertise (COE). Its purpose is to advise on and support the development of new procurement policy. It will be consulted on all major policy development issues.

Further information on the Policy Forum has been published on the SPD website:

<http://www.scotland.gov.uk/Topics/Government/Procurement/policy/procurepolicyforum>

Annex A

Procurement Centres of Expertise

Procurement Scotland

Procurement Scotland is responsible for all national (Category A) contracts.
<http://www.procurement.scotland.gov.uk>



Central Government Centre of Procurement Expertise

Central Government Centre of Procurement Expertise (CGCoPE) is the procurement centre of expertise for Central Government departments, its agencies and NDPBs.
<http://www.cgcopecotland.gov.uk>



Scotland Excel

Scotland Excel is the procurement centre of expertise for local authorities.
<http://www.scotland-excel.org.uk/>



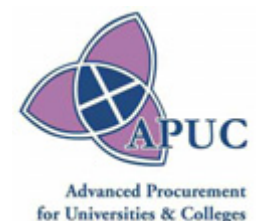
National Procurement, NHS National Services Scotland

National Procurement (NP) is the procurement centre of expertise for all NHSScotland organisations.
http://www.nhsnss.org/pages/divisions/national_procurement.php?id=30



Advanced Procurement for Universities and Colleges

Advanced Procurement for Universities and Colleges (APUC) is the procurement centre of expertise for Scotland's 62 universities and colleges.
<http://www.apuc-scot.ac.uk/home.htm>



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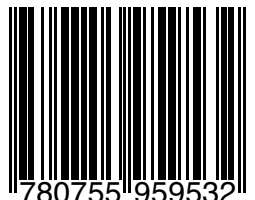
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Foreword

We are pleased to present our report on the findings of our review of Scottish public sector construction procurement.

A cornerstone of our report is our belief that as a nation we must make sure that we harness the power of public spending to benefit the sustainability of the Scottish economy to create and support jobs, as well as to provide the infrastructure which will keep Scotland working for generations to come. Our report contains a number of recommendations. Some of these are strategic in nature; others are very specific operational issues.

Annual Scottish public sector construction expenditure is around £4 billion. This is a vast sum, and the construction sector is a vitally important part of the Scottish economy. According to Construction Scotland, the 31,000 businesses that make up the industry in Scotland employ some 170,000 people¹. Construction Scotland also says that for every £1 spent on construction output, a further £2.94 is generated in the economy.

Promoting the sustainability and development of the construction sector includes ensuring that small and medium sized enterprises (SMEs) are given the economic oxygen to allow them to thrive, and if desired, to grow and develop and become the larger companies of tomorrow, as well as having regard to the significance of the construction industry in all parts of the Scottish economy, including its remote and rural parts where SMEs are particularly important.

Of course, whilst two-thirds of employment in construction in Scotland is in small firms which employ fewer than 50 people, we fully recognise that the current economic conditions are creating problems for companies of all sizes. And of course, times are tough for the public sector, which has to maximise value for money, in order that limited funds can deliver as much as possible.

¹ Building for the Future, The Scottish Construction Industry's Strategy 2013-2016, Construction Scotland

The two principles of achieving value for money and promoting the sustainability of the construction sector are not mutually exclusive, but current practices do need to be re-considered.

Some practices in public sector construction procurement, such as pre-qualification, are frequently over-elaborate and increase costs for both the public sector client and the private sector contractor. The public sector is rightly concerned to guard against the risk of challenge to the procurement process, but over lengthy documentation and processes can reduce transparency and have the opposite effect of what is intended by increasing costs for both parties, as well as the possibility of challenge. In the implementation of our recommendations, a guiding principle should be to seek to reduce costs by removing unnecessary procedures and simplifying the procurement process.

However, much of the construction procurement undertaken by the public sector is carried out by capable people well versed in how to procure good outcomes in an efficient and effective manner. In these cases we hope that our recommendations may encourage and enable the sharing of best practice.

Responsibility for the reform agenda does not rest solely with the public sector, and so some of our recommendations are addressed to the many companies and firms working for public authorities. The construction industry is characterised by contentious behaviours, and more collaboration with clients and within the supply chain is needed.

Our vision is of an approach which achieves better collaboration in design-led, efficient and effective public sector construction procurement and which has regard to sustainability in all senses of the word.

We record our grateful thanks to our excellent support team from the Scottish Government.

ROBIN CRAWFORD
Chair

KEN LEWANDOWSKI
Deputy Chair

1. Executive summary

Terms of reference

1.1.1 In October 2012, Scottish Ministers set the terms of reference for this report, which in summary are:

“To review the entire public sector and affordable housing sector construction procurement arrangements in Scotland and make recommendations to support improvements in efficiency, delivery and sustainability of construction procurement projects across the Scottish public sector...”

1.1.2 We have structured the report to reflect the issues raised with us and the actions we believe are required to achieve better procurement in public sector construction, but running throughout the report are a number of recurring themes which we believe, if adopted, will support better procurement. These themes are design-led outcome-focussed procurement, consideration of whole life cost at all stages, proportionality of the process to the size and risk of the contract, collaboration, simplification, sustainability and the balancing of risk between client and contractor.

Construction procurement in the public sector today

1.1.3 In this report, we look at the whole process of construction from inception, including feasibility, design, construction, occupation and deconstruction, and – to the extent that it is affected by the original works - the ongoing management of the asset.

1.1.4 Many bodies are involved in construction using public monies. In formulating our recommendations, we have met with around 120 different stakeholders, and have convened consultative groups. We believe that most of our recommendations should be applicable to all, but where there are sector-specific considerations, we will make this clear.

Governance, accountability and leadership

1.1.5 We believe that there is a need for clearer leadership to ensure that construction is properly planned using a design-led, whole of life cost approach.

1.1.6 There is significant potential to make construction more efficient by maximising opportunities for contracting authorities to collaborate and share best practice – particularly in the local government and social housing sectors.

1.1.7 We recommend a strengthening of the construction procurement policy function within the Scottish Government. We also believe that there is a role for a “Chief Construction Adviser”. With direct access to Ministers, this individual will champion the reform programme, work with industry and the public sector and act as a conduit between industry and Ministers.

1.1.8 Allocating lead responsibility for the implementation of each of our recommendations will be key to their success. We believe in broad terms that those which relate to policy should be the preserve of government, but that there is scope for those recommendations which relate more to the delivery of construction projects to be taken forward by other parties with relevant experience. Following the formal response to the report one of the immediate tasks for the Scottish Government will be to work with all key parties to determine a suitable division of responsibilities.

1.1.9 To make rapid progress we see a need for a mechanism to bring together the main spending authorities and industry. We envisage that this should report to the Public Procurement Reform Board within the existing governance structures for procurement reform, and would be led by the Chief Construction Adviser, or by some other independent figure with strong experience in construction or procurement, and credibility with industry and the public sector, until such time as the Chief Construction Adviser is appointed.

1.1.10 The existing Public Procurement Reform Programme, focussed mainly on goods and services, has made significant progress in improving procurement, driving efficiency, increasing transparency and standardisation of processes. We regard it as important to ensure that the implementation of our recommendations is carried out in a manner consistent with the existing programme.

Prioritisation and co-ordination of spending

1.1.11 Public bodies use different methods of arriving at the prioritisation of their capital spend. We recommend that there should be a review of the methods of strategic prioritisation of construction spending across the public sector in Scotland to identify best practice.

1.1.12 There is also a need for better co-ordination of construction spending and consideration of potential synergies between projects and programmes.

Pipeline

1.1.13 A consistent message from industry throughout this process is that having a firm idea of anticipated workloads is key to business confidence, and our recommendation is that each public body should annually publish a rolling forward pipeline of anticipated spending on construction. These pipelines should be collated and held together centrally.

Approach to market and importance of design

1.1.14 How a procurement exercise is carried out has a direct link to the quality of the end product. Critical to this is getting the design thinking and the project brief right at the outset.

1.1.15 Comprehensive business planning, focusing on outcomes, should take place and will require earlier engagement among clients, users, designers and contractors.

1.1.16 From project conception to contract award, there should be a focus on the design quality and whole life cost of an asset.

1.1.17 Framework agreements are a key part of the procurement landscape and can be more efficient and encourage more productive longer-term relationships with suppliers. However, where possible, SMEs should always be given the opportunity to participate.

1.1.18 We have met all five hubCos, their Territory Partnering Boards and the Scottish Futures Trust (SFT). The hubCo model has clear potential; however we recommend that further guidelines should be developed about certain aspects of their operation, including continuation of the work to develop a solution to the delay in payment of design fees until financial close.

1.1.19 The UK Government is currently trialling three models of construction procurement – Two Stage Open Book, Cost Led Procurement; and Integrated Project Insurance and we recommend that the Scottish Government should monitor developments in these trials.

1.1.20 Apart from the selective addition of clauses to take account of the particulars of a project, any variations to standard forms of contract should be kept to a minimum.

1.1.21 The issue of prompt and fair payment to contractors and sub-contractors is one we feel very strongly about. Our early recommendation of a trial of Project Bank Accounts has already been accepted by Ministers. Our other recommendations include that contractual terms between client and main contractor should consistently outline fair payment terms for supply chain participants and that clients should ensure that appropriate resources are allocated to contract management and enforcement of terms and conditions of contract.

Capability and capacity – people and skills

1.1.22 Many public sector organisations in Scotland have tremendous experience and expertise. A problem, however, is that this experience and expertise appears to vary significantly from one organisation to the next. We recommend that public bodies involved in construction must have access to the right mix of professionalism in procurement and construction. This can be achieved in different ways.

1.1.23 Some amendments are needed to the existing system of Procurement Capability Assessments (PCAs) to ensure they adequately cover the procurement and construction elements associated with infrastructure investment projects. All organisations procuring construction projects with public funding should be subject to PCAs.

1.1.24 We recommend that a baseline of current and required skills in construction procurement should be established, and a strategy developed to ensure those needs are met.

Capability and capacity – tools, systems and guidance

1.1.25 Fear of challenge has in part led to procurement processes and costs which can be wholly disproportionate to the planned spend.

1.1.26 We recommend that new guidelines setting out best practice on the end-to-end construction procurement process are developed and maintained. These should be in an accessible digitised form akin to the “Procurement Journey” for goods and services and the existing Scottish Procurement Construction Manual should form the basis for this work. Specific issues on which further guidance should be developed include:

- Public bodies rightly assuring themselves of the competence and skills of bidders, but doing so in a proportionate and sensible way.
- To the extent possible within the full scope of the law, contracting authorities taking the prior performance and behaviour of bidders into account when awarding contracts.
- Restatement and development of existing guidance to the public sector on how to deal with abnormally low tenders.
- Design guidance - ensuring that design requirements and quality are considered early and followed through to the finished outcome.
- Always making feedback available to both successful and unsuccessful bidders.

Access to contracting opportunities

1.1.27 If not already established, public sector procuring authorities should work together to develop forums with locally operating construction firms which would meet on a regular basis to discuss the pipeline of work, issues and opportunities, with a view to building greater understanding, transparency and improved outcomes.

1.1.28 We recognise the importance of ensuring appropriate access for SMEs to public construction contracts. We recommend that a support mechanism should be developed to help SME contractors and consultants understand how to compete for public contracts.

1.1.29 To ensure consistent sight of publicly funded construction contracts we believe that all projects which are advertised should be advertised on the Public Contracts Scotland (PCS) portal and the Scottish Government's proposed Procurement Reform Bill would require all works contracts worth at least £2 million and all supplies and services contracts worth at least £50,000 to be advertised on PCS. Contractors on major projects should also be encouraged to advertise sub-contracts on PCS where supply chains are not fully identified.

1.1.30 The Scottish Government should develop additional guidance for the public sector to ensure that the recently introduced standard pre-qualification questionnaire (PQQ) is used in a way which is proportionate and relevant to the needs of construction procurement, and monitor practices to ensure that this principle is achieved. The standard PQQ should continue to be refined and, where a pre-qualification stage is being used, its use should be mandated. The use of PCS Tender should be made mandatory for issuing Invitation to Tender (ITT) notices and awarding contracts – whether individual contracts or the establishment of frameworks.

1.1.31 Quick Quote currently operates as part of PCS Tender to allow the procurer to select a smaller number of suppliers to price the work they require. We recommend that public bodies should consider using Quick Quote for contracts under the amounts specified in the Procurement Reform Bill as requiring to be advertised on PCS. Public contracting authorities should, however, still satisfy themselves that they are being transparent and fair.

Sustainable procurement, innovation and emerging technologies

1.1.32 Economic, environmental and social sustainability are interlinked and we see a future where these are systematically afforded appropriate priority in construction procurement decisions.

Social benefits

1.1.33 Social benefits are commonly referred to as community benefits. We recommend that contracting authorities should have a clear strategic understanding of what they want community benefits to deliver through their public procurement; and that there should be guidance for contractors on how to design and deliver appropriate community benefit clauses.

Environmental sustainability

1.1.34 Industry has a key role to play in improving on-site waste management practices, as have clients in demanding good performance.

1.1.35 Greater linkage of capital and revenue funding considerations, in the context of the whole-life cost of a project, would provide better information on the true overall cost of sustainable approaches by focussing on the subsequent savings in revenue expenditure as well as the upfront capital costs. Designing for environmental sustainability can reduce whole life costs.

Innovation and Design

1.1.36 We would like to see the construction sector in Scotland coming together on a collaborative basis to promote design thinking, innovation and technological change, and we recommend that industry should work with the Scottish Government to promote modern methods of construction.

Building information modelling

1.1.37 We recommend that the use of Building Information Modelling (BIM) should be introduced in central government with a view to encouraging its adoption across the entire public sector. The objective should be that, where appropriate, construction projects across the public sector in Scotland should adopt a BIM level 2 approach by April 2017.

Data as an enabler of reform

1.1.38 There is currently a lack of comprehensive collated data for public sector construction spend in Scotland. Good quality data should be used as an enabler of reform both at a strategic and local delivery level.

1.1.39 This would be achieved through development of a comprehensive baseline position covering investment decisions, delivery parameters and contract spend in which the development of benchmarks and key metrics and the use of improved data to monitor, manage and improve performance can enable better-informed decision making and improved value for money. That learning can then be used across public sector construction to improve practice, out-turn and outcomes and reap full value from public investment.

What industry needs to do

1.1.40 We believe that some of the problems and issues raised with us as we have spoken to stakeholders are, at least in part, of the industry's own making.

1.1.41 We believe that the newly formed Construction Scotland Industry Leadership Group has a role to play in addressing the challenges we envisage for industry.

1.1.42 We have made suggestions as to some of the steps which the public sector can take to improve payment down the supply chain but we recommend that the Fair Payment Charter should be promoted more widely as the "norm" within the construction industry and that the industry considers how it can collectively make late payment of suppliers an unacceptable practice.

1.1.43 There are a number of other areas for focus by industry which include:

- consideration of what is prompting 'suicide bids', and how to arrest them, so that the customer and the contractor get a fair deal;
- working with the public sector to develop best practice models for the delivery of community benefits, and a shared apprenticeship model;
- embracing a design-led approach, modern methods of construction and new and emerging technologies such as Building Information Modelling; and

- considering what industry-led training programmes currently exist for those bidding for public sector work, and whether there is scope for these to be co-ordinated and developed further.

Resource implications and potential savings

1.1.44 Although we recommend that existing resources be used to the extent possible, more expert leadership in construction procurement will have cost implications as will, in the shorter term, the need for a change management team.

1.1.45 Audit Scotland attributed £327 million of savings, or four per cent of annual procurement spending, to the first two years of the procurement reform programme following John McClelland's 2006 report. It may be reasonable to expect that a proportionately similar level of saving should be achievable from the implementation of our recommendations as were achieved in the first stages of the wider Public Procurement Reform Programme, principally relating to goods and services. Assuming an identifiable annual construction spend of some £3.2 billion, as outlined in chapter 3, this would indicate savings of at least £120 million over the same timeframe.

1.1.46 Construction spending is different, however, and in addition, many of our recommendations speak to consideration of whole life costs. Taking account of the opportunities for savings in the initial capital spend set out in this report and the opportunities for savings over the whole life of the project, we hope that it will be possible to set targets for savings considerably in excess of the figure of £120 million, not just over the first stage of the construction procurement reform programme, but annually.

1.1.47 In the report we detail the areas in which savings should be sought. Further work is needed to understand and gather information on current spending and therefore the precise scope for savings. We recommend elsewhere that a baseline position be established for the current categories of spend and one of the early tasks should be to promote targets for savings following the gathering of this information. We have considered whether we should ourselves set a target, but the evidential base is currently lacking.

1.1.48 Whatever targets are set, it will be important for contracting authorities to report their spending and savings in a consistent manner in order that progress can be accurately measured.

1.1.49 For industry, we hope that the implementation of the recommendations of the report will lead to a better, more efficient approach which should allow a reduction in the initial costs of procurement of a project and the potential for savings in its delivery.

1.1.50 In appendix 4 we set out a summary of our recommendations, an implementation plan and timescales. We have sought to be detailed in our approach in order that due weight can be given to the many representations which we have received. We hope that the detail given in the report and the level of consensus which we believe we have achieved in the wide consultation preceding it will allow a rapid deployment of the necessary resources for its implementation. In the implementation of our recommendations, a guiding principle should be to seek to reduce costs by removing unnecessary procedures and simplifying the procurement process.

2. Terms of reference and method

2.1.1 In October 2012, Scottish Ministers set the terms of reference for this report, which are:

“To review the entire public sector and affordable housing sector construction procurement arrangements in Scotland and make recommendations to support improvements in efficiency, delivery and sustainability of construction procurement projects across the Scottish public sector and to ensure that Scotland’s public and affordable housing sectors make best use of both their and the industry’s resources.”

The full terms of reference are included in appendix 1.

2.1.2 We have carried out around 120 interviews with stakeholders, examined numerous submissions from individuals and federations and had support from government officials and Ministers. We also formed two consultative groups, one comprising representatives of the contracting industry (including some of the many trade and professional bodies) and representatives of the public sector client group and the other comprising only a grouping of public sector clients. The first of these groups met three times and the second group met twice. More detail is contained in appendix 5. We are very grateful for the time and careful thought given by all who have commented on the process.

2.1.3 We have also examined a wide range of reports which have been prepared in the past on public sector construction procurement reform including the work done by the Cabinet Office and Chief Construction Adviser in developing the UK Government’s approach². We have used questionnaires to gather evidence on practices in some areas of spend including social housing and hubCos. We have met with those responsible for the construction procurement reform programme in England and Northern Ireland and have gathered evidence of some procedures in other jurisdictions.

² Government Construction Strategy, Cabinet Office, May 2011

2.1.4 Although the current economic backcloth is leading to reductions in public spending, this report is not focussed within that context, but is intended to outline a series of measures which will be relevant whatever the economic climate.

2.1.5 This report is the next stage in the Scottish Government procurement reform process. In its preparation, we have had regard to the principles set out in the 2006 Review of Public Procurement in Scotland by John F. McClelland CBE³ (the McClelland report) and to the structures and processes which it promoted. Where possible, we have sought to build on these structures and processes rather than recommend an altogether new approach.

2.1.6 We have sought to define all abbreviations where they are first used and, in addition, a glossary of abbreviations is included within the appendices.

³ John McClelland also reported on ICT infrastructure in the public sector in Scotland in 2011, but references in this report to the McClelland report are to his 2006 report

3. Construction in the public sector today

3.1.1 There can be some confusion over what is meant by the term “construction”. In this report, we look at the whole life cycle process of an asset. This includes key stages such as inception, feasibility, design, construction, occupation and deconstruction. In addition, as required by our terms of reference, we have looked at the entirety of publicly funded infrastructure and construction spend.

3.1.2 But we recognise that for many parts of the public sector, a large part of their “construction” spending is not currently in putting up new buildings, or in laying new roads, but in the maintenance of existing assets. Whilst some of our recommendations are clearly only applicable to new builds, we believe that most of the recommendations are applicable also to those maintenance contracts which are deemed as works contracts by the Public Contracts (Scotland) Regulations 2012.

3.1.3 The majority of construction is not carried out or led by central government. Each sector is structured and funded differently, and this is reflected in the way in which they approach construction. We believe that most of our recommendations should be applicable across the board, but where there are sector-specific considerations, we make this clear. Appendix 3 offers an overview of the main spending sectors.

3.1.4 One such sector-specific acknowledgement is that the Scottish Government views Registered Social Landlords (RSLs) as “contracting authorities” as defined by the EU Procurement Directives and the Public Contracts (Scotland) Regulations 2012. We understand that this view is not shared by some parts of the sector itself. However, we are not able to resolve this question and, for the sake of this report, we have assumed that RSLs are “contracting authorities”, to which our recommendations will be relevant. Even if they were not “contracting authorities”, however, we suggest that there is merit in adopting many of our good practice recommendations.

3.1.5 Quantifying public sector spending on construction is not easy. We know from the procurement information hub that there was over £2.4 billion of spending on construction across the public sector in 2011-12⁴ (including £1.4 billion spent by local authorities).

3.1.6 However, the procurement information hub does not currently capture spending by Scottish Water (whose total capital investment in 2011-12 amounted to £491 million).

3.1.7 Neither does it capture spending by registered social landlords. Grants from the Affordable Housing Supply Programme for purposes other than council house building (which we have assumed to be reflected in the local authority spending figures) amounted to some £303 million in 2011-12⁵.

3.1.8 With these two additions to the data from the procurement information hub, we have been able to identify around £3.2 billion of spending on infrastructure as Figure 1 illustrates.

3.1.9 We suspect, however, that the total figure is actually somewhat higher. The procurement information hub does not capture revenue-based capital expenditure through the non-profit distributing (NPD) model, for which there was no spend in 2011-12 but in 2013-14 there is an expected NPD spend of £185 million.

3.1.10 There is also a lack of consistency in reported spending from different sources. Capital returns provided to the Scottish Government by each of the 32 local authorities put total gross capital expenditure on new construction, conversions and enhancement to existing buildings by local government alone at £2.1 billion in 2011-12.

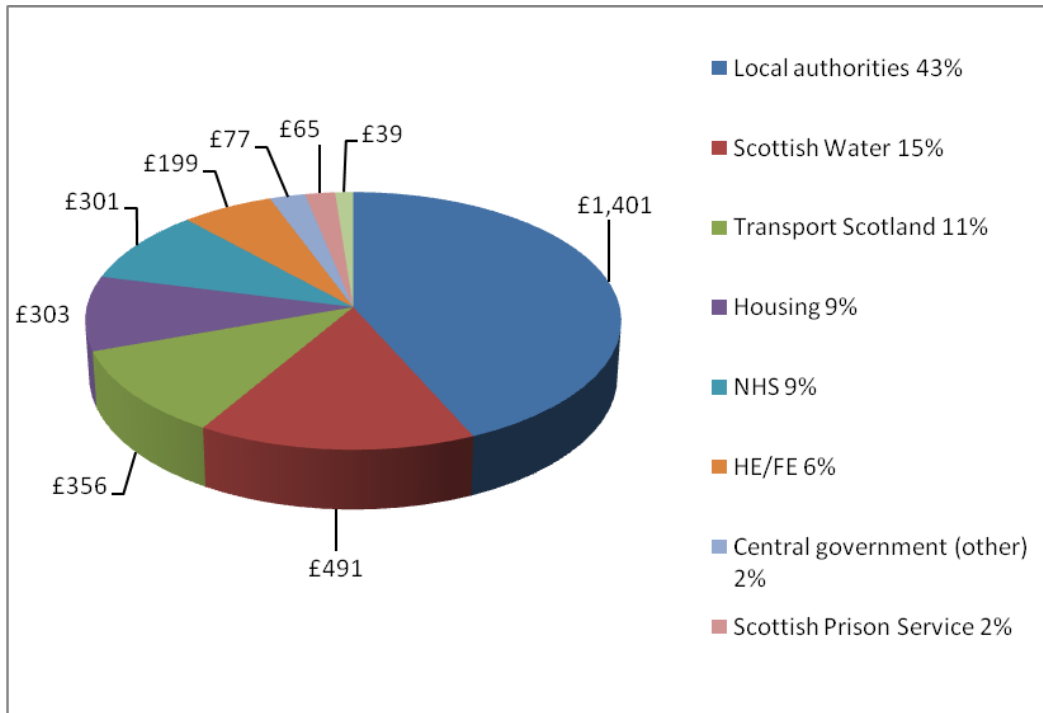
3.1.11 Furthermore, the level of grant funding to registered social landlords provided, on average, 38 per cent of the total cost of construction of new homes – implying that an additional £494 million of funding from other sources was also

⁴ Spending recorded under the Proclass level one classification 'construction'

⁵ Affordable Housing Supply Programme Out-turn Report 2011-12, Scottish Government

required. There is no central record of when this additional funding was leveraged, however, so we cannot be sure that this was all spent in 2011-12.

Figure 1 : Identifiable spend in 2011-12 (£ million) – Totalling £3.232 billion⁶



3.1.12 Taking all of this into account, we believe the actual level of publicly funded spending on construction to be in the region of £4 billion.

3.1.13 Chapter 9 of our report returns to the theme of the importance of data as an enabler of reform.

⁶ Does not include revenue-financed capital spending. Figures taken from the Procurement Information Hub, except for Scottish Water (figure is the total capital investment reported in its 2011-12 annual report) and housing (figure is the total level of Affordable Housing Supply Programme grant funding for projects other than council house building, which spending we have assumed to be captured under the local authority data)

4. Governance, accountability and leadership

4.1 Overview

4.1.1 Within the Scottish Government and wider public sector, there are a number of individuals professionally qualified in construction disciplines and others whose remit includes construction, including staff in finance, procurement, legal services and business policy. In addition, substantial capability exists within organisations such as Health Facilities Scotland, the Scottish Futures Trust, Transport Scotland and the Scottish Prison Service, as examples. However, this expertise is not drawn together to provide leadership and guidance to Scottish public sector construction procurement as a whole.

4.1.2 At present, without such leadership and guidance, public bodies concerned with construction procurement have developed their own guidelines which can be inconsistent and at times over-elaborate, although there is also much evidence of good practice.

4.1.3 There is a need for:

- a focal point for policy guidance to enable a more coherent approach which is compliant with procurement law but does not build unnecessary costs for client and contractor;
- policy leadership to ensure that infrastructure is properly planned using a designed, whole of life cost approach; and
- guidance to ensure that the vast Scottish annual spend on construction is carried out in the most economically effective way and supports the sustainability of the Scottish economy to the extent possible within the boundaries of EU law.

4.1.4 There is also significant potential to make construction more efficient by maximising opportunities for contracting authorities to collaborate, and share best practice – particularly in the local government and social housing sectors.

4.1.5 Following the McClelland report, a number of centres of expertise have been established to provide leadership and co-ordination in the public procurement of goods and services, and the main parties are described in appendix 3. However, the McClelland report touched only briefly on construction, and the structures which have been established are mostly not designed to deal with the particular aspects of this activity.

4.2 Strengthening construction procurement policy leadership

4.2.1 The implementation of our recommendations, and the development of policy relating to standards and best practice will require central co-ordination.

4.2.2 It is therefore our recommendation that there should be a strengthening of the construction procurement policy function within the Scottish Government to execute this role.

4.2.3 Recommendation:

The construction procurement policy function within the Scottish Government should be strengthened.

4.2.4 This policy function should be under the clear control of a senior manager within the Scottish Government, and should be suitably resourced to set the policy for construction procurement in Scotland, to be a central source for advice and to drive the adoption of best practice across the public sector. A combination of the wide range of construction procurement undertaken by the public sector in Scotland and resource constraints may mean this is achieved to some extent by collaboration with, or secondments from, other departments and agencies. There are already a number of staff who deal with aspects of construction within the Scottish Government, and the strengthened policy function should draw on existing resources to the extent possible. However, it will need a suitable blend of procurement, design and construction skills, at an appropriate level of expertise, and this will require some recruitment.

4.2.5 Although we recommend that this capability and capacity should be strengthened within the Scottish Government, and it is clearly appropriate that government retains responsibility for developing policy, we recognise the delivery expertise which has been built up across the public sector, and as such, it may be appropriate for Scottish Ministers to commission work to support policy development from those other bodies with proven expertise. All parties will need to ensure that they work closely and in co-operation with each other to ensure that their activities and functions are complementary and co-ordinated, in a manner consistent with the wider Public Procurement Reform Programme, and within the bounds of policy set by the Scottish Government. There must be no duplication of effort, and there is no room for “turf wars”.

4.2.6 The Scottish Government senior manager charged with strengthening its construction procurement policy should be required to ensure that stronger links are forged amongst the various parts of the Scottish Government and the wider public sector with an interest in construction as that policy is developed and implemented. It will be important to ensure that existing public procurement strategy, policy and systems fully accommodate and integrate construction and goods and services procurement across the public sector.

4.2.7 A number of public sector bodies deal with highly specialised aspects of infrastructure procurement and we have seen many examples of good practice. It is not intended that the Scottish Government should supplant or replicate this specialist knowledge. However, a more cohesive approach will require liaison with such specialist teams in order to ensure that the principles of good practice set out in this report are fully adopted across the public sector. One of the roles of the Scottish Government should be to identify and enable the sharing of such approaches. Short-term secondments from specialist bodies would be an excellent way of ensuring that best practice is garnered and shared.

4.3 Responsibility for implementing recommendations

4.3.1 In order for the measures which we outline in this report to succeed, we believe that it will be important to set out clearly who is responsible for taking forward them forward. In some cases, the recommendation itself makes such a decision obvious. As regards most of the recommendations, however, arguments can be made for a variety of different ways of allocating lead responsibility.

4.3.2 In general terms, we believe that policy should be the preserve of central government, but there is clearly scope for some of our recommendations, which relate more to the delivery of construction projects, to be taken forward by other parties with relevant experience.

4.3.3 We have not sought to draw that distinction in our report. Partly, this is because the distinction between policy and delivery is not always absolute. It is also important, however, that those who are charged with taking our recommendations forward are 'bought-in' to doing so.

4.3.4 Accordingly, one of the first tasks which will need to be undertaken immediately by the strengthened policy resource within the Scottish Government will be to work with all key parties to determine a suitable division of responsibilities.

4.3.5 Recommendation:

As a matter of priority, the strengthened construction procurement policy function within the Scottish Government should, in collaboration with other bodies key to the implementation of our recommendations, determine lead responsibility for delivering each recommendation.

4.4 Chief Construction Adviser

4.4.1 Our recommendation is that the construction procurement policy function within the Scottish Government should be strengthened. However, we also believe that there is a role for an independent champion of reform.

4.4.2 This will be a senior figure who has credibility with the public sector, with the industry and with Ministers. With direct access to Ministers, the task of this individual will be to champion the reform programme and identify and seek to eliminate slippages in the timetable for its implementation. The role will include working with industry on those aspects of the programme which are the responsibility of the industry and acting as a conduit between industry and Ministers.

4.4.3 **Recommendation:**

A Chief Construction Adviser (CCA) should be directly appointed by the Scottish Government

4.4.4 This would be an empowered role and the tasks of the CCA would be to:

- Champion the implementation of this report by challenging both the public sector and industry on pace and progress;
- Challenge industry to modernise and innovate its processes, practices and relationships;
- Be a supportive, enabling, but challenging partner of the Scottish Government; and
- Be a conduit for industry to raise strategic or policy concerns or to approach Ministers.

4.4.5 It is not intended or envisaged that the role of the CCA will be to allow the bypassing of commercial procedures for resolving disputes between industry and clients. Such disputes should be handled through the normal channels for dispute resolution.

4.4.6 The role of the CCA is likely to be a fixed-term appointment, capable of being refreshed and reviewed. We envisage that the appointee would be directly accountable to and have direct access to Ministers. While the individual must have strong expertise in construction and procurement, leadership strengths are likely to be equally crucial.

4.4.7 The CCA should be a member of the Public Procurement Reform Board (PPRB), which is discussed further later in this chapter.

4.5 Relationship to the wider procurement reform programme

4.5.1 We are conscious that there are already a number of working groups involved with the procurement reform agenda and have considered whether it is desirable to add construction to their remit. The principal groups driving the current procurement reform agenda are the PPRB and the Procurement Reform Delivery Group (PRDG).

4.5.2 Chaired by the Deputy First Minister, the PPRB's purpose is to provide strategic direction and support and monitor progress on the procurement reform agenda. Under its direction, the existing Public Procurement Reform Programme, focused mainly on goods and services, has made significant progress in improving procurement, driving efficiency, increasing transparency and standardisation of processes. As such, we believe the PPRB should be ultimately responsible for the success of the construction procurement reform programme.

4.5.3 The PRDG takes direction from the PPRB and reports to and provides assurance to the Board on the implementation of the reform agenda. It is responsible for ensuring that the reform programme remains on course to deliver benefits, and that obstacles to delivery and benefits realisation are removed or reduced. It collectively owns the existing reform delivery plan, and it leads, drives and facilitates the work to develop collaborative national and sectoral approaches to procurement across the public sector in Scotland. Membership of the Group includes the heads of the national and sectoral procurement centres of expertise.

4.5.4 The agenda of the PRDG is already full and its composition does not include any substantial construction focus. To make rapid progress with the construction procurement reform agenda, we believe there is a need for a mechanism to bring together the main spending authorities and industry. We envisage that this should report to the PPRB within existing governance structures for procurement reform.

4.5.5 Recommendation:

A mechanism should be established under the existing Public Procurement Reform Programme to bring together key stakeholders to drive the procurement reform agenda as it relates to construction.

4.5.6 The purpose will be to provide a strategic forum for discussion of implementation issues and agreement of joint plans of action. The focus should very much be on the strategic, rather than the operational.

4.5.7 Representation should be drawn from leadership levels across both industry and relevant parts of the public sector, including, but not exclusively, the main spending authorities. It may also be appropriate to include some representation from those who have responsibility for driving employment and sustainability policies. Clearly, some commercially sensitive agenda items may need to be discussed with only the public sector representatives present.

4.5.8 Members of such a grouping should be fully empowered to speak and act on behalf of their sector. In some sectors in particular, such as local authorities and industry, achieving this will in itself require some effort and co-ordination.

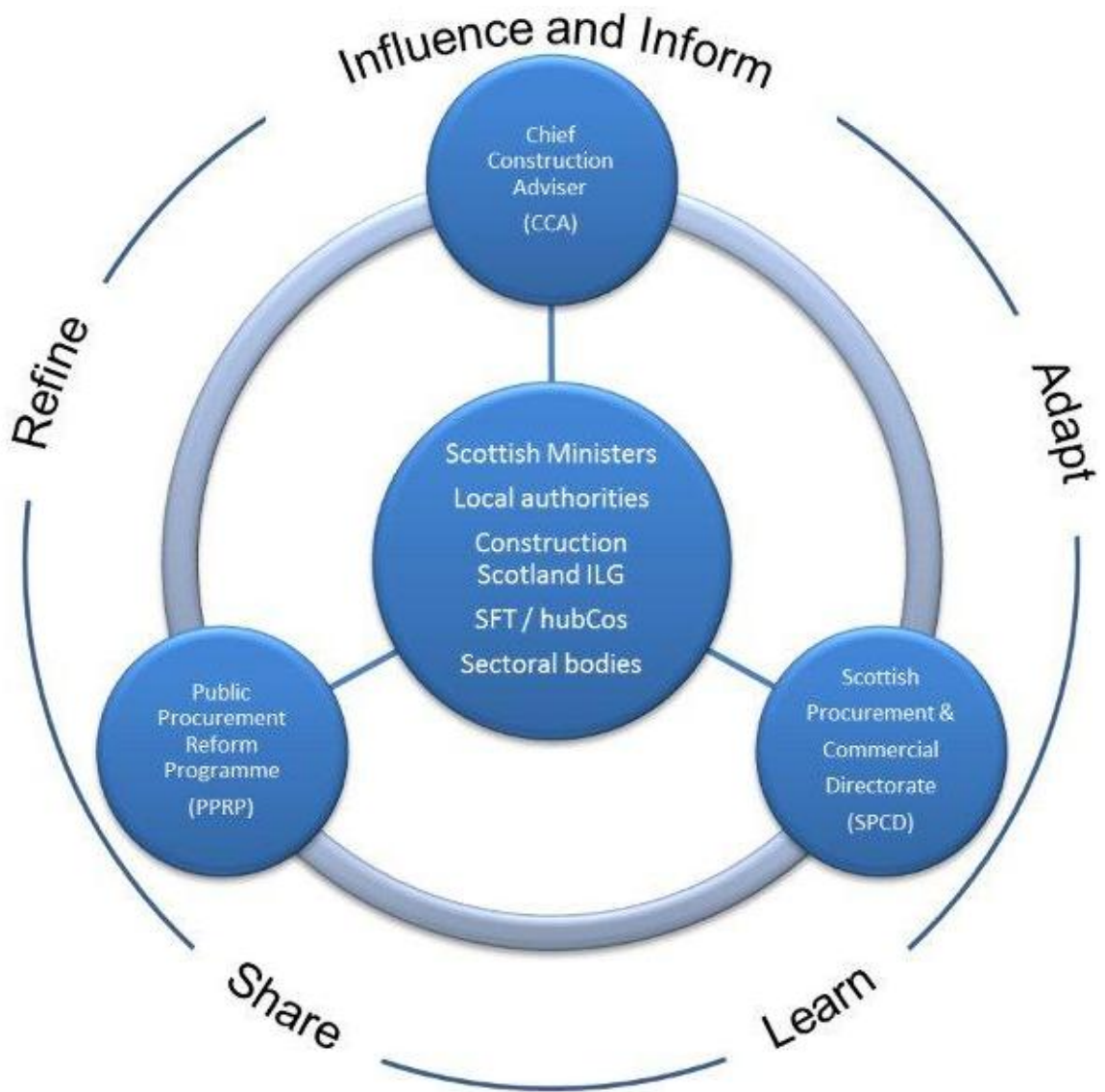
4.5.9 Our vision is that the CCA will lead this grouping, or that some other independent figure with strong experience in construction or procurement, and credibility with industry and the public sector, should lead it until the CCA is appointed.

4.5.10 One of the CCA's roles will be to challenge and to liaise with industry and we recommend that industry should be represented in this grouping. In chapter 10 we comment directly on the industry role in relation to the reform agenda. The Construction Scotland Industry Leadership Group has recently been formed and it provides an obvious vehicle for leadership engagement with industry. However, further thought may need to be given to the composition of this new group to enable it to carry out such a task.

4.6 Fitting the pieces together

4.6.1 The structure we envisage for implementing our recommendations and providing leadership thus comprises three parts. The first is to establish the role and reporting relationships amongst the Scottish Government and other key parties to the reform programme, maximising synergies with wider public procurement strategy, policy and systems; the second is the appointment of a Chief Construction Adviser; and the third is a mechanism to bring together the key spending authorities and industry. A fourth part could be regarded as the leadership within the construction industry itself.

4.6.2 In summary, our recommendation is that Scottish Government should own policy, advice and guidance; that work should maximise synergies with wider public procurement reform; that the Scottish Government should collaborate and commission work from those internal areas with relevant expertise, such as the Health Directorate's Capitals and Facilities Division, and other bodies, including SFT, to assist on delivery aspects. The role of the CCA is to champion the reform programme and to challenge the government, wider public sector and industry on pace and progress. A mechanism is needed to bring together the disparate parts of the public sector involved with infrastructure procurement and the industry to provide a forum for debating implementation issues and for driving the reform agenda, within the existing governance structures of the procurement reform programme. The linkages of our suggested approach can be illustrated in the following diagram:



5. Prioritisation and co-ordination of spending

5.1 Overview

5.1.1 This report contains many recommendations designed to address the strengthening of the procurement process. But we believe that it is important also to consider wider strategic aspects of the procurement of infrastructure in Scotland.

5.1.2 There are dangers in a silo approach which looks at demand only from the perspective of the individual authority. There is a need for more co-ordination to ensure that opportunities to achieve synergies are not missed.

5.1.3 Elsewhere in the report, we have commented on the need to start any procurement with a proper plan focussing on the desired outcomes. There is also a need to ensure that spend is prioritised and co-ordinated properly amongst the numerous authorities concerned with infrastructure procurement and in this chapter we bring forward a number of recommendations which are designed to build on the best practice which presently exists.

5.1.4 Our vision is of an improved approach to the prioritisation of spend and greater co-ordination amongst authorities, agencies and directorates.

5.2 Prioritisation of spend

5.2.1 One of the roles of the Scottish Government Infrastructure Investment Board (IIB) is to provide advice to Ministers about capital investment priorities. Priorities are set using the following four criteria, which are explained in the Scottish Infrastructure Investment Plan 2011 (IIP), and have much similarity with the aims and vision flowing from this review:

- Delivering sustainable economic growth
- Managing the transition to a low carbon economy
- Supporting delivery of efficient and high quality public services
- Supporting employment and opportunity across Scotland

5.2.2 Individual public bodies have their own models for evaluating and ranking projects. These are mainly based on the Treasury Green Book.⁷ A good example is Transport Scotland's model.⁸

5.2.3 However, we believe that there are opportunities for comparing the different methods used and identifying best practice, while recognising that specialised public bodies will have elements which are particular to their needs and that a pure financial appraisal has its limitations, particularly when dealing with socio-economic and environmental factors. Identifying and promoting common practice in prioritisation should assist the task of prioritisation of limited funds across the public sector in setting capital budgets, although we recognise that ultimately an overview has to be taken which cannot be informed by formulaic methods alone.

5.2.4 Audit Scotland recommended in 2011 that the Scottish Government should develop an overarching investment strategy which would help provide key information for prioritising and planning⁹. The IIB and IIP currently address these issues, although we believe there may be some scope to develop further that role.

5.2.5 **Recommendation**

There should be a review of the methods of strategic prioritisation and co-ordination of construction spending across the public sector in Scotland – to identify best practice and to ensure that investment decisions are informed by the use of appropriate techniques.

5.2.6 We believe that, in implementing this recommendation, the IIB should instruct investigation of the different methods of project prioritisation used by government to identify best practice including the use of economic appraisal tools, such as those which examine Gross Value Added (GVA), whilst the Convention of Scottish Local Authorities and the Society of Local Authority Chief Executives should determine the scope for introducing equivalent best practice recommendations to councils.

⁷ The Green Book: appraisal and evaluation in central government

⁸ Any transport project which needs Scottish Government approval or funding is appraised using the Scottish Transport Appraisal Guidance (STAG)

⁹ Management of the Scottish Government's capital investment programme, Audit Scotland, January 2011

5.3 Construction Pipeline

5.3.1 A consistent message from industry throughout this review process has been that having a firm idea of anticipated workloads is key to business confidence. This allows industry to recruit appropriately, to commit to apprenticeships and training, and to invest in capital resources. It also allows industry to provide a more efficient response to procurement, supporting suppliers to make early business decisions and allowing the development of integrated teams. Indeed, this was also one of the key messages as far back as the Egan Report¹⁰.

5.3.2 One of the ways this can be achieved is by publishing a clear statement, or pipeline, of what the public sector intends to procure over the coming years.

5.3.3 There is currently some published detail on the forward pipeline of work across the public sector. The Scottish Government's Infrastructure Investment Plan (IIP) was first published in 2008, and set out the infrastructure projects, with a capital value greater than £5 million, which the Scottish Government and its partners were proposing to undertake over the following ten years (though that period varied in some sectors). The IIP was updated in 2011, including additional information on the financing, delivery and strategic links of each project in the pipeline as an annex. That annex is now regularly updated and published on the Scottish Government website. This is to be applauded. The Scottish Government has recognised the issue, and has taken steps to address it. But the coverage offered by this pipeline should be extended to capture projects being led by other public sector bodies and also to provide greater detail and certainty around the status of these pipeline projects.

¹⁰ Rethinking Construction: The Report of the Construction Task Force, 1998

5.3.4 There is already some sectoral information in the public domain, such as is published by the Scottish Futures Trust¹¹, and in individual authorities' pipelines. So the first step to improve data collection is a relatively simple job of bringing together existing information into one place and one format. That is not enough on its own, however. For the pipeline to be of real value, the coverage also needs to be deepened to give more detail on projects – where they are in the business planning process, what hurdles are still to be overcome, what the anticipated approach to market is, and so forth.

5.3.5 This suggestion has received mixed responses from participants in our review. Almost everyone agrees that it is a good idea in theory. Some public bodies, however, have maintained that it would be impossible for them to provide this information because of the shorter-term way in which their funding is allocated.

5.3.6 We have some sympathy with the argument that short-term funding is not conducive to effective long-term planning, although that is beyond the terms of reference for our review. However, we do not accept that it follows that such pipeline information cannot be provided. Even if funding is not yet confirmed, it is perfectly reasonable to expect a well-managed organisation to know what capital works it intends to carry out over the coming years, given a range of funding scenarios, and to be able to articulate this in a manner which sets out the assumptions on which those projects are dependent.

5.3.7 We believe that it is in everyone's best interests to make as much information available as possible, and to be as open as possible about the status of plans for any given project. This will mean that published plans change. This is the crux of public sector concern – a fear of criticism arising from projects that are listed not proceeding. But the industry must play its part, too. Industry is pushing for this information, and if the public sector is to make it available, industry and its representatives must not only accept the risk that it is subject to change, but also recognise the danger that unreasonable criticism of such change would likely reduce that information flow. Some flexibility in the pipeline plan process has to be expected.

¹¹ Pipeline of Revenue Funded Projects, NPD and hub, April 2013

5.3.8 Recommendation:

Each public body should publish annually a rolling pipeline plan of anticipated spending on construction, setting out detailed known information on timescales for pre and post-contract award including any planned phasing, the anticipated approach to market, the status of required consents, the funding model being used and whether formally approved by their governing body. These pipeline plans should be collated and held together centrally, and should initially contain all anticipated work above a value of £4 million over the next two years, with a clear plan put in place to extend this to cover at least work worth £2 million or more, and a timeframe of at least three years.

5.4 Co-ordination of projects and programmes

5.4.1 Large-scale infrastructure projects are under the control of different public bodies. It is important, when major¹² projects are being contemplated, that sufficient linkages are made amongst these bodies to determine if it might be possible to achieve synergies. An example might be a major road project where water or telecommunications infrastructure opportunities may be identified in co-ordination with the road project thus potentially achieving a more cost effective outcome for the public sector as a whole.

5.4.2 In addition it is important to ensure that major projects are brought to market on a staged basis so as not to flood the market and risk inflating prices or creating artificial skills shortages. Such an approach will help the sustainability of the Scottish construction sector by promoting a more even flow of work. Audit Scotland said in 2008:

“there is a case for additional leadership and more deliberate co-ordination and management of the investment programme across government to ensure that it matches market capacity and capability.”¹³

¹² We intend ‘major’ projects to be those which are defined as such by the Procurement Reform Bill when, as expected, it becomes law. We understand that current proposals are that this will mean all projects worth more than £4 million.

¹³ Audit Scotland “ Review of Major Capital Projects in Scotland” June 2008

5.4.3 And as relates to major projects, the IIB has taken steps to strengthen the governance and oversight of the capital programme

5.4.4 But this principle of co-ordination of spend may also be equally relevant to smaller projects; for example a health centre allied with a new school or a community facility. Other scope for collaboration may be identified. It follows that, at the planning stage of any public sector construction project, consideration should be given to opportunities for synergies with other projects and our recommendations on pipeline will assist in enabling the identification of such opportunities. We recognise that much good work is now being done in this area by the territory partnering boards working with the hubCos (see section 6.4).

5.4.5 Audit Scotland recommended further in 2013 that councils should:

“actively look for opportunities for joint working with other councils, community planning partnerships and public bodies to improve the efficiency of their capital programmes. This should cover joint projects, sharing resources such as facilities and staff, sharing good practice and taking part in joint procurement.”¹⁴

5.4.6 **Recommendation:**

Public sector bodies involved in construction projects should be able to demonstrate that sufficient linkages are made between them. This should include consideration of appropriate opportunities for collaboration and for synergies with other programmes of work in the planning phase of all infrastructure spend.

¹⁴ Audit Scotland “Major capital investment in councils” March 2013

5.5 Regional strategic co-ordination

5.5.1 Local authorities in Glasgow and the West of Scotland are in talks about pooling funds for major infrastructure projects to enable a more coherent regional prioritisation of spend. This is following a model already established in England and Wales, where around six cities are understood to have established such schemes with surrounding authorities with many further arrangements in the UK (including Glasgow and the West of Scotland) in planning.

5.5.2 The collaboration in Glasgow and the West of Scotland may provide an exemplar for co-operation in infrastructure spend in the other main city areas of Scotland.

5.5.3 Recommendation:

Regional co-ordination of infrastructure spend should be considered by councils across Scotland.

5.5.4 As discussed at 5.4.4, the structure of Territory Partnering Boards and hubCos is providing a further valuable opportunity for collaboration and co-ordination. The Scottish Cities Alliance is also exploring further options for cities and their regions to develop pooled infrastructure investment funds.

5.6 Social Housing

5.6.1 A specific example of potential sectoral improvement of co-ordination is the social housing sector. There are some 40-50 housing associations in Scotland actively engaged in development work at any given time, as well as 23 local authorities building new council houses. A number of collaborative arrangements are in place and have been entered into in the past to achieve synergies in the procurement of new build with varying degrees of success. We believe that more co-ordination and co-operation within and between the RSL and local authority sectors is needed to help achieve improved prioritisation and cope with the current budget pressures and, along with the Scottish Government Housing Supply Division as the grant provider, that local authorities are well placed to help achieve this due to the strategic role they play in developing Strategic Local Programmes (SLPs) for affordable housing in their areas.

5.6.2 Recommendation:

Current Scottish Government Affordable Housing Supply programme arrangements provide for an enhanced role for local authorities in programme planning and prioritisation. Alongside Scottish Government, local authorities should therefore play a key role in helping to inform and influence procurement choices and delivery of local authority and RSL affordable housing supply in their areas, as well as looking more widely at potential synergies with neighbouring authorities.

5.6.3 In implementing this recommendation, new, more effective forms of collaboration in procuring affordable housing should be piloted in a small number of areas, to build on existing good practice whilst learning from previous partnerships. Pilots should set realistic expectations of outcomes, and engage local authorities and RSLs effectively.

5.6.4 Supplementary guidance should be developed by Scottish Government Housing Supply Division covering procurement choices and delivery options which local authorities should consider for the affordable housing programmes in their areas and discuss and agree as part of the SLP process.

5.6.5 Local authorities should take an interest in the work that is done to assess procurement capability and capacity and use this information to help inform their procurement choices for their SLPs.

6. Approach to market

6.1 Overview

6.1.1 How a procurement exercise is carried out – the approach to market, the contract terms and conditions, and the management of the project – has a direct link to the quality of the end product.

6.1.2 In this chapter, we examine some commonplace practices. Our recommendations in this area are designed to ensure that the importance of the way in which a project is procured is recognised both in terms of its impact on project delivery and on the economic wellbeing and sustainability of the marketplace.

6.1.3 Our vision is for a fair and transparent approach to contracting and to the allocation of risk.

6.1.4 There are many different ways in which a project can come to market. These each have their own advantages and disadvantages. We deliberately do not attempt to say that there is one ‘right’ way to take a project to market. There are however, some very wrong ways.

6.1.5 What needs to improve is the understanding of the risks and opportunities associated with different approaches, and the consideration which underpins a decision to follow any particular path.

6.1.6 Successful implementation of the recommendations in this chapter will depend to a very large degree on the capability and capacity of the people and systems (such as for pre-qualification) which are used. These elements are dealt with in detail in chapter 7.

6.2 The importance of design

Defining the project

6.2.1 At the risk of being accused of stating the obvious, it is important that before buying something, you should know what it is you want to buy – or perhaps more accurately, what purpose you want it to serve. In practical terms for construction, that means getting the business plan and design brief right.

6.2.2 And yet, however obvious it may be, we are certainly not the first to have felt the need to say it in relation to public sector procurement of construction. As recently as June 2013, the Scottish Government’s architecture policy articulated this very point:

“Design should be considered at the very outset of public procurement projects. It is an essential part of achieving value for money, by ensuring capital costs are competitive and that savings can be achieved on running costs without compromising the quality of the design. Getting the brief right up front can deliver long-term value.”¹⁵

6.2.3 We have also received a striking number of comments throughout this process indicating that not enough time or attention is being given to this pre-market stage. As one stakeholder told us:

“The most common failure of construction projects occurs right at the start of the project. For public sector clients, the briefing stage is generally not fully understood and, without detailed advice and support from construction professionals, projects are doomed before a blow is struck”.

6.2.4 Other studies have highlighted this. Audit Scotland in 2008 found some projects without an authoritative business case and concluded that there was scope to increase the quality of project appraisals generally¹⁶. In 2011, out of a sample of 55 projects, it found continuing evidence of gaps in the availability of time and cost information at initial approval stage for a number of the projects examined¹⁷. It found similar conclusions in relation to local authorities in a 2013 report¹⁸. In that report, Audit Scotland also found that many councils do not have established processes for developing and using business cases.

¹⁵ Creating Places: A policy statement on architecture and place for Scotland, Scottish Government, 2013

¹⁶ Review of major capital projects in Scotland; How government works, Audit Scotland, 2008

¹⁷ Management of the Scottish Government’s capital investment programme, Audit Scotland 2011

¹⁸ Major capital investment in councils, Audit Scotland, 2013

6.2.5 This can cause a number of problems. The most obvious of which is that it increases the risk of cost overruns in the construction itself. Indeed, Audit Scotland said in 2008:

“There needs to be clarity about the overall value and purpose of the project, its contribution to business goals and the optimum balance of cost, benefit and risk for its effective delivery. Inaccurate cost and time estimates at this stage undermine effective appraisal and value for money... Once a contract is agreed, significant changes to a project are likely to be costly and disruptive, and may not represent value for money”.

6.2.6 The critical nature of defining the project scope and brief is well acknowledged. In this chapter we look at some of the key elements that underpin a successful brief. All of this work should lead to a proper business plan for the project giving a good estimate of quality, time scales and likely cost.

Design-led procurement

6.2.7 We have written about our vision for an approach which achieves better collaboration in design-led, efficient and effective public sector construction procurement and which has regard to sustainability in all senses of the word.

6.2.8 By ‘design-led’ procurement, we mean a procurement process in which it is recognised that a consistent focus on achieving high quality in design processes and outcomes can potentially deliver a very significant range of benefits. These can include reduced capital, maintenance and lifetime running costs, increased functionality and efficiencies in service delivery, flexibility and better environmental performance as well as greater user satisfaction and a positive impact on communities.

6.2.9 Design-led projects are often assumed to be more costly, focussed on unnecessary quality or more complex in construction. In fact, a good design-led project begins by fully considering the needs of users and future users, and employs innovation and careful judgment to deliver the best product within budget. This ensures that buildings are not only fit for purpose, but future-proof. Furthermore, good design methods can facilitate the closer collaboration between procurers, suppliers and end users, before solutions are specified, which ensures that proposals are fully tested, and meet users' needs.

6.2.10 Design-led procurement requires that proper value is given to the quality of design proposals at tender analysis stage and that design is afforded proper consideration throughout the delivery period. Design costs often account for a fraction of the long-term project costs, but design can often have the biggest impact on efficiency, sustainability and overall success.

6.2.11 Indeed, the relationship between good design and controlling costs is long established. In 1998, the Property Advisers to the Civil Estate said that:

“Professional fees might... represent 1 or 2 per cent of the life cycle cost. Therefore the relatively minor additional cost of procuring higher quality services, in particular design services which focus on optimising the balance between capital cost and maintenance costs, will be far outweighed by long-term savings.”¹⁹

6.2.12 Much more recently, a study of a primary care design project published in September 2013²⁰, found that innovative design allowed a sizeable reduction in the gross internal floor area required, whilst importantly gaining the confidence of stakeholders in the design. This reduced the construction costs alone by more than 22 times the design fee to stage C.²¹

¹⁹ Guide to the appointment of consultants and contractors, Property Advisers to the Civil Estate, 1998

²⁰ Quality and Efficiency, value for money lessons and performance measures from the primary care reference design project, Architecture and Design Scotland and Scottish Futures Trust, 2013

²¹ In the Royal Institute of British Architects' Plan of Work, 'stage C' is the concept stage of design

6.2.13 But quite apart from the risk of cost overruns, inadequate design briefs also increase the risk that the end product will not adequately do the intended job.

6.2.14 The very best design briefs are developed in a way which involves the end users of the facility from the outset. End users in this context mean not only those who will occupy a building, or use a facility, but crucially also those who will maintain it.

6.2.15 For all but the most specialist of projects, those design briefs should also be outcome-based. In other words, a brief should set out what activity the facility should support, rather than specifying in great detail how this should be achieved. This then gives design teams greater scope for innovation.

6.2.16 Importantly, defining not only what the criteria are, but what success looks like, in language which is easy to understand, makes it easier for designers to come up with workable designs, and for the client to assess their worth.

6.2.17 Architecture and Design Scotland and Health Facilities Scotland currently work with the NHS to develop such design briefs – known as SCIM (Scottish Capital Investment Manual) Design Statements – for health infrastructure projects and monitor the progress of the project against these aims and healthcare design guidance. These design statements are required as part of the business case process by the Scottish Capital Investment Manual used by the NHS. We believe that there is much that other parts of the public sector can learn from this work.

CASE STUDY: ROYAL EDINBURGH HOSPITAL CAMPUS: MENTAL HEALTH SERVICES DESIGN STATEMENT

Architecture and Design Scotland supported NHS Lothian to form a SCIM Design Statement for the re-development of mental health services at the Royal Edinburgh Hospital.

The project team consulted with key managers at the hospital, clinical staff, the hospital's patients' council, as well as others, such as local advocacy groups for users of mental health services.

From that consultation process, a set of 'non-negotiables' for patients, staff, visitors, and for alignment to wider policy objectives was agreed. For each agreed 'non-negotiable', a series of benchmarks was also agreed. These set out the criteria which must be met, or gave views (written or pictorial) of what success might look like.

For example, one 'non-negotiable' for patients related to the ward layout:

"The wards must be welcoming and friendly. The layout should encourage interaction between patients and staff such that it feels like 'help is always at hand'.

The wards must offer attractive and therapeutic environments and encourage free, easy use and movement. The design and layout of these spaces must ensure that all parties feel safe and that the activities in one area do not negatively impact on those in another".

The accompanying benchmarks for successful design to meet this criterion are that:

- Staff working spaces should be, primarily, in patient areas, with limited use of private offices and 'staff only' areas.
- On entering the ward there should be an immediate welcome.

- The spaces and routes within the ward should not feel unduly clinical, with soft furnishings, colour, art and natural light being used to enhance the therapeutic environment.
- Although private areas (such as bedrooms) need to be a step away from public circulation, they must not feel distant from help. They should be relatively close to a social, shared area where staff and patients mix.
- There should be good sound attenuation between rooms.
- There should be no spaces where one might feel 'cornered'.
- Endless corridors with closed doors are not wanted. Patients need to be able to find staff easily (with a photo provided of an example of a design to be avoided).

The design of this facility is still in progress. However, we are told that the clear focus that this briefing and assessment process brings to the project is seeing ongoing improvements in the quality of the proposition being developed.

Design and build

6.2.18 Of course, there are some specific considerations if a project is being delivered under a 'design and build' contract. The advantages of design and build to the public sector are clear – it is in some ways a simpler undertaking for the contracting authority and achieves relative certainty about price, as design risks are by definition passed to the contractor. This can be a positive outcome for both parties.

6.2.19 That is not necessarily always the case, however. Several stakeholders have emphasised the need for design and build to be used both appropriately, and competently. As one interviewee summed up:

“There are occasions when design and build is perfectly sensible. But the more complex the project, the less likely it is you’ll get a solution through design and build which meets the client’s requirements. Design and build contractors are good at putting up buildings, they are not so good at understanding the core business of the client... who needs to articulate very

clearly what the required standards are, and then monitor their delivery, otherwise the design and build contractor's motivation is least cost".

6.2.20 Or, as one industry representative put it:

"The problems with design and build often come from a lack of brief from the client – you end up with design-as-you-build".

6.2.21 So, whilst design and build may be an attractive model for some clients, a contracting authority using design and build to deliver projects still needs to be an intelligent client. It still needs to have done the due diligence to understand its own requirements and to be able to articulate these in clear briefs. One stakeholder went so far as to say that:

"This form of contract likely needs stronger design skills in house (in comparison to a traditional procurement where the client has a direct relationship with an architect to assist them in this) in order to better brief for design and ensure the most appropriate design is being developed. Clients without any in-house design skills can lack the knowledge and confidence to appropriately direct the design outcomes."

6.2.22 The client also still needs to have sufficient knowledge of the marketplace to understand the 'right' price it should be paying, and have sound project management skills to ensure the project progresses as it should.

Pre-market engagement with industry

6.2.23 Once the client has determined what it needs from its intended facility, the next step is to determine how this can best be delivered.

6.2.24 It is important that the procurement strategy is developed in such a way that it allows the client to get the best product possible and the best value for money. This could be by taking advantage of emerging technologies, for example – or by ensuring that work is split into lots which are of suitable sizes to allow firms to put together competitive bids. It may even be the case that a particular need could be

fulfilled by the use of an existing standard design – tailored, as appropriate, to the specifics of the case.

6.2.25 There can be clear advantages in involving potential contractors in this discussion – they are often the parties with the key market intelligence.

6.2.26 And yet, this sort of strategic pre-market engagement happens all too rarely in construction. Sometimes, this is because of a perceived risk that it might put contractors in an advantageous position. We have found some good examples of it in practice, however – such as in the creation of the recent national biomass energy supply agreements, and in the way in which minor works are awarded from that same agreement – which demonstrate that pre-market engagement is possible and can deliver significant benefits.

CASE STUDY: BIOMASS ENERGY SUPPLY AGREEMENTS

A national framework agreement, providing for the design, build and operation of renewable heat installations was awarded by Scottish Procurement, on behalf of the public sector, early in 2013. It is noteworthy for two main points of engagement with industry which underpin it.

Firstly, before even advertising the framework, open invitations to a number of workshops across Scotland were extended to both potential suppliers and potential clients, during which participants were invited to discuss the likely requirements, their experiences of similar projects, and suggest points for the contracting team to consider.

These discussions, around issues such as competing standards, in turn informed the development of the procurement strategy, so that when the contract was advertised, Scottish Procurement was confident of being able to attract competitive bids which would both meet public sector requirements, and promote market consistency and growth.

Secondly, the procedure for using this framework is unusual, in that it specifically includes a 'pre-commercial' stage. A client's initial scoping and draft project brief is shared with all of the framework service providers, so that they may choose to engage in further development of the brief, visiting the site and contributing their thoughts on how best to shape it to achieve the intended outcome.

This may be an iterative process. At the end of it, however, the client should have a significantly improved – or at least tested – project brief. This is then used as part of a 'normal' mini-competition.

Work at 59 sites has so far been tendered in this way, delivering around 70mW of power. Annually, these projects are expected to save £900,000 and bring about a 7,500 tonne reduction in carbon dioxide emissions, exceeding what was expected when the framework was awarded.

A focus on whole life cost

6.2.27 Throughout the procurement process – from project conception to contract award, the public sector focus should always be on the whole life cost of an asset – that is to say, the costs of constructing, owning, operating, maintaining and disposing of the asset. Again, this is something which Audit Scotland has previously commented on. In 2008, it said:

“Explicit consideration of whole-life costing within project appraisals and benchmarking project costs remains relatively unusual... Public bodies should build whole-life costs into business cases and subsequent project reporting.”²²

6.2.28 This recommendation remains fundamental to achieving best value for money (the Property Advisers to the Civil Estate estimated the capital cost of a building to be typically only 10-20 per cent of the cost of owning and operating it over its expected life²³) and so we believe it to be worth repeating here, and worth underlining that where this is not already happening, it should, as a matter of priority.

6.2.29 Of course, the point has been made to us on several occasions that the best value options over the whole life of an asset often cost more upfront. A combination of constrained public finances and funding arrangements for the public sector – in particular, the separate treatment of capital and revenue funding – do not necessarily incentivise investment in the best value options over the whole life of an asset. Several bodies, such as the Westminster Sustainable Business Forum²⁴ have looked at this relationship.

²² Review of major capital projects in Scotland, How government works, Audit Scotland, 2008

²³ Guide to the appointment of consultants and contractors, Property Advisers to the Civil Estate, 1998

²⁴ Costing the Future: Securing value for money through sustainable procurement – The final report of the Westminster Sustainable Business Forum’s inquiry into sustainability in public procurement, 2008

6.2.30 These points are far wider than can be addressed by this report – or indeed by the Scottish Government acting alone. But we do not believe them to be valid reasons not to undertake proper whole life cost analysis. Indeed, in times of financial constraint, it is arguably even more important to understand the impact which capital investment decisions made today will have on revenue funding for years to come.

6.2.31 Key to increasing the public sector’s capability in this area will be improving its understanding of how its assets perform over a number of years. Chapter 9 of our report deals with recommendations to improve the use and understanding of data. Building Information Modelling (discussed in chapter 8) can also help, as the UK Government’s “Soft Landings”²⁵ approach has been trying to achieve. Chapter 8 also discusses the importance of considering whole life costing for a truly sustainable approach.

6.2.32 **Recommendation:**

Design and whole life costing should be afforded appropriate priority in any construction procurement process. A comprehensive business case and procurement strategy, focusing on desired outcomes and whole life costs should be developed. This will require the earliest possible engagement between clients, users, designers and contractors.

6.3 Framework agreements

6.3.1 Framework agreements have been a key part of the procurement landscape in Scotland following the McClelland report, and are being used widely in the construction sphere.

6.3.2 We have had significant, and mixed, representations on the role that frameworks play. From an industry perspective, one might cynically summate that a framework agreement is good if you are one of the named suppliers, and bad if you are not.

²⁵ The Government’s Soft Landings Policy, Cabinet Office, September 2012

6.3.3 But there are also some genuine and understandable concerns. With framework agreements typically lasting for several years, the impact on a firm of not winning a place on a framework agreement can be far greater than the impact of not winning a one-off contract. Smaller firms can feel this the most keenly, particularly if they have a history of working for the public body in question.

6.3.4 On the flip-side, of course, those firms who do successfully win places on a framework agreement have the opportunity to tap into a steady flow of work for the next few years, potentially to grow and to employ more people in their local area.

6.3.5 For its part, the public sector has been virtually unanimous in its view of framework agreements – they are more efficient in getting projects to market and they facilitate the development of more integrated supply chains offering opportunities for clients to benefit from improved value for money arising from simplified ‘call-off’ processes and potentially from economies of scale, but also for firms in the supply chain to develop business relationships with each other creating an environment that encourages capacity and innovation.

6.3.6 And indeed, there are many examples of framework agreements which have achieved exactly this. They are an integral part of the way in which the Scottish public sector procures, and we fully support their role in the procurement process.

6.3.7 There is already a good deal of guidance available to public sector purchasers on the setting up and use of framework agreements as part of the Procurement Journey on the Scottish Government website, and in Scottish Procurement Policy Note (SPPN) 05/2010.

6.3.8 However, across the board, more needs to be done to ensure that when framework agreements are used, SMEs’ access to work is considered, and, wherever possible, SMEs are given a reasonable opportunity to bid for work. Some framework contracts do this already, and lessons should be learned from these.

6.3.9 Economic impact cannot currently be used as a contract award criterion – for example, a contracting authority cannot use the fact that a firm is a local SME as any part of the basis on which it awards it a contract, or a place on a framework.

6.3.10 However, frameworks can be set up to make it easier for that same local SME to compete, fairly, for some of that work. For example, the framework might be split into a number of lots on the basis of geography or value of work, or decisions taken not to aggregate demand to a level at which SMEs cannot realistically compete. This should always be a key consideration in developing procurement strategies – particularly in remote and rural communities.

6.3.11 Another concern raised with us is that some frameworks are set up – at significant cost to all parties concerned, but then the volume of work envisaged does not materialise. Whilst this will sometimes happen as circumstances change, it is clearly undesirable, and should be avoided. In particular, we are told that some contracting authorities set framework agreements up, or enter into them, with the intent of using the terms agreed as a bargaining tool with which to obtain better rates from firms not part of the agreement. Whilst this may drive some short term savings, undermining the standing of frameworks is unlikely to lead to long-term benefits.

6.3.12 **Recommendation:**

Guidance on best practice in the use of framework agreements should always be followed, in particular in allowing opportunities for SMEs to participate.

6.3.13 Existing guidance on the use of frameworks, such as SPPN 5/2010, should be built upon and tailored to a construction setting. This should aim to ensure that frameworks follow best guidance, in a way which does not discriminate against Scottish SMEs. The guidance should take account of the findings of the report by the Working Group of the UK Government Procurement and Lean Client Task Group on the Effectiveness of Frameworks.²⁶ Assessment of how well contracting authorities are performing in this regard should be developed as part of the Procurement Capability Assessment.

²⁶ Government Construction Strategy “Final Report to Government by the Procurement / Lean Client Task Group”, appendix G, 2012

UK-wide frameworks

6.3.14 A specific issue which has been raised is the use of UK-wide frameworks, or the use by public sector bodies in Scotland of frameworks set-up by regional purchasing bodies outwith Scotland – the latter an issue which also exercised Cuthbert and Cuthbert, who concluded that:

“Unless there are very good reasons to the contrary in any specific case, Scottish purchasing organisations should not adopt framework agreements which have been negotiated by regional purchasing bodies elsewhere in the UK”²⁷.

6.3.15 We have already noted in this chapter the importance of frameworks to the public sector. However, where Scottish, regional or local framework agreements do not exist, purchasers may turn to UK-wide or other frameworks to meet their needs and potentially reduce opportunities for Scottish firms.

6.3.16 We accept that there are some circumstances in which it is appropriate to use a UK-wide, or other regional framework. The economies of scale offered by such frameworks may make their use manifestly the sensible choice, or they may offer something highly specialised and not readily available in the Scottish market-place, some may even be Scottish-led. There are also some national frameworks which are alert to the potential impact they may have on local supply chains and have developed key performance indicators (KPIs) to monitor and encourage access to opportunities within their framework.

6.3.17 Whilst contracting authorities cannot legally discriminate in favour of firms because of their location or size, we do believe that wherever possible, Scottish SMEs should be given a fair and reasonable opportunity to bid for work.

6.3.18 This argument can also logically be extended to Scotland-wide frameworks, which may not be as attuned to the various regional economies as a more localised framework – although it should be noted that even national frameworks can be broken into regional lots.

²⁷ Using our Buying Power to Benefit Scotland – the case for change, section 8, Cuthbert and Cuthbert, The Jimmy Reid Foundation, 2012

6.3.19 There is a balance to be struck, however, between the additional benefits which might be achieved by ever-increasing local procurement, and the efficiencies which might be offered by larger framework agreements.

6.3.20 We do not attempt to say where this equilibrium is to be found. It varies in each instance, and depends on factors such as the capacity and competition within the 'local' market, the anticipated demand within that area, and price.

6.3.21 Price is always, rightly, a key consideration in any public procurement decision, and the recent squeeze on public finances has no doubt brought it into sharper focus. We are keen, however, that in undertaking their cost-benefit analysis, contracting authorities should place sufficient value on improving access to the local market – both in terms of growing a competitive market base to respond to future tenders, and also in terms of the value inherent in supporting economic growth.

6.3.22 **Recommendation:**

When used inappropriately, UK-wide frameworks and frameworks negotiated by regional purchasing bodies elsewhere in the UK can have the effect of preventing SMEs from participating in public procurement. Guidance should be developed and implemented on the appropriate use of such frameworks. This guidance should pay particular heed to the value of growing local economies.

6.4 hubCos

6.4.1 hubCos are described in appendix 3, and will clearly be an important part of the construction landscape in Scotland over the coming years. In the spring of 2013, we asked each hubCo what the value of its pipeline of work was – collectively it already amounted to more than £1.5 billion at that stage.

6.4.2 The hubCos are still relatively young (indeed the South-West hubCo was formed only in late 2012), and it is too early to pronounce definitively on their efficacy. However, there is undoubtedly tremendous potential for hubCos to deliver real value for money – building still further than framework agreements on the Egan principles of long-term partnering. hubCos can also potentially get projects to market more quickly than can traditional procurement exercises.

6.4.3 A hubCo's performance is monitored by its territory partnering board (made up of representatives of the public sector participants), and measured by a series of KPIs. These show that hubCo projects are successfully delivering socio-economic and environmental benefits. Figures supplied to us by the Scottish Futures Trust in May 2013 show that out of £50 million worth of projects recently delivered and procured by hubCos, some 74 per cent of the prime cost value was awarded to SMEs (who were able to tender for 82 per cent of total tendering opportunities). Notwithstanding this performance in providing work for SMEs, there may be a case for setting minimum contract values for taking projects through hubCos in order that small projects can be awarded using traditional means of procurement.

6.4.4 Some concerns have been expressed to us about hubCo operations, however. For example, there is a specific issue relating to the payment of design fees. Under the standard hubCo operating model, designers do not get paid their design fees until financial close. This means that they have to bear a heavy cash flow burden for anything up to a year.

6.4.5 We have had significant representation from the design community on this issue, and we agree that it is not a reasonable or sustainable way of working. We are reassured that hubCos and the Scottish Futures Trust recognise these concerns, and we understand that a potential solution is close to being found.

6.4.6 Other, more general, concerns have also been expressed to us concerning how the public sector can be sure that hubCos are delivering value for money, particularly given the length of the hubCo agreements (potentially up to 25 years).

6.4.7 We have been told that there are several key points in the development of a hubCo project where value for money is assessed. We understand that all new projects must be benchmarked against comparable projects before the initial 'new project request' is submitted. We further understand that during hubCos' development of the project, pricing reports and further comparisons must be produced, and that prior to the submission of the stage two price, a minimum of 80 per cent of the prime cost must have been tendered. Compliance with value for money measures must be achieved for every project, and is reported as a KPI monitored by each hubCo's Territory Partnering Board, which could potentially remove the hubCo's right to exclusivity if performance is not up to standard.

6.4.8 These arrangements seem broadly sensible, although it does strike us that there is still some scope for standards to vary amongst hubCos, and we would suggest that there is potentially therefore a greater role for the National Programme Board, which oversees the hubCo programme, both in ensuring that value for money is being consistently achieved across the five different territories, and in ensuring that it is seen to be achieved.

6.4.9 That latter point is particularly important, as public and industry confidence in the operation of the hubCos will be key to their success. There is much concern in the industry at the moment about the effect of being "locked-out" of public sector work for 25 years. We are told that procedures for refreshing the hubCo's supply chains are in place, but this is clearly not widely known or understood; we would suggest that this needs to be better communicated to the industry at large.

6.4.10 The National Programme Board also has a key role to play in ensuring that as the hubCos are now all moving into a fully operational phase, they are able to learn lessons systematically from each other about how best to make the model work.

6.4.11 **Recommendation:**

Further guidelines about certain aspects of the operation of the hubCo model should be developed.

The guidelines should include:

- Continuation of the work to develop a solution to the issue of the delay in payment of design fees until financial close
- Consideration of expanding existing arrangements for monitoring performance, the achievement of value for money and design quality and the continued compliance with the terms of the original contract advertisement
- The exchange of information between hubCos to reinforce best practice and share ideas
- Consideration of the desirability of setting minimum contract values to be delivered by hubCos.

6.5 'Self-delivery'

6.5.1 We have come across repeated concerns about the practice of awarding main contracts for small projects to large firms who then immediately sub-contract to smaller, or more local, firms. This can build in an unnecessary layer of overhead and profit.

6.5.2 Smaller firms have also told us that in such circumstances they are often getting a raw deal from acting as a sub-contractor – by contracting directly with the client, they assert that they would benefit from greater control of their own projects, and a higher margin, whilst the client would benefit from a lower cost and a direct relationship with those carrying out the work.

6.5.3 Scottish Water has embarked upon a programme designed to create fit-for-purpose supply chains that increase what they refer to as 'self-delivery' of programmes of work by alliance and joint venture partners, rather than significant work passing through primary contractors to sub-contractors. It achieves this by specifying and contracting on the basis of an approved level of direct delivery which it believes provides the most efficient allocation of work between "self-delivery" and the use of the sub-contractor market.

6.5.4 Scottish Water expects to achieve efficiencies from project costs through productivity improvement, reduced fee on fee, innovation and a more aligned and partnering engagement by pursuing this route.

6.5.5 Of course, there are some risks. It could mean that less work ends up filtering through to the smaller, local firms – although Scottish Water tells us that the evidence to date is that they are tending to contract more directly with SMEs. We understand that the proportion of SMEs in the Scottish Water supply chain has increased from 60 per cent to 71 per cent over the past few years, with over 90 per cent of total spend going to business that have locations and resources in Scotland.

6.5.6 As part of the fit-for-purpose supply chain design, Scottish Water has created regional-based contractor frameworks covering the Highlands, Argyll and Islands. These are specifically designed for smaller value capital work. We understand that Scottish Water intends to create further regional frameworks covering the Borders and the North-East.

6.5.7 The key to this SME strategy will be continuing to ensure that contracts are of a suitable size and nature for SMEs to perform.

6.5.8 However, one reason often cited in favour of contracting with a larger firm which then sub-contracts is that it simplifies the project management for the client, who only has to deal with one firm, instead of a multitude (in the case of aggregated projects). There is clearly some merit in this argument, although, regardless of who is delivering a contract, clients will always still need some contract management capacity. It has also been put to us that clients sometimes favour larger contractors as they instinctively feel that they provide greater reassurance of standards – such as in health and safety or financial stability.

6.5.9 The Scottish Water approach offers potential, and should be explored.

6.5.10 Recommendation:

The potential for savings to be delivered from clients enforcing the ‘self-delivery’ of contracts by main contractors should be investigated, with particular reference to the work being undertaken by Scottish Water.

6.6 ‘New models’ of procurement

6.6.1 The UK Government is currently trialling three models of construction procurement – Two Stage Open Book, Cost Led Procurement; and Integrated Project Insurance²⁸. Some elements of the processes included in these trials are already being used by parts of the public sector in Scotland.

6.6.2 In the Two Stage Open Book model, framework suppliers are asked to provide an outline brief and cost benchmark for a project, from which one is chosen to work up a proposal on the basis of an open book cost. A key outcome anticipated through the use of this model is to reduce supply chain bidding costs even further.

6.6.3 In cost-led procurement, the client puts in place a framework agreement with one or more integrated supply chain teams, with selection based on the ability both to beat a prescribed cost ceiling in the first project, and to achieve further cost reductions in later projects through continuous improvement. For each project, provided that at least one of the supply teams can beat the prescribed cost ceiling, whilst maintaining the required quality, it is selected to deliver the work (if more than one can, they are scored on their bids). If none of the teams on the framework can beat the cost ceiling, the project is advertised normally.

6.6.4 Integrated project insurance is a new form of insurance which covers cost overruns up to an agreed liability cap. Key to the delivery of projects under this model is an assurance team which monitors and reports to the insurer on the key project risks.

6.6.5 These trials are of interest, although they are not yet at a sufficiently advanced stage for us to have formed a view on their effectiveness.

²⁸ Final report to government by the Procurement/Lean Client Task Group, July 2012

6.6.6 **Recommendation:**

Developments in the UK Government’s trials of its three ‘new methods’ of procurement should be monitored and guidance developed for their use in Scotland, if appropriate.

6.7 **Contract selection, terms and conditions**

Contract forms

6.7.1 Through our many stakeholder engagement meetings it has become obvious that public sector clients are using a myriad of contract forms.

6.7.2 In some cases, there has been a clear selection process applied to contract choice which addresses the nature of the work, the procurement method and the risks lying within a project.

6.7.3 In others, it appears that there has been much less thought and planning and rather a continuation of “tried and tested” historic practice, regardless of whether the contract type is the best fit or approach for the project in question. It is noticeable in some sectors that newer contract forms such as NEC3 and PPC2000, which promote a partnership approach to project delivery, are less widely used.

6.7.4 We do not seek to promote any particular contract form, but we find it self-evident that thought must be given to the pros and cons of whichever contract form is used for a given project.

6.7.5 **Recommendation:**

Thorough consideration of options must be applied to contract selection as part of the pre-commercial stage.

6.7.6 To help achieve this recommendation, an updated comparison matrix of the main standard contract types currently available should be compiled and regularly reviewed and maintained.

6.7.7 We also believe that by recording the contract types being used for contracts awarded through Public Contracts Scotland (PCS) (see paragraph 7.3.9), greater intelligence on the usage of contracts could be accumulated and the public sector could more readily share experiences of different contract types and how well they have delivered. This will in turn help to make future contract selection more informed and the public sector client more confident in selecting the contract type most appropriate for the project.

6.7.8 Support should be available to authorities in contract selection decisions, making clear that ownership of risk and decision-making will still rest with the individual contracting authority.

6.7.9 On project completion and during post-occupancy evaluation, contracting authorities should also consider how well their selected contract type has delivered for them. This should be done in terms of quality of the end-product, value for money of both the project and the resource required to contract manage it, the collaboration it allowed and whether it delivered any additional benefits such as innovation. This learning should then be applied to future projects.

Risk allocation and contract amendment

6.7.10 Another issue with current practice in contracting is the level of modification to which some standard contracts are being subjected. This is often intended to shift more risk on to the contractor.

6.7.11 Sometimes this may be appropriate. However, this is not always the case. Risk should lie with the party most able to understand and manage it, and if that is with a contractor, be priced accordingly.

6.7.12 Chapter 7 discusses the need for skilled and capable teams to be involved in every construction exercise. Part of their role is to understand both the risks involved in a project, and the risk appetite of their organisation.

6.7.13 That level of understanding informs the decision-making process on risk allocation in contracts. Once the level of risk has been quantified, an organisation might judge that the likely cost in choosing to accept that risk itself is less than the cost of paying another party to manage it – just as the government self-insures the civil estate, rather than paying for commercial insurance, for example.

6.7.14 However, therein lies a key point. We have been told – anecdotally, at least – that some client authorities view the current economic climate as an opportunity to pass risk off to contractors wholesale, without them then having an opportunity to price accordingly.

6.7.15 Public sector buyers clearly have an obligation to get the best deal for the taxpayer that they can. This must be sustainable, however. Risks will often not be realised, but inevitably sometimes they will be. If contractors have accepted these risks without explicitly factoring them into their prices, there is a very real danger of this driving undesirable behaviours – cutting corners on quality in an effort to claw that cost back elsewhere, for example.

6.7.16 Alternatively, just as some clients are alleged to be using their current market strength to push risk on to contractors, so the main contractor might use its market position to push that risk to sub-contractors, and so on down the supply chain until the risk lies wholly inappropriately with the party least able to manage that risk, and most vulnerable should that risk materialise. This can lead to insolvencies and significant disruption to the planned programme for the project

6.7.17 If – as some people have suggested to us – this is reflective of current practice in some areas, it is clearly neither sustainable nor desirable.

6.7.18 **Recommendation:**

There must be an open, mature and reasonable discussion between parties when deciding on the allocation of risk.

6.7.19 On the part of the client, this means accepting that the party who accepts the risk should be fairly compensated for so doing.

6.7.20 There is a role for industry, too, in addressing its own behaviour. We speak in chapter 10 about the need for contractors to act reasonably towards their supply chain – and so, just as the public sector client should engage in constructive discussion about allocation of risk with the contractor, so too should the contractor with its supply chain.

6.7.21 The amendment of contracts presents two further main risks. Firstly, that additional clauses may be incompatible with the remainder of the contract, and may lead to contractual disputes, or to clients being liable for costs which they thought that they had passed to the contractor.

6.7.22 Secondly, that, as the complexity of the contract increases, parties to it face increasing legal costs. Indeed, one Scottish contractor told us that in both 2011 and 2012 their legal bill charged to contracts was six times higher than it was in 2006.

6.7.23 Whilst not in any way seeking to diminish the rights or duties of either party to a contract to protect their interests with appropriate contract conditions, we do believe that there has to be a greater recognition of the pressures which can be caused by over-zealous amending of standard forms of contract.

6.7.24 **Recommendations:**

Any variations to standard forms of contract should be kept to a minimum and used only when absolutely necessary to take account of the particular circumstances of the project.

We also recommend that any such amendments should be clearly highlighted within contract documentation so that client and contractor are clear on the variations being imposed to the standard terms.

Painshare / Gainshare

6.7.25 The construction industry has a background of confrontational attitudes between client and contractor. This is not an issue which the public sector alone can resolve and indeed it would be naïve to think that cultural attitudes can be changed quickly.

6.7.26 However, we have seen evidence of good practice which incentivises both parties to work constructively towards the same ends. One way in which this is achieved is by the use of so-called ‘painshare / gainshare’ arrangements, whereby the ‘pain’ of cost overruns is shared, as is the ‘gain’ of savings.

6.7.27 The gain sharing element of this equation has the potential to be a particularly strong driver of innovation in the supply chain. This is used successfully in the health sector as part of the Frameworks Scotland contracts, amongst others. In Frameworks Scotland contracts, gainshare is split 50:50, although the sharing is limited to the first five per cent of savings, so as to incentivise accurate initial costings.

6.7.28 **Recommendation:**

Specific guidance should be developed to help contracting authorities to decide when and how to use painshare / gainshare arrangements.

6.8 Payment terms

6.8.1 The issue of prompt and fair payment to contractors and sub-contractors has received much political and media attention in recent times. This is unsurprising - cashflow is critical to the success of businesses at any time; in the current economic environment where finance can be extremely difficult to raise, it is a constant worry for many firms in the construction industry. You do not need to look far to find examples of otherwise sound firms failing due to cashflow shortages – often caused by delayed payment.

6.8.2 The Scottish Government’s efforts in recent years to standardise its contractual payment terms to 30 days, and to aspire to pay all suppliers within ten days²⁹ are broadly welcomed, acknowledged and appreciated by the industry. Other public bodies have adopted similar strategies.

²⁹In 2011-12, the Scottish Government, its Executive Agencies and the Crown Office and Procurator Fiscal Service made 94.4 per cent of all payments within ten days: The Scottish Government Consolidated Accounts for the year ended 31 March 2012

6.8.3 We are told, however, that not all public bodies have adopted even the 30 day payment term – or if they have, that they are not necessarily meeting this objective.

6.8.4 **Recommendation:**

All public bodies should adopt a maximum 30 day payment term to their suppliers, as detailed in Scottish Procurement Policy Note 08/2009, and this should form the target against which performance in meeting payment terms is monitored as part of procurement capability assessments (unless shorter targets have already been adopted by the organisation in question).

6.8.5 Payment to main contractors from public sector clients is only a small part of the problem, however. There is an endemic culture of extended payment terms in the construction industry (which is not necessarily the same thing as late payment), particularly from larger (tier one) contractors, to sub-contractors. Recent research by University College London (UCL) found that:

“as a whole, construction firms take much more trade credit (from their suppliers) as a proportion of their balance sheet than do firms in the rest of the economy. They also give much more credit to their customers as a proportion of their balance sheet... Tier 1 firms were found to be net receivers of trade credit, whereas tier 2 firms were found to be large net providers of trade credit... In other words, it is highly likely that the trade credit flow from tier 2 to tier 1 contractors substantially exceeds in size the trade credit flow from suppliers outside the construction industry to tier 2 contractors”.³⁰

6.8.6 We believe that this has to change. Most importantly, it has to change because the pressures which it is placing on sub-contractors are unsustainable and can cause insolvencies and damage to the economy as a whole, but also because such practices are inherently unfair.

³⁰ Trade credit in the UK Construction Industry: An empirical analysis of construction contractor financial positioning and performance, page 73, UCL, July 2013

6.8.7 We recognise that this change cannot happen overnight – the same UCL report also found that:

“Construction firms are relatively undercapitalised, compared with firms across the rest of the UK economy... This is most especially the case for tier 1 contractors and for large contractors. Undercapitalisation both puts firms at more risk of financial failure and limits their ability to invest in business models requiring injections of capital”.

6.8.8 Those major contractors should consider themselves on notice, however – if their business model relies on extended payment terms to sub-contractors to make money, it needs to change.

6.8.9 In large part, of course, this is a problem of industry’s own making, and it is rightly for industry to address. We discuss this further in chapter 10.

6.8.10 But there are some steps which the public sector can take. Legislation is already in place, in the form of the Late Payment of Commercial Debts (Interest) Act 1998, as amended earlier this year by the Late Payment of Commercial Debts (Scotland) Regulations 2013.

6.8.11 However, this still puts the onus on the party who has not been paid promptly to seek a resolution. Often, we are told that smaller firms and sub-contractors are reluctant to do this for fear of impacting on future business opportunities. We believe that there is more, therefore, which the public sector could do. Indeed, our one early response to Ministers was in relation to this point, so important do we view it.

6.8.12 **Recommendation:**

The use of Project Bank Accounts should be trialled in Scotland.

6.8.13 This recommendation was accepted by Ministers in April 2013, and we understand that suitable trial projects are now being identified to participate in the pilot.

6.8.14 Project Bank Accounts are ring-fenced bank accounts from which payments are made directly and simultaneously by a client to members of the supply chain. This removes the incentive for main contractors to withhold or delay payment, and thus there is the potential to unlock the flow of cash throughout the supply chain and assist the solvency of sub-contractors and suppliers. We recommend that this trial is monitored and assessed for suitability for future wider application.

6.8.15 There are also other ways of working being developed to help address this issue – such as supply chain financing. Supply chain finance currently has a role to play in the short-term in helping the industry to adapt to shorter payment terms, but we do not believe that a scheme which requires sub-contractors to pay a financing fee to access funds they should be receiving anyway is fundamentally fair, and it should not be endorsed as a long-term solution.

6.8.16 A final issue in relation to payment terms is the current effectiveness of management of contract terms which require prompt payment down the supply chain, and levels of compliance currently being achieved in public sector contracts.

6.8.17 Much evidence has been shared with us of clauses being included in main contracts which refer to payment terms by the contractor to the supply chain, but these appear not be widely enforced, managed or monitored by the client except on an informal basis as sub-contractors raise issues directly with client organisations.

6.8.18 Part of the explanation for this may be either that inadequate resource is allocated to contract management, and / or that the hand-offs from those placing the contract to those managing it are insufficient.

6.8.19 **Recommendations:**

Public sector clients need to ensure that there is a clear understanding between those involved in pre-contract award stage and those involved in delivery on the public sector requirement for fair payment.

Contractual terms between client and main contractor should consistently outline fair payment terms for supply chain participants.

Clients should ensure that appropriate resources are allocated to contract management and enforcement of terms and conditions of contract.

6.8.20 We are well aware, however, that active 'policing' of payment terms down the supply chain is potentially a resource-heavy activity, and so we would encourage clients to find alternative ways of ensuring that their contract terms are carried out – such as asking contractors to file quarterly reports on their payment performance (backed up by random sampling); regular surveys of named sub-contractors on major projects; or establishing a route for sub-contractors to contact contract managers directly when they have concerns.

6.9 Cash retentions and other project assurance tools

6.9.1 The practice of cash retention is long-standing in construction. It involves the client or main contractor retaining a percentage of the funds due to a contractor or sub-contractor until the end of a designated defects liability period after the completion of work carried out. This acts as a safeguard against that firm failing to return to the site to correct any defects that arise, and the retention should be released as soon as that period is concluded.

6.9.2 Few issues which we have encountered have engendered as much feeling, or such firmly entrenched points of view as those relating to this topic.

6.9.3 Typical views which we have heard from industry are that cash retentions are an outdated anachronism; that if pre-qualification is carried out properly by the client then they will not end up employing a firm liable to insolvency or poor workmanship against which they need to hold a cash retention; that firms are in any case contractually obliged to make good any defects; and that at three to five per cent, the cash retention often represents a firm's entire profit margin on a project.

6.9.4 The Specialist Engineering Contractors' Group in particular has been vociferous for some time now in their view that cash retentions should have no place in modern construction contracts.

6.9.5 For their part, the public sector representatives to whom we have spoken largely view cash retentions as a necessary part of their toolkit for insuring against defects.

6.9.6 The Scottish Construction Procurement Manual, which applies to the central government sector, sets out the need for those procuring construction works to employ project assurance measures:

“Realistically, defects occur in most construction works and project owners therefore need to be assured by measures designed to protect the public purse from becoming liable for defective or sub-standard work and to ensure their projects are completed as contractually-specified”³¹.

6.9.7 It does not, however, specify that this should necessarily be achieved by the use of cash retentions:

“Decisions should be project-based and processes should be proportionate to the specific circumstances of the project... Cash retentions or other traditional means of assurance should not prevail purely by default”.

6.9.8 The manual also lists some alternative project assurance measures to cash retentions – such as retention bonds, performance bonds, and parent company guarantees.

³¹ The Scottish Construction Procurement Manual, section 2, Scottish Government

6.9.9 We consider this position to be basically sound. Contracting authorities must have some means of ensuring that issues that arise following the completion of a project are rectified appropriately, and retentions are clearly one way of achieving this.

6.9.10 However, we are concerned by the potential for cash retentions to be overly burdensome on contractors – if the level of retention is too high, the period of retention too long, or, for example, if cash retention is unnecessarily combined with other project assurance measures.

6.9.11 We also therefore consider that there needs to be clearer guidance available to contracting authorities to help them judge when cash retentions are the proportionate tool to use (and what effect that might have on price) – and equally, when another tool might be more appropriate.

6.9.12 When such tools are being used, this guidance should also cover best practice – for example what level of cash retention, bond and professional indemnity insurance is appropriate.

6.9.13 **Recommendation:**

Cash retentions should be used only after careful consideration by contracting authorities, and not as a default measure. Whilst contracting authorities have a duty to safeguard public funds, they should also be mindful of the potentially detrimental effects of cash retentions on their contractors. Greater guidance should be developed to help contracting authorities to determine when and how they should use cash retentions and other project assurance tools in an appropriate and proportionate manner.

6.9.14 A second facet of discussion around the use of cash retentions has focussed on their use by main contractors employing sub-contractors. This is discussed further in chapter 10, when we look at what the industry should do for itself.

6.9.15 What is clear, however, is that if cash retentions are being used as they are intended, and not as a profit centre, then the monies withheld should be ringfenced, and held in a transparent trust account.

6.9.16 We have already made a recommendation that the use of project bank accounts (PBAs) should be trialled in Scotland. We believe that there may be potential for these, or perhaps similar such arrangements to be used to administer cash retentions.

6.9.17 **Recommendation:**

Lessons should be sought from the trial of project bank accounts in Scotland about how PBAs, or other, similar trust accounts might be used to administer cash retentions.

Project Assurance

6.9.18 Both the McClelland Report, and Audit Scotland in 2008 stressed the need for construction projects to go through Gateway reviews. These are defined on the Scottish Government website as:

“...short, focussed reviews of a programme or project that occur at key decision points in the lifecycle. The Reviews are conducted on behalf of the programme/project's Senior Responsible Owner by a team of experienced practitioners, independent of the Programme/Project Team.

The review is intended to be supportive and forward looking and will take future plans into account but only as future intentions, rather than actualities”.

6.9.19 Assessment against the criteria for Gateway Reviews is now mandatory for projects and programmes being taken forward by organisations covered by the provisions of the Major Investment Section of the Scottish Public Finance Manual (those which have a total budget of £5 million or more, inclusive of fees and VAT), with a Gateway Review itself being mandatory for those projects and programmes assessed as potentially high-risk. Mandatory, or not, however, proportionate programme and project assurance is good practice, and should be carried out across the public sector.

6.9.20 **Recommendation:**

A consistent approach to project assurance should be used for all major construction projects. Gateway reviews should be the benchmark against which other models should be tested

6.9.21 Where methods other than Gateway reviews are used, these should be tested against the rigours of the Gateway review process.

7. Capability and capacity

7.1 Overview

7.1.1 In Chapter 4, we set out our recommendations on the need for the political will for change to be supported by appropriate leadership, drive and accountability, whilst in chapter 6 we set out some of the fundamentals of the approach to market. Successful implementation of all of these recommendations, however, relies on improving the capability and capacity of those organisations which are procuring construction work, as well as ensuring that a range of suitable tools and resources are available to support them

7.1.2 Underpinning many examples of poor practice is the fear of challenge, which prevents some bodies from using the full bandwidth of procurement options permitted under law. Related to this, we have received representations that the current EU Directives have been in some ways ‘gold-plated’ in Scots law – an allegation which the Scottish Government strenuously disputes. As there is a new EU Procurement Directive on the horizon, we have not investigated this area in any detail, but would instead urge all parties to work together to minimise the scope for any such concerns – real or perceived – to arise from the transposition of the new directive.

7.2 People and skills

7.2.1 Not every organisation lacks construction procurement expertise – on this point we want to be very clear – many public sector organisations in Scotland have tremendous experience and expertise.

7.2.2 A problem, however, is that this experience and expertise appears to vary significantly from one organisation to the next. Another problem is that we can only report what ‘appears’ to be the case from the many stakeholder interviews we have carried out – we cannot populate the spectrum from good to poor practice, because whilst Procurement Capability Assessments (PCAs)³² are used to evaluate annually how organisations undertake their procurement generally, they are not sufficiently fine-tuned to be able to assess the specifics of construction. Furthermore, not all organisations which spend public money on construction currently participate in the PCA process.

7.2.3 It is generally accepted that any organisation which is spending public money has an obligation to spend that money well and to seek maximum value for money. In our opinion, this means that any organisation using public funds (in part or in entirety) to procure construction work must deploy appropriately skilled people to do so – with no exceptions.

7.2.4 We recognise though that there is no one-size-fits-all prescription to make sure this happens. It is clearly not reasonable to expect an organisation which is an occasional procurer of relatively straightforward construction work to retain the same in-house capability and capacity as one which is a regular procurer of very complex work. It is also important to recognise that, whilst procuring authorities should in general take a forward looking strategic approach to assessing their in-house capability and capacity, they should also, as part of each individual procurement’s business planning stage, undertake an assessment of the adequacy of their skills and expertise to manage that specific procurement, which may have specialised characteristics which go beyond the team’s capability.

³² The objective of the PCA is to assist organisations to improve their structure, capability, processes and ultimately performance, by attaining a level of performance that is appropriate to the scale and complexity of their business. PCAs assess capability in key areas against common criteria and standards which allows public bodies, locally, at sector level and nationally, to identify where best practice already exists, where there are gaps and where continuous improvements and efficiencies can be implemented.

7.2.5 So, if not retained in-house, that capability must be accessed somehow. Collaboration, sharing of services and using other expert public construction procurers as consultants are some potential options for filling this gap. Examples of varying practices in this area range from Aberdeen and Aberdeenshire Councils sharing the services of a Head of Procurement to Fife Housing Association Alliance Lead Developer Partnership, where Kingdom Housing Association provides new build housing procurement services for the four local RSLs.

7.2.6 Our recommendations in this area suggest a number of steps to improve capability. Some of these are practical in nature, others require more fundamental behavioural changes. Collectively they are intended to start addressing the weakest performers by establishing a minimum level of expected competence. Some organisations will already meet this – that is commendable, but should not be taken as a signal that they can relax their standards; we fully expect the strengthened construction procurement policy function within the Scottish Government to promote an agenda of improving standards.

7.2.7 In any change programme, relationships are key, and we could not help but be struck by the internecine battle that appears at times to be raging between procurement professionals and construction professionals in some parts of the public sector.

7.2.8 We heard some remarkably candid comments from construction professionals – on both the client and supplier side – about procurement professionals supposedly “taking over” construction. These can perhaps be summarised by the complaint, which we heard more than once, that having “someone who only knows about buying paperclips” being responsible for complex construction projects was a recipe for “disaster”.

7.2.9 Procurement professionals for their part often reported that they had been unable to make the same sorts of inroads into the procurement of construction works in their organisations as they had into the procurement of goods and services, complaining of a lack of ability to influence the procurement strategy. One told us that:

“...the problem in a construction environment is that by the time it gets to the procurement unit, it’s a fait accompli...the procurement team are just being handed something to go and buy, and are not able to bring their skills to bear”.

7.2.10 Whatever the cause of this mutual distrust, it is manifestly self-defeating and must be brought to an end. Some organisations, such as Renfrewshire Council, have managed successfully to align their procurement functions with their construction functions. Such models of joint-working should be non-negotiable.

7.2.11 **Recommendation:**

Public sector bodies involved in construction procurement must have access to the right mix of professional procurement and construction expertise to ensure that infrastructure is procured effectively. It may not be appropriate for each organisation to retain this expertise on a permanent basis. It may instead be achieved through collaboration with other bodies – either on a project-by-project, or a longer-term basis.

7.2.12 Guidelines on the necessary blend of required skills should be developed. Procuring authorities should confirm that they have assessed their capability against these guidelines and that they have the capability and capacity to carry out construction procurement or outline the alternative collaborative arrangements through which they plan to achieve this capability.

Procurement Capability Assessments

7.2.13 If an organisation is to improve its performance and ensure that it deploys the right skill set on a project – drawing in support from elsewhere if necessary – it needs firstly to understand the expertise it has at its disposal, and the baseline from which it must improve. It is also important that there is some way of measuring progress in the improvements being made at an organisational level.

7.2.14 There is no need to re-invent the wheel to achieve this. A system of annual Procurement Capability Assessments (PCAs) has already been in place in Scotland since 2009. These assessments address how well individual organisations are carrying out procurement activity, looking at issues such as the leadership given to procurement within the organisation; how the organisation develops its procurement strategies and specifications; how it manages contracts; and how skilled procurement professionals are deployed.

7.2.15 The PCA has been instrumental in driving and measuring improvements in procurement capability across the Scottish public sector, with an increase in the overall national average PCA score from 35 per cent in 2009 to 62 per cent in 2012.

7.2.16 The structure and approach of the PCA has also won recognition beyond Scotland. Recently the Welsh Government adopted it as the basis for their approach in assessing procurement capability, and we understand that it has been adopted as the standard assessment tool across higher education in England.

7.2.17 The PCAs are designed to cover all procurement activity undertaken by participating organisations. However, whilst the basic principles underpinning PCAs are sound, some additional criteria need to be added to ensure that they adequately cover construction, which we do not believe they can do effectively at the moment.

7.2.18 The use of PCAs also needs to be widened. At present, not all organisations to which the public procurement regulations apply undergo these assessments. We believe that any organisation responsible for construction procurement has an obligation to do so effectively and should therefore participate in this scheme.

7.2.19 **Recommendation:**

The existing PCA framework should be developed to ensure that it adequately assesses, reports on and helps to improve organisations' ability to procure publicly funded construction. Those carrying out the assessments should be suitably qualified to do so and all organisations procuring construction projects with public funding should undergo procurement capability assessments.

7.2.20 In order to implement this, we believe that the PCA process should be developed to deal appropriately with construction procurement, including separate recording of construction-specific elements. The revised process should be introduced for the 2015 round of assessments. Those carrying out the construction procurement element of the PCA should be suitably qualified to do so.

7.2.21 For those organisations which are not currently subject to PCAs, systems for implementing capability assessment will have to be discussed and agreed with the parties involved – for example the Scottish Government’s Housing Supply Division would need to agree this with the RSL sector.

Skills for tomorrow

7.2.22 Procurement and construction are ever-evolving fields and the public sector is expected to deploy new and more commercial skills. In our stakeholder interviews, project, programme and contract management were three key areas in which procurers of publicly-funded construction were often reported to be lacking – either in resource, or access to appropriate skills.

7.2.23 We need to be able to identify both the current skills profile of those working in public sector construction procurement and their future needs. The current Scottish procurement competency framework has been praised by the Chartered Institute for Purchasing and Supply, and is a good basis. It may need some amendments, however, to ensure that it fully addresses construction issues. The strengthening of PCAs should also go some way to helping with this.

7.2.24 We have considered whether some form of formal approach to learning such as a skills academy for construction procurement professionals would be desirable. In England, those involved in the very largest construction projects are provided with management training by the Saïd Business School. Concern at the lack of expertise in construction procurement has been raised with us repeatedly by stakeholders and we recommend that a learning programme for construction procurement be established. This programme would provide an appropriate blend of learning in procurement and construction professional disciplines, including project, programme and contract management.

7.2.25 Additionally, we believe that creating communities of best practice should be a key priority in ensuring longer-term capability and capacity within the public sector. The potential for creating a “mentoring pool” should be explored to allow those more experienced and capable procuring authorities to share their knowledge and learning and, more importantly, support others to improve their procurement decision making and delivery.

7.2.26 **Recommendations:**

A current and required baseline of skills in construction procurement should be established.

A strategy should be developed to ensure those needs are met through both formal learning and mentoring, building as appropriate on the Scottish procurement competency framework.

Consideration should be given as to whether a structured approach to delivering appropriate learning - such as a Skills Academy approach (virtual or otherwise) – would deliver some or all of the required benefits.

7.2.27 Guidance and expertise should be sought from academia and the relevant professional bodies in implementing these recommendations.

7.3 Tools, systems and guidance

Procurement Journey Guidance

7.3.1 The management of risk and the fear of challenge has been a constant theme in our interviews with stakeholders. Public sector bodies are very aware of the complex body of procurement legislation, regulation and case law, under both European Union and Scots law, but we believe that these rules are too often used as an excuse for public authorities for poor procurement behaviours.

7.3.2 Understandably, public authorities are anxious to ensure that their procurement practices are not challenged by unsuccessful bidders, with all the attendant direct costs and delay which such challenges entail. However, in some cases this has led to procurement processes and costs of procurement for clients and bidders which are wholly disproportionate to the quantum of the planned spend. Over-elaborate processes can actually achieve the opposite of what is intended by creating less transparency and increasing the risk of challenge.

7.3.3 Many public sector stakeholders have reported a perceived lack of central guidance on construction procurement. Throughout our report, we have highlighted a number of specific areas where we think additional guidance should be developed.

7.3.4 A very great deal of guidance does already exist, however, in the form of the Scottish Construction Procurement Manual. This has the potential to be a tremendous source of information. However, it is not in an easily accessible format, and due to resource constraints, has not been comprehensively reviewed and updated for some time.

7.3.5 We see great value in ensuring that clients procuring with public monies have a comprehensive set of tools at their disposal to help them navigate their Construction Procurement Journey. In response to this we have outlined an overarching recommendation related to guidance, with various strands detailed beneath it.

7.3.6 **Recommendation:**

New standardised guidelines setting out best practice on the end-to-end construction procurement process should be developed and maintained. As far as possible, the guidelines should be written in plain English and should be in an accessible digitised form, based on the example of the procurement “Journey” for goods and services. The guidelines should be capable of being used in a proportionate way for projects of different sizes and risk profiles as well as being adaptable for different sectors.

7.3.7 Whilst there may be some merit in then making use of this guidance mandatory, we understand that this is not easy to do. We do believe that adherence to the standards set out in the guidance, as a minimum, should be measured as part of the Procurement Capability Assessment process.

7.3.8 Sub-ordinate to this over-arching recommendation, we have a number of related recommendations which set out matters of good practice, and should be reflected in this guidance.

Our related recommendations are:

a) Good practice guidance on those elements of bids which should and shouldn't be scored and on the focus to be given to quality and whole life costing in the scoring should be developed.

Concerns were raised with us by both clients and suppliers around the need for greater clarity on the scoring and weighting, particularly of quality criteria, within bids. There was a strong sense that, although a lot of time and effort is often spent on quality aspects of bids, these aspects were then rendered almost meaningless through the high weighting given to price. Conversely, it is also important that if the quality scoring has a higher bearing on the outcome of the tender process, then those elements are suitably monitored and delivered as part of any successful bid.

b) Public bodies should rightly seek to assure themselves of the competence and skills of bidders. This, however, should be done through asking for appropriate experience – as indeed is current Scottish Government policy – rather than necessarily asking for exact experience of similar project delivery within a short number of years (for example “Supply three examples of community halls which you have built in the last five years”).

The practice of always asking for exact experience might exclude perfectly competent companies who have not had access to particular projects due to local circumstance or it might result in the appointment of a company which has delivered similar projects at a national or international level, but locally has not. It may also lead to a narrowing of choice, expertise and experience in the construction sector.

All construction projects are different and specific requirements for experience or expertise across the bidder's project team may vary. However, overly-prescriptive requirements have been quoted to us by many suppliers as an unnecessary barrier placed in the way of opportunities to qualify or bid for work.

Clients may feel that they are being as robust as possible in stipulating required experience, but examples of companies which have successfully delivered a £5 million library facility but are then barred - by the same client - from bidding for a £4 million community hall project because they haven't built one or a number in the last few years are blatantly nonsensical. Not only does this sort of behaviour reduce competition, it puts barriers in the way of companies gaining experience and disadvantages SMEs, particularly those in remote and rural areas where SMEs are a vital part of the sustainability of the local economy, and may be in the position to tender the best price.

We recognise that some construction projects are highly specialised in nature - whether through design requirements or construction techniques - and therefore do require precise experience to be demonstrated, but public sector clients should think carefully before specifying their experience requirements to ensure that the field they select from is the strongest it can be.

c) The ability of a company to deliver a contract should not solely be measured by the use of turnover thresholds. Where annual turnover is part of financial criteria it should be limited to no more than two times the annual contract value as outlined in the EU commission's proposal. Further guidance should be developed on other valid and proportionate methods for assessing financial strength and risk.

Again we have received many representations from stakeholders, particularly SMEs, who have been excluded from contracts by requirements to have a level of turnover which seems disproportionately high when the size of the contract is considered. Whilst turnover clearly has some – very blunt – role to play in evaluating whether a firm is capable of delivering a given project, it is not a measure of financial stability. Indeed, this was recognised in May 2012 by SPCD:

“Turnover may indicate in broad terms that a bidder has the capacity to deal with the volume of work but it is rarely, if ever, a good indicator on its own and public bodies are strongly recommended to take a more rounded, commercial approach”.³³

d) To the extent possible within the full scope of the law, including as may be amended by the new EU Procurement Directive and Procurement Reform Bill, contracting authorities should take the prior performance and behaviour of bidders into account when awarding contracts. Guidance which ensures compliance with legislation should be developed.

Much frustration has been expressed to us about a perceived lack of clarity in what consideration can be given to previous good or bad performance when awarding new contracts. Clients are fearful of challenge and contractors feel that the poor performance of their peers is being ignored when selection criteria are being considered. Transparent procedures should be developed which allow clients to feel confident in their use but also ensure that suppliers feel that measures are fair and not overly punitive. This ties in with our recommendations on good performance and contract management.

e) The Scottish Government should reissue its existing guidance to the public sector on how to deal with abnormally low tenders.

³³ Scottish Procurement Policy Note 2/2012, 31 May 2012

Stakeholders, both client and contractor, have raised concerns regarding abnormally low tenders or “suicide bidding”. Public sector clients are placed in a difficult position in assessing the deliverability of contracts at low prices, whilst seeking the best value for the public purse. Of course a low tender may be a perfectly legitimate way for a contractor to seek to gain experience of a new area of work, for example. But instances have been quoted to us of low tender prices being submitted, only for the client then to experience a project littered with delays and adversarial contract relations, with resultant claims for extra payment. Further updated guidance on how to deal with low tenders was identified as being a priority.

f) Guidance should be developed which assists contracting authorities to carry out successful pre-market engagement as part of a construction project.

We highlight in section 6.2 the need for more pre-market engagement to take place. We are told that one of the reasons for this not happening as much as it should is that contracting authorities are wary of being seen to favour certain companies, and risking a challenge to their process. More developed guidance on how to carry out successful pre-market engagement within the bounds of the law was signalled to us as something which would be welcomed.

g) Contracting authorities should always make feedback available to both successful and unsuccessful bidders at PQQ and ITT stage. Feedback should be timely, and a model of good practice, building on existing sources, such as the Scottish Suppliers’ Charter³⁴, and legislative requirements, should be developed.

³⁴ A joint statement between public sector buying organisations and Scottish businesses to agree to work together to improve public sector procurement processes and dialogue

Another source of great frustration for industry is what is often perceived as a lack of meaningful (if any) feedback on the merits of their tenders – although it should be noted that some examples of very good practice were also highlighted to us. Clients have told us that the fear of feedback being used to challenge the process can sometimes inhibit their genuine desire to give helpful feedback, as can a lack of time. The best examples which we have seen will provide a useful basis for the development of the new model of good practice.

h) If not already established, public sector procuring authorities should work together to develop forums with locally-operating construction firms which would meet on a regular basis and include economic development teams and construction procurement staff to discuss the pipeline of work, issues and opportunities, with a view to building greater understanding, transparency and improved processes and practice.

There are some examples of these forums (such as Fife and Forth Construction Forums working jointly to deliver a core programme of events) currently operating and we see them as a crucial piece of the jigsaw in helping to improve communications between the client and industry side at a sub-national level. Sharing of information and best practice, opportunities for two-way feedback on procurement practices and skills and training are just some areas where we see a real opportunity for value to be added.

i) A formal support mechanism should be developed to help SMEs understand how to compete for public contracts.

Whether through a combination of forums as outlined above, mentoring pools or improved feedback there is a need to help smaller companies understand the expectations placed on them when competing for public contracts. This coupled with other recommendations in the report should help to allow them to compete on contracts which they are able to deliver.

Public Contracts Scotland (PCS)

7.3.9 The use of the Scottish Government Public Contracts Scotland (PCS) portal is currently optional but from data gathered we understand that over 1,800 works contracts were advertised through PCS between April 2012 and March 2013. Some clients retain their own procurement portals, and some commercially-operated services provide a contracts-notification service to firms for a fee. PCS is free to use for both advertising and looking for publicly-funded contracts.

7.3.10 To ensure consistent sight of publicly funded construction contracts we see a real value in all projects which are advertised to be advertised on the PCS portal. The provisions of the Procurement Reform Bill proposed by the Scottish Government would mean that all works contracts worth at least £2 million, and supplies and services contracts worth at least £50,000 would have to be advertised on PCS. We very much support this proposal. Where supply chains have not been developed by contractors, we would promote the advertising of these opportunities through PCS also.

7.3.11 We do, however, recognise that there is scope for PCS to continue to be improved and categorisation is one area which could be further developed and evolved. One example would be the system for identifying potential private sector interest in new contract opportunities. Stakeholders have commented on the current categorisation leading to them being notified of opportunities which are not related to their business focus.

7.3.12 Of course, there is a counter-argument that the more specific the categorisations are, the greater the chances of a firm missing out on notification of a contract which it could have delivered. There is clearly a balance to be struck here.

7.3.13 Some concerns have been expressed to us about the speed and user-friendliness of some aspects of the PCS operating system, and we recommend that further investigations and user feedback should be gathered to ensure that the recommended increased adoption of the use of PCS can be accommodated and high levels of system performance maintained.

7.3.14 Recommendations:

- a) Practice should be standardised by making the use of Public Contracts Scotland mandatory when advertising publicly-funded construction contracts**
- b) Contractors on major projects should be encouraged to advertise sub-contracts on PCS where they have not already fully identified their supply chain**
- c) Product categorisations used on PCS should be reviewed to ensure that they are as accurate as possible for construction projects.**
- d) SPCD should assess the current performance of the PCS systems through user feedback to ensure high standards are being achieved and are capable of being maintained following adoption of wider usage.**

Pre-Qualification Questionnaires (PQQs)

7.3.15 Almost all of those we have spoken to, whether client or supplier, have expressed their frustration with the lengthy, resource intensive and costly process of devising, completing and evaluating PQQs. The effort being expended appears to be wholly disproportionate to the value currently being realised from the process.

7.3.16 Consistency in the types of and ways that information is requested in PQQs is sadly lacking across many sectors and sometimes even within the same contracting body. All of this leads to much duplication of effort, with limited added value. We have received consistent comments to the effect that the system rewards expertise at filling in forms rather than underlying competence. Larger companies, with the resources to do so, are said to be engaging or employing resource specialising in writing PQQs. We believe that competence is more important than accreditation and the system must allow public sector clients to be satisfied of competence.

7.3.17 Estimates of the average cost of completing a PQQ process can vary significantly, but the administrative cost to suppliers is undoubtedly substantial. The Scottish Building Federation (SBF) conducted a Major Contractors Survey in June 2013 which showed on average that major contractors are spending almost £1000 per £1 million of public contract value. Anecdotal evidence gathered by SBF also found that an average of 15 PQQs are submitted per public contract awarded. There are also significant costs to the client in evaluating PQQs. Clearly further evidence would be helpful in this area to quantify properly the cost to the public purse but from the findings of this limited sample size and from anecdotal evidence given to us, it is clear that a large amount of time and money is being expended on the PQQ process both by clients and contractors. This adds further weight to the need for establishing a better way to manage the process and its considerable related costs.

7.3.18 The PQQ is supposed to ensure that only eligible bidders with the requisite financial and technical capacity and capability are invited to proceed to the tendering stage. However, many companies are now avoiding bidding for work in sectors that use PQQ processes as they cannot afford to invest the initial required outlay with little chance of being successful.

7.3.19 PQQ (and ITT) stages can place unnecessary, disproportionate and over-prescriptive qualifying barriers in the way of SMEs. These barriers not only restrict access to work, but may in turn reduce the available pool of expertise for some public sector construction projects by narrowing companies' portfolios of work.

7.3.20 Stakeholders have commented to us that what helps companies to progress past the PQQ stage is often not delivered when works are finally awarded, and so careful consideration of the requirements of a PQQ and monitoring of their delivery needs to be undertaken to ensure a continued fairness from start to finish in the process.

7.3.21 Work has been ongoing for some time by SPCD, in conjunction with industry and other public sector representatives, to develop a standard PQQ and this has recently been launched and made available through PCS Tender. The standard PQQ allows procuring authorities to select from a defined library of question sets grouped around standard themes such as economic and financial standing and quality management, and reflect the PAS 91:2013³⁵ standard.

7.3.22 The intention is that the PQQ should be built from this standard base of information in a way which is proportionate and relevant, rather than including all the questions which could possibly be thought of. The small number of mandatory questions required by PAS 91 are highlighted in the standard PQQ and an attempt should be made to keep other questions to the absolute minimum needed. The ongoing application of this principle in practice should be monitored and reviewed.

7.3.23 There is also recognition that requirements differ for contractor and consultancy services. The development of improved functionality for consultancy services is recommended and linkages should be made between SPCD and key representative bodies such as the Royal Incorporation of Architects in Scotland (RIAS) and the Royal Institution of Chartered Surveyors (RICS) to improve the applicability of the current library of questions for projects relevant to their professions. This has already proved to be effective for civil engineering contractors with the Civil Engineering Contractors Association (CECA) Scotland having been at the forefront of working with the Scottish Government to improve and develop the standard PQQ.

7.3.24 Suppliers can choose to provide responses to all potential questions at one time, or simply to provide responses as the various questions are asked in different PQQ exercises in which they are participating. Once a response has been provided, it is stored on the standard PQQ system, and when next responding to a PQQ, suppliers need then only to review their previous responses to ensure their currency, and answer any project-specific questions.

³⁵ PAS 91:2013 is a free Publicly Available Specification (PAS) providing a set of questions to be asked by buyers of potential suppliers to enable pre-qualification for construction projects. Its development was sponsored by the Department for Business, Innovation and Skills, and was with the objective of streamlining and reducing the cost of pre-qualification in construction procurement processes.

7.3.25 Our recommendation is that the standard PQQ is used by all public sector authorities and RSLs, if including a PQQ stage as part of their procurement process. We do, however, recognise that the standard PQQ requires continual further refinement to be made even more suitable for construction usage once embedded and operating. This could include linking to recognised accreditation schemes and improving the process for gathering and storing references - referee fatigue being an issue which can stop businesses qualifying for opportunities to tender. In implementing any such further development, however, caution would need to be exercised to ensure that firms are not forced into joining expensive accreditation schemes in order to compete.

7.3.26 Recommendations:

a) Additional guidance for the public sector should be developed to ensure that the standard PQQ is used in a way which is proportionate and relevant to the needs of construction procurement, and practices monitored to ensure that this principle is achieved. The standard PQQ should continue to be refined and, where a pre-qualification stage is being used, its use should be mandated.

b) SPCD, along with bodies such as RIAS and RICS, should work collaboratively to develop consultancy/specialist services suites of standard questions for the standard PQQ. Other requests for specialist suites of questions should also be considered and assessed by SPCD as they arise.

Quick Quote

7.3.27 Below the threshold values from which the EU Directives apply, contracting authorities have greater latitude in how they award contracts, although they must still “follow a procedure leading to the award of the contract which is sufficient to enable open competition and meet the requirements of the principles of equal treatment, non-discrimination and transparency”.³⁶

³⁶ The Public Contracts (Scotland) Regulations 2012, (21)

7.3.28 Of course, the threshold above which the Regulations apply is significantly lower for consultancy services contracts than for works contracts³⁷ (if they are awarded separately from the main works contract).

7.3.29 Quick Quote currently operates as part of PCS to allow the procurer to select a smaller number of suppliers to price the work they require. Each organisation's use of Quick Quote varies, but current guidelines for central government recommend that it is used only for contracts worth less than £50,000. At a little over one per cent of the threshold above which the Public Contracts (Scotland) Regulations 2012 apply, we believe that this is far too low for works contracts.

7.3.30 Increasing the guideline limit for contracts awarded through Quick Quote would allow the number of bidders for construction work to be restricted and negate the need for a full PQQ and/or ITT process for a relatively small works contract. It would still allow the market to be tested albeit on a more limited basis.

7.3.31 The provisions of the Procurement Reform Bill proposed by the Scottish Government apply to works contracts worth at least £2 million, and to supplies and services contracts worth at least £50,000. These provisions include a requirement to advertise such contracts on Public Contracts Scotland. We would encourage public bodies to consider using Quick Quote for contracts which are worth less than these amounts, although each body will clearly still need to undertake an assessment of the potential benefits and risks of such an approach for any given contract.

7.3.32 Indeed, it is important that contracting authorities still satisfy themselves that they are being transparent and fair when operating a Quick Quote process, and that selection of those invited to quote should be subject to a transparent rigorous process which is regularly reviewed. Guidance should be developed to cover this change more fully and outline good practice.

³⁷ The thresholds above which the regulations apply are set for a period of two years, and are based on thresholds set by the European Commission. For works contracts, the threshold is currently £4,348,350. For supplies and services, the threshold is £113,057 for contracts awarded by central government, and £173,934 for contracts awarded by other parts of the public sector.

7.3.33 Recommendations:

- a) **The use of Quick Quote should become the norm for works contracts worth less than £500,000, and public bodies should consider using Quick Quote for awarding construction-related contracts worth less than the proposed thresholds in the Procurement Reform Bill (£2 million for works and £50,000 for supplies and services).**

- b) **When using Quick Quote, public bodies should be able to demonstrate a clear audit trail to contract award, to ensure transparency and accountability.**

PCS Tender

7.3.34 Many of the observations on PQQs could similarly be applied to the ITT stage. Disproportionate resources can be expended by both clients and suppliers at tender stage, depending on the procurement choices made by the client.

7.3.35 As with PQQs, the average cost of tender processes is also difficult to quantify, given the level of project specific detail required, and variances stemming from the procurement approach being pursued. CECA estimates, however, that for a contract of approximately £4 million in value, the average cost of tendering is approximately £9,000 if the client has designed the project, or £18,000 if the contract is design and build. And on top of this is the potential PQQ cost already incurred. The Scottish Building Federation estimated recently that once shortlisted for a contract, contractors spend an average of almost £3,700 per £1 million of contract value to complete the procurement process³⁸, although this is based on a limited sample. We have not attempted to conduct our own survey of this point, but we accept that it is clearly an issue of concern to industry.

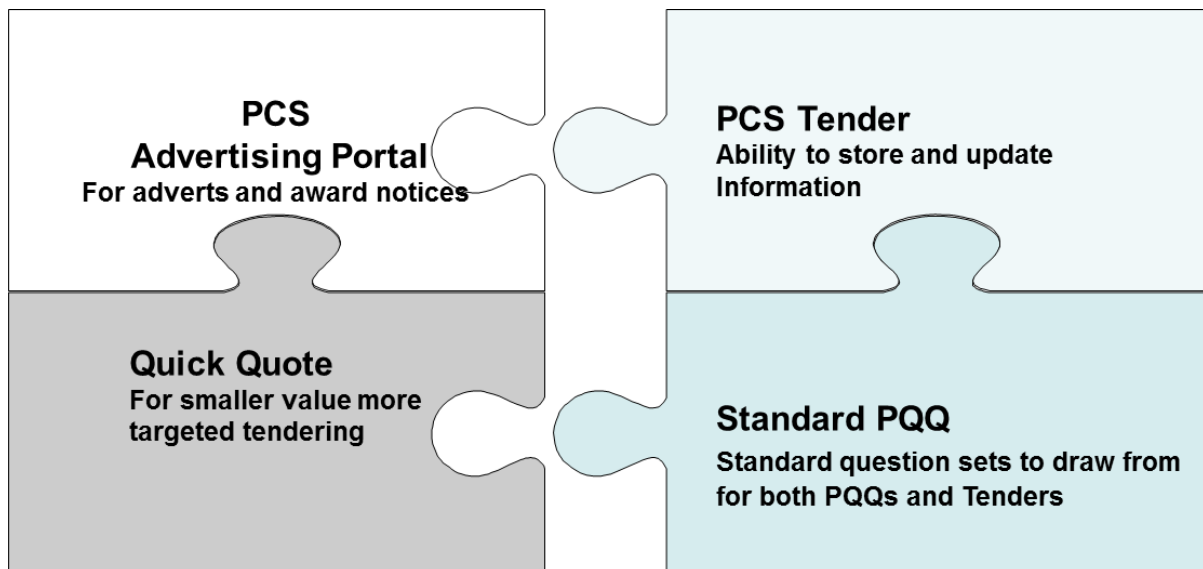
³⁸ Major Contracts Survey, Scottish Building Federation, July 2013

7.3.36 Continuing in the vein of ensuring consistency of approach we see great value in using the PCS Tender functionality to ensure that the tendering phase of procurement is also mandated through the use of PCS Tender. This would ensure end to end coverage of the procurement process through one free, central, publicly available portal - PCS. The scope for using standardised question sets for tender procedures along the lines of the standard PQQ should also be promoted.

7.3.37 Recommendation

The use of PCS Tender should be mandatory for creating ITTs, using standard question sets as the basis, and submitting tender returns – whether individual contracts or the establishment of frameworks.

7.3.38 The elements discussed above relating to Public Contracts Scotland can be illustrated as follows:



8. Sustainable procurement, innovation and emerging technologies

8.1 Overview

8.1.1 Economic, environmental and social sustainability are interlinked, and we see a future where these three strands are systematically afforded appropriate priority in construction procurement decisions.

8.1.2 The Scottish Government defines sustainable procurement as:

“a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis and generates benefits, not only for the organisation but also to society, the economy and the environment.”³⁹

8.1.3 The Scottish public sector is in the process of adopting a consistent approach to sustainable public procurement based on the United Nations Environment Programme “Marrakech Task Force”⁴⁰ approach to accelerate a shift towards sustainable consumption and production. There is currently a project underway to embed this approach into procurement policy strategy and systems.

8.1.4 The “Marrakech Task Force” approach encourages organisations to review systematically the risks and opportunities related to their procurement spend and then to progress these through the procurement process.

8.1.5 We have highlighted at various points within this report the impacts of both the Scottish public sector construction spend and the Scottish construction sector on the Scottish economy.

³⁹ The Scottish Sustainable Procurement Action Plan, The Scottish Government, 2009

⁴⁰ The Marrakech Task Force was launched in 2003 in response to the Johannesburg Plan of Implementation

8.1.6 Economic and social impacts range from support for local economies through the use of local contractors and consultants; the ancillary economic activity generated by construction spend; training opportunities which lead to permanent work opportunities or further learning; and, of course, the impact that high quality construction projects can have on improving and encouraging economic confidence in communities. Positive impacts can be achieved through the provision of a lasting resource which enables communities to interact and function better and have a sense of place⁴¹. When procured properly construction can also help to deliver against the preventative spend agenda and support social stability.

8.1.7 Although wider than the construction agenda, the UK Government recognises the links between procurement and place, and said in 2010:

“Innovative procurement can support wider economic growth and inclusion objectives in places as well as driving value for money, for example, supporting innovation, sustainability, skills and SME and third sector organisations.”⁴²

8.1.8 Design-led procurement can also help to maximise sustainability through ensuring flexibility and adaptability of use and increasing the durability and longevity of the design solution. Sustainable resourcing of durable materials can contribute to improved performance and reduced environmental impact.

8.1.9 The Egan report set out a vision for innovation and technological change within the construction sector. This report was written around 15 years ago, and yet limited progress appears to have been made towards its objectives.

8.1.10 In order to start addressing this issue, a range of approaches should be better implemented, measured and monitored on a more consistent basis within public sector construction. Industry also has an important part to play as we set out in chapter 10.

⁴¹ Creating Places: A policy statement on architecture and place for Scotland, Scottish Government, 2013 highlighted the importance of place building (considering it to comprise: “the environment in which we live; the people that inhabit these spaces; and the quality of life that comes from the interaction of people and their surroundings), as outlined in Designing Places: A policy statement for Scotland, Scottish Government, 2010

⁴² Total Place: A whole area approach to public services, 4.32, HM Treasury and Department for Communities and Local Government, 2010

8.2 Social benefits

8.2.1 Following on from the publication of the Scottish Government's Community Benefits in Public Procurement Report and accompanying guidance, social benefits are commonly referred to as "community benefits" in the Scottish public sector.

8.2.2 Over the course of our review, the terms "community benefits" and "apprenticeships" have often been used interchangeably. Community benefits, however, can be much broader than just the provision of apprenticeships and jobs, and can range from the provision of training, work experience, educational and engagement opportunities for local communities, through to the physical provision of additional community facilities and environmental improvements.

8.2.3 Authorities vary in how prescriptive they are about their requirements for community benefits, leading to differing practices when it comes to weighting and scoring. In part this stems from varying levels of comfort amongst different bodies with their ability to assess this objectively, as required by law.

8.2.4 Contractual inclusion of community benefit clauses also varies, with some clients leaving them as additional, less formal aspects of delivery. This approach, however, goes against best practice guidance:

"In order to form part of the criteria according to which contracts are awarded, community benefit clauses must be included as a core part of the contract specification. Once a decision has been taken to use Community Benefit clauses, they should be included at all stages of the procurement process from business case to contract implementation and monitoring; Organisations must set firm and realistic expectations in terms of their requirements. These must be precise to facilitate implementation and proportionate monitoring of the clauses."⁴³

⁴³ Community Benefits in Public Procurement - A Report Demonstrating the Methodology for Including Targeted Recruitment and Training Clauses in Public Sector Contracts by Richard MacFarlane and Mark Cook, Anthony Collins Solicitors, 2008

8.2.5 Monitoring and measurement of actual delivery of community benefits and the use of punitive measures for non-delivery - where community benefits elements have been scored and have played a key part in awarding a contract - is crucial. KPIs should be developed and clients must be rigorous in ensuring that promises made at ITT stage are fulfilled and that if they are not, then appropriate consequences follow. This not only protects the client from challenge but ensures realistic target-setting, and a level playing field for those tendering for work.

8.2.6 Stakeholders have raised questions with us as to the reasonableness and deliverability of some community benefits clauses. For example, a twelve month, £2 million construction contract cannot in itself be expected to deliver ten new apprenticeships capable of being sustained over the long term.

8.2.7 We strongly believe that, in relation to apprenticeships, more weight has to be given to the importance of completion of apprenticeships and sustaining existing employment within the industry, as well as the creation of new apprenticeships, where appropriate. Expectations of clients need to be proportionate to the size of the contract.

8.2.8 The Scottish Government has indicated its support for exploring shared apprenticeship models, which may provide a vehicle for promoting the employment of apprentices on smaller contracts. The need for better sharing of apprenticeships whether through client or supplier collaboration is recognised in a University of Glasgow report commissioned by Homes for Scotland⁴⁴. This report also sets out some of the difficulties with such models which need to be addressed if their use is to become viable. A variety of other models and practices currently exist, with some local authorities such as Falkirk Council taking a key role in providing and sustaining apprenticeships, while in other areas industry is taking the lead.

⁴⁴ Shared Apprenticeships for Home Building: A Scoping Study, Alan McGregor and Victoria Sutherland, University of Glasgow Training and Employment Research Unit, March 2013

8.2.9 Recommendations:

Good, detailed, community benefits guidance exists currently on the Scottish Government website, but it is lengthy and should be reviewed and integrated within a wider Construction Procurement Journey. This guidance should include:

- a) The requirement that contracting authorities should have a clear strategic understanding of what they want community benefits to deliver through their public procurement for the sustainability of the Scottish and local economy and the community within which the project is being delivered. The public body should set out its strategic objective and ask the contractor to set out in its tender how it will meet that objective.**

- b) Guidance to contractors to help them to design and deliver appropriate community benefits.**

- c) Guidance to contracting authorities to assist an open consideration of community benefit proposals at ITT stage.**

- d) The promotion of continuity and completion of apprenticeships. One means of doing this may be through encouraging the public sector and industry to work together to develop a shared apprenticeship model that refocuses the emphasis on the completion of apprenticeships and the practicability of such models should be investigated.**

- e) Monitoring by public sector clients of performance in relation to community benefits delivery, and use of that performance monitoring information as part of overall performance assessment for future contracts whether through frameworks or open processes. This could be done as part of a suite of KPIs.**

8.3 Economic benefits

8.3.1 It is difficult to distinguish the individual aspects that make up sustainable procurement. In many cases economic benefits will be derived from the activities and recommendations described earlier in this report, and in particular, the power of public spending to benefit the Scottish economy. Use of social or community benefits clauses can bring economic benefit through training and employment opportunities and through opening up the supply chain; an example would be the use of Forth Replacement Crossing contracts. Economic benefits may also accrue through environmental benefits, for example, the benefits of more energy efficient materials and buildings or the resource efficiency that whole life costing would generate.

8.4 Environmental benefits

8.4.1 Scotland has set itself some of the most challenging carbon reduction targets in Europe. Promotion of environmental sustainability in public construction currently manifests itself in a number of ways. For example: the development of greener homes is being supported through the Scottish Government Greener Homes Innovation Scheme and the production of a Greener Homes Prospectus, whilst the recently published Sustainable Housing Strategy for Scotland⁴⁵ also reinforces these messages for both the public and private sector; and the five hubCos' performance in sustainability is measured by KPIs monitored by their Territory Partnering Boards. Underpinning other work, there is continuing improvement in energy standards required under building regulations, guided by the recommendations of the Sullivan Report⁴⁶. An update on specific topics within that report is due later in 2013.

⁴⁵ Scotland's Sustainable Housing Strategy, The Scottish Government, 2013

⁴⁶ A low carbon building standards strategy for Scotland, 2007

8.4.2 A range of existing energy standards are currently being used by the public sector when specifying their requirements, such as BREEAM⁴⁷, EcoHomes⁴⁸, Standard Assessment Procedure (SAP)⁴⁹, and the National Home Energy Rating. It should be noted that the Energy Efficiency Directive provides a range of mandatory and voluntary provisions to drive improved energy efficiency in the public estate.

8.4.3 Sustainability through design can be achieved in number of ways - such as maximising thermal efficiency, reducing carbon emissions, reducing floor area requirements through clever use of space, or considering refurbishment rather than new build. We have already stressed the strong importance of design in section 6.2 and this is reinforced in the Scottish Government's recently published architectural policy statement which states:

“Communities and places benefit from investment decisions that consider all impacts – societal, environmental as well as economic. Decisions should prioritise long-term benefits. The public sector should set an example by ensuring high design standards are adhered to in public procurement. Low carbon design and planning should be a priority. Project clients, commissioners, designers and approvers should encourage design innovation and take advantage of locally sourced materials to facilitate sustainable development. A ‘re-use not replace’ approach should be considered first when dealing with our existing built environment.”⁵⁰

⁴⁷ BREEAM is the Building Research Establishment's Environmental Assessment Method and rating system for buildings

⁴⁸ ECOHomes is the domestic version of BREEAM.

⁴⁹ SAP is the methodology used by the Department of Energy & Climate Change to assess and compare the energy and environmental performance of dwellings.

⁵⁰ Creating Places: a policy statement on architecture and place for Scotland, The Scottish Government, June 2013

CASE STUDY – PLOT RENEWAL

The Institute for Sustainable Construction at Edinburgh Napier University has demonstrated an efficient, economic, socially and environmentally sustainable method of bringing old housing stock back into occupation with long term benefits. The university, in collaboration with a local housebuilder, Sharp Homes, and support from Fife Council building standards, has piloted a concept of “plot-renewal”.

Plot-renewal fully encompasses urban regeneration by community engagement and local job creation whilst providing energy efficient homes and sustainable community benefits. Plot-renewal is the deconstruction of an existing vacant derelict dwelling back to its foundations, and the construction of a new dwelling, making use of all the existing foundations, services and street infrastructure. Plot-renewal targets streets earmarked for demolition or refurbishment where to refurbish existing dwellings to tolerable housing standards simply does not provide the best long-term solution. In addition, plot renewal can allow alternative sizes of accommodation to be provided, thus delivering more homes within the same footprint to meet the local housing needs.

Five new mid-market rent homes were delivered for Ore Valley Enterprises, a subsidiary of Ore Valley Housing Association in Lochore, Fife, at a development cost of £65,000 per unit, with no government subsidies being used. This compares favourably to the average costs being sustained in many other affordable housing projects. In addition 22 new homes have been leased by Ore Valley Enterprises from the developer on a 20 year lease for onward let to tenants on a mid-market rental basis. The development of these 27 homes was carried out in five months, as no groundworks were required, thereby also reducing costs and improving resource efficiency. Further cost savings were achieved by recycling materials on site and the re-use of the street infrastructure. An independent surveyor valued the 2/3/4 bedroom homes at £80,000/ £99,000/ £135,000 respectively.

The occupied dwellings are now subject to a monitoring project by the Institute for Sustainable Construction, the results of which will be published later in 2013.

Although plot-renewal will only be appropriate in a limited number of scenarios, it is a method which for achievement of best value for money should be considered where housing stock requires to be regenerated.

8.4.4 New, more sustainable materials and components are being developed all the time, as is an awareness of renewable and locally sourced materials and technologies which are economical in both upfront cost and whole life cost analysis. This report will not be promoting any particular technologies but there is a clear need for experience and learning to be better shared and this should be an area of focus. The development and promotion of Scottish timber is one such example where continued sharing of information can help product development.

8.4.5 Waste management is another area where real measurable improvements can be achieved. Industry has a key role to play in improving on-site practices, as have clients in demanding good performance. Good progress is being made through UK wide initiatives such as “Halving Waste to Landfill” which is promoted in Scotland by Zero Waste Scotland. The Scottish Environment Protection Agency reported that construction and demolition waste dropped from 8.03 million tonnes in 2006 to 7.47 million tonnes in 2010. However, construction still accounted for 44 per cent of all controlled waste generated in Scotland in 2010 and it is still the largest source of waste in both Scotland and the UK.⁵¹ Continued effort in this area has the potential to save money as well as the environment and contribute to other targets, such as for recycling. We are aware that the Scottish Government is working in partnership with Zero Waste Scotland and other key partners to develop E-learning Sustainable Construction Tools to help disseminate Scottish Government policy and embed best practice in this area. Contracting authorities have a responsibility and opportunity to promote better waste management through their construction contracts and should strive to do so. In paragraph 8.6.4, we comment on the potential of Building Information Modelling to help to reduce waste.

⁵¹ Waste Data Digest 12: Key facts and trends, 2012, Scottish Environment Protection Agency

8.4.6 The higher capital cost of some of the greener standards and approaches, such as BREEAM or the voluntary higher levels defined within section 7 (sustainability) of the Scottish Building Standards, is often stated as the major barrier to their wider adoption. At a time of such significant pressure on capital budgets, we can understand such concerns. However, greater linkage of capital and revenue funding considerations in the context of the whole-life cost of a project, whether a house, a hospital or a school, would provide better information on the true overall cost of sustainable approaches by focussing on the subsequent savings in revenue expenditure as well as the upfront capital costs. This was also recognised by the Westminster Sustainable Business Forum.⁵²

8.4.7 Bringing this together in a single vision for public sector construction procurement is a challenge in view of the spread of Scottish Government departments with an interest in or responsibility for the topic. The enhanced construction procurement policy function should play a key role in promoting a more coherent joined up approach to sustainability for public sector construction.

8.5 Innovation

8.5.1 As set out above, previous reports such as the Egan report and the Latham⁵³ report have promoted innovation in modern methods of construction and partnering approaches to contracts. Public sector clients and industry need to be more open to new products and techniques. The sharing of experiences and outcomes needs to become common practice.

8.5.2 One example is off-site manufacture where there are potentially significant gains for highly replicable products for use in types of build such as social housing. There have been some examples of this being trialled, but to date these have been sporadic and learnings of a less positive nature often not shared openly.

⁵² Costing the Future: Securing value for money through sustainable procurement – The final report of the Westminster Sustainable Business Forum's inquiry into sustainability in public procurement, 2008

⁵³ Constructing the Team: Final Report of the Government/Industry Review of Procurement and Contractual Arrangements in the UK Construction Industry, Sir Michael Latham, 1994

8.5.3 Modern methods of construction are not limited to any given structure and can be employed for housing, health, education, commercial and industrial properties. Perhaps the most appropriate sector for off-site manufacturing is the housing sector, where the volume is such that economies of scale can be realised in the factory environment and better value for money achieved. Sustainable construction is achievable in the factory environment and can consider low carbon technologies and energy saving techniques to produce housing compliant with building standards requirements. There are a limited number of companies who are actively pursuing this agenda but we know of some who can see the value both now and for the future of investing in such factory capacity to feed their construction arms and clients requirements in an efficient, cost-effective and sustainable way.

8.5.4 Standardisation, in any form, however, appears to strike fear into the heart of many who feel that it has been the cause of some of the quality issues they have spent the last 30-40 years resolving. This need not be the case; for example, the use of standard components and off-site manufacturing techniques does not mean that every social house in Scotland has to look the same, nor that quality or specification have to be compromised. Indeed, it can be about optimising the quality and specification.

CASE STUDY – FIFE HOUSING INNOVATION SHOWCASE

The recent Fife Housing Innovation Showcase in Dunfermline has considerable potential for enabling rapid progress in innovative techniques.

The project was grant funded with £2 million from the Scottish Government, through its Affordable Housing budget, and is a partnership between Kingdom Housing Association & Fife Council, with support from Fife Construction Forum & Green Business Fife and comprises 27 new houses on a site in Dunfermline based on ten different designs and using innovative construction methods, to demonstrate the benefits of these systems being used more widely in mainstream affordable housing. Comprehensive monitoring is ensuring that the innovative construction methods and products being used will be properly evaluated and then assessed for future wider applicability.

8.5.5 More sharing of hard data and outcomes, and the wider use and promotion of publications such as the Scottish Government's Greener Homes Prospectus will help to promote information exchange and refine practices.

8.5.6 The Scottish Government has a crucial role to play in linking with public sector clients to encourage better sharing of best practice across the public construction sector. This sharing of practice should also draw on crucial lessons learned from approaches which have been less successful.

8.5.7 We understand that a funding application is being made by Construction Scotland to the Scottish Funding Council to establish a Scottish construction innovation centre. In our view such a centre would allow more rapid progress to be made by the construction industry in technology and innovation on a collaborative basis. Scottish companies currently have to go outwith Scotland to carry out product testing. The bid is competing against other projects, but, if successful, will become an important enabler of progress in this critical area for the construction sector in Scotland.

8.5.8 Recommendations:

a) The Scottish Government should build on some good work by RSLs and others by better incentivising greener construction and promoting modern methods of construction and providing better advice and guidance on renewables technologies.

b) Construction guidance should be aligned to the wider sustainable procurement agenda in recognition of the potential for construction to demonstrate the benefits of good procurement and should take account of the findings of the Sullivan panel when they are published.

c) The Scottish Government should promote a more coherent joined up approach to sustainability for public sector construction.

8.6 Building Information Modelling (BIM)

8.6.1 Building information modelling (BIM) is defined by different people in different ways. The UK BIM Task Group starts by describing what it isn't before describing what it is:

“It's not just 3D CAD

It's not just a new technology application

It's not next generation, it's here and now!

BIM is essentially value creating collaboration through the entire life-cycle of an asset, underpinned by the creation, collation and exchange of shared 3D models and intelligent, structured data attached to them”.⁵⁴

8.6.2 BIM offers the opportunity to adopt a new collaborative approach which has the potential to achieve more efficient and effective ways of working through all stages of the construction project life-cycle. It is also considered to be a potential driver for growth as outlined in the Saxon report⁵⁵.

8.6.3 BIM should be employed to improve quality and efficiency to meet the aims of the brief. In this regard, the quality of briefing and monitoring of the design process are of particular importance within BIM projects.

8.6.4 By achieving more certainty in the design before construction starts, BIM brings other advantages in reducing waste and in the realisation of outcomes for environmental sustainability. BIM targets for carbon reduction and building performance in use can be prototyped and appraised with higher levels of certainty using BIM techniques. A number of professional practices and Scottish further and higher education institutions are already understood to be active in this field.

⁵⁴ BIM Task Group website, Frequently Asked Questions

⁵⁵ Growth through BIM, Richard G Saxon MBE, Construction Industry Council, April 2013

8.6.5 The UK Government is already well down the road of adopting BIM and has set a target that all “in scope” central government procurements (both new build and refurbishment; irrespective of project value; and explicitly with no trigger threshold) should achieve BIM level 2 compliance by 2016. This level of compliance is defined by the BIM Task Group as “a series of domain specific models (e.g. architectural, structural, services etc.) which provide a common data environment to share data and information defined by PAS1192:2⁵⁶ and are deliverable in COBie UK 2012”⁵⁷.

8.6.6 Professor David Philp, Head of BIM for the HM Government BIM Task Group comments that “starting with the Ministry of Justice we have over twenty projects using BIM processes and the early projects such as Cookham Wood Young Offenders Institution announced a 20 per cent reduction in capital cost.”

8.6.7 Wales and Northern Ireland are already committing to adoption of level two and other European countries such as Finland are at the forefront. On 18th December 2012 the EU voted to table a set of proposals as part of the review of the existing EU Public Procurement Directive which will encourage the progressive use of BIM in public works contracts across member states. The proposed use of BIM in public works largely echoes current UK policy while not imposing strict implementation requirements on national legislation.

8.6.8 We do not deny the challenge that this may offer for both public sector and industry but we believe that the savings being suggested both initially and throughout the life cycle of the structure make a compelling case for its adoption. In view of the development of BIM internationally and in the rest of the UK, the Scottish public sector and Scottish contractors risk being left behind if early adoption is not mandated.

8.6.9 RICS recognises this in its “What is BIM” paper, March 2012, in which Steve Pittard states that:

“BIM is not going to go away, and so we must, therefore, learn to adapt and embrace or risk the threat of losing ground to others.”

⁵⁶ Publicly available specification for information management for the capital/delivery phase of construction projects using Building Information Modelling

⁵⁷ COBie is a formal scheme that helps organise information about new and existing facilities

8.6.10 Through discussions with UK Government BIM leaders, who have shared their experiences of implementation with us, we believe that a realistic timescale for adopting BIM level 2 in Scotland would be from April 2017. Some of the background documents are already in place - PAS1192.2 has already been developed, and the next step, PAS1192.3 is in development – which would help to kickstart implementation in Scotland.

8.6.11 To implement BIM in Scotland successfully, the Scottish Government will need to identify resources to drive forward its introduction across the public sector. Many practical questions around implementation will need to be answered and communities of interest developed, building on existing BIM structures in Scotland, such as the BIM regional hub, as well as learning lessons from the UK BIM Task Group. The possible impact on planning and building control frameworks will also need to be considered. There is already Scottish representation on the Construction Industry Council's BIM4SMEs group and strategies to help support this part of the industry should be developed collaboratively. We also know of some major Scottish public contracts where BIM is already being used such as the Southern General Hospital in Glasgow and the Western General in Edinburgh and the experiences and lessons learned from these should be built on to help drive forward successful implementation.

8.6.12 We are strongly of the view that resources expended on this approach can result in significant savings and that it is crucial to establish a current baseline and evaluation process in order that these savings can be properly quantified over time.

8.6.13 **Recommendation:**

The use of Building Information Modelling (BIM) should be introduced in central government with a view to encouraging its adoption across the entire public sector. The objective should be that, where appropriate, construction projects across the public sector in Scotland adopt a BIM level 2 approach by April 2017.

8.6.14 A programme plan for BIM implementation by 2017 should be developed, along with guidelines and advice on the use of BIM. Suitable trial projects should be identified ahead of the 2017 target date and their management co-ordinated centrally.

8.6.15 When deciding if BIM will add value to a project, public sector clients should undertake an assessment of the likely return on investment from its use. This will not necessarily correlate directly with project value but may relate more to project complexity and longer-term functionality.

9. Data as an enabler of reform

9.1 Overview

9.1.1 Strategic policy decisions cannot be taken properly, nor direction set, without appropriate collation and analysis of public sector construction spend. Public sector construction spending is also an important economic lever, and so it is key that government knows how, where, when and on what this money is being spent to be able to measure and evaluate its full impact.

9.1.2 We note in chapter 5 the steps that have been taken to improve visibility of future construction activity for industry in the shape of the Infrastructure Investment Plan and our recommendations for improvements to pipeline information as the current approach to data collection is inconsistent and does not promote shared strategic thinking or decision-making on the use of that construction spend to achieve the greatest impact and benefit for Scotland.

9.1.3 There is also a lack of comprehensive collated data for public sector construction spend in Scotland. This means that any assessment of how efficiently and effectively that spend as a whole is being invested is extremely difficult to make.

9.1.4 The use of existing and improved data feeds into the delivery of many of our recommendations throughout the report.

9.1.5 In outlining our views on data, we are aware that careful consideration should be given to the usefulness and comparability of any data to be gathered and collated as well as any commercial sensitivities. Its purpose and value must be clear both at a disaggregate and aggregate level. Our vision is that the power of good quality data should be used as an enabler of reform both at strategic and local delivery levels.

9.2 Management information

9.2.1 A recent evidence review undertaken by the Scottish Government as part of the wider Procurement Reform Bill process concluded that:

“Drawing on the evidence from across the EU and the information available from current systems, there is a need to gather more data in a consistent and comparable manner across the public sector and the need to mandate the collection of that data. Progress has been made in the creation of different systems but more could be done to strengthen those systems to allow for the more systematic collection of reliable data, which would allow for a more detailed picture of procurement reform progress, the procurement landscape and the performance of organisations engaged in it.”⁵⁸

9.2.2 This holds true for the data we believe should be consistently gathered and analysed by the public sector in their management of construction projects and programmes. Such information would also provide evidence to support and measure policy development and implementation.

9.2.3 Our stakeholder consultations and evidence gathering as part of this review have highlighted areas within the public sector where good management information is currently being monitored and used to inform future procurement but it has also shown the varying stages that public sector partners are starting from. The following areas are the component parts which we believe all public sector partners should address when looking at data collection and usage.

9.3 Baseline data

9.3.1 Baseline data provides a point of reference to measure both existing and future performance and can be used as a basis for setting benchmarks and metrics. Establishing a baseline of current levels of performance should also enable the realistic appraisal of procurement approaches currently being used.

⁵⁸ Public Procurement Reform – a rapid evidence review, Dr Vivian Leacock, Scottish Government, August 2013

9.3.2 An important element in building that baseline is looking back and learning from experience. Audit Scotland's January 2011 "Management of the Scottish Government's capital investment programme" report recommended that the Scottish Government should develop standard criteria for inclusion in post project evaluations and ensure that they are completed for every major capital project and lessons learned are shared across all relevant public bodies. This was followed by their recent finding relating to local authorities which was that only 40 per cent of the projects they audited were delivered with the initial cost estimate⁵⁹.

9.3.3 We see the need to establish a baseline position of performance in publicly funded construction projects and believe that such baseline data should include:

- How projects/programmes delivered against planned and agreed programme and cost.
- The contractual arrangements driving that performance – for example, was it a fixed price contract, target cost, cost reimbursable, with or without quantities, single stage, partnering, lump sum, cost plus? Did the contract type factor in the outcome?
- What quality standards were aspired to and then achieved?
- What was delivered against community benefit and sustainability targets?
- Identification of common major contractors.

9.3.4 In building such a baseline, data should be collected at key stages from inception to project completion to allow a full evaluation to be undertaken.

9.3.5 This would set the baseline for procuring organisations then to measure and challenge themselves against their own and, where relevant, others' performance and to challenge their approach to and expectations of future procurements. It would also allow the identification of opportunities to adopt an efficient and strategic approach to supplier relationship management across the public sector, building on the ideas set out in the UK Government's Construction Strategy, such as the use of strategic alignment agreements.

⁵⁹ Major Capital Investment in Councils, Audit Scotland, March 2013

9.3.6 Consistency in the way this data is requested and recorded needs to recognise and be sensitive to sectoral nuances and contracting organisations' varying data collection starting points.

9.4 Benchmarking, Metrics and Key Performance Indicators

9.4.1 The performance of projects, programmes and indeed public bodies in relation to one another is facilitated by benchmarking, which is best achieved by common datasets and directly comparable indicators. Benchmarking, metrics and KPIs are currently used by many public sector organisations to assist their programme and project management processes but their scope, consistency and robustness varies - metrics being a numeric measure only whereas benchmarks and KPIs can be both numeric or qualitative. The objective of this data is to ensure value for money in the delivery of the specific asset but also to inform the most effective ways in which to make future investments. Once a baseline has been established, we see real value in benchmark performance measures being developed and used to inform future project evaluation and performance management. We believe that these should be developed on a sectoral basis first, with a view to collating and comparing more generically, where appropriate.

9.4.2 Such data would also identify opportunities for further information analysis and exchange to understand what might be driving benchmark statistics in both their and other procuring authorities and has the potential to be an efficiency driver by strengthening the public sector's ability to understand and challenge industry costs in an intelligent way.

9.4.3 This should eventually be extended to include ongoing data collection post-project delivery to allow fuller life-cycle costing considerations to be explored and used in future decision making whether on strategic capital and revenue budget requirements or in assessing individual project value for money.

9.4.4 This enhanced benchmarking data can then be used as a tool in business planning and new contract awards. The Chartered Institute of Public Finance and Accountancy recognises the importance of benchmarks:

“benchmarking offers a catalyst for driving efficiency, identifying new solutions that offer cost reductions and raising the performance of an organisation to the standards achieved by the best”⁶⁰.

9.4.5 One such example of using data to inform future procurement comes from the Scottish Futures Trust. At a regional level data is gathered by the hubCos and SFT itself gathers data in respect of the Non Profit Distributing (“NPD”) programme which it runs. SFT has developed a set of metrics for the Schools for the Future programme and in non-schools projects it has developed a method for establishing an “intelligent benchmark” which is then used to set an affordability cap for new projects. The extensive work by SFT, National Services Scotland and some other authorities provides scope for the development of a consistent and transparent basis to build better performance management and delivery through the development of benchmarks, metrics and KPIs.

⁶⁰ Better Benchmarking for High Performance, Chartered Institute for Public Finance and Accountancy, 2010

9.4.6 Other data is currently collected by public sector clients, but it is not always readily accessible, nor is it always maintained regularly; in a common format; or for a common purpose. An example of this is Scottish Government Housing Supply Division (HSD) which used to gather comprehensive data to be used in developing subsidy benchmarks and informing other policy decisions. In recent years, streamlining of the grant regime has meant that the detail of the data it has been able to draw on has been diminished. HSD still process Tender Returns for analysis and use in the Scottish Social Housing Tender Price Index but there is scope for some of that information to be used more widely in assessing value for money and shaping future affordable housing delivery as well as assessing what other data could be gathered to complement investment decisions. Scottish Government guidance notes that “all or a proportion of projects will be subject to post completion scheme review”.⁶¹ Reinstatement, rationalisation and reinvigoration of these processes will help HSD in assessing the effectiveness of the procurement decisions they and their partners are taking and informing future procurements. This recommendation for HSD could similarly be applied to other areas of the public sector.

9.4.7 It is strongly recommended that monitoring and benchmarking data is strengthened by all public bodies to help increase market intelligence and better inform future policy and programme management. While we accept that some categories of construction expenditure are specialised, there may also be common elements which could usefully be compared to produce benchmark information and help develop KPIs. The potential to extend this to benchmarking against private sector performance should also be considered.

9.4.8 We believe that the conduit for sharing benchmark information across the public sector should be the enhanced construction procurement policy function within the Scottish Government, and that, where relevant and non-commercial, that benchmark information is published where possible. Initial work should focus on the SFT approach with a view to formulating a standard public sector approach.

⁶¹ Housing Supply Guidance Note 2012/06, Affordable Housing Supply Programme, Strategic Local Programmes 2012-2015

9.4.9 Good quality data should be used to identify what success looks like in the procurement of projects/programmes and the changes required to reflect good practice. Better data should also help in identifying areas where continuing to procure in isolation does not make sense.

9.5 Performance Management and Continuous Improvement

9.5.1 Monitoring performance through the use of benchmarks and KPIs will assist clients better to understand, manage and analyse that performance and the factors influencing it.

9.5.2 That learning can then be used across public sector construction to improve practice, out-turn and outcomes and reap full value from public investment and the holy grail of becoming the often quoted “intelligent client” who is actively involved throughout the project in managing risks with the contractor should then become more achievable.

9.5.3 As a result, target setting and KPIs should be more informed and improved data fed straight back in to business planning stages for new projects to improve the reasonableness of assumptions and expectations when it comes to budget setting (cost), quality and timescales. Linkages can also be made across other areas of performance e.g. design, community benefits delivery, payment performance, whole life costing.

9.5.4 Transparency and accountability should also be strengthened as a more robust set of measures and challenges will be applied to construction investment decisions. By applying these principles not only at business plan, project appraisal and completion but also during the construction phase as outlined in section 6.9 on project assurance, outcomes can be improved in a more responsive way.

9.5.5 There is some work to be done in ensuring that these approaches are wholeheartedly adopted across the public sector as Audit Scotland's findings as part of their report on capital investment by local authorities bear out:

“...just over half of the 63 completed projects in our sample have been evaluated to assess whether they have delivered the intended benefits.”⁶²

9.5.6 This builds on Audit Scotland's recommendation that:

“...public bodies should ensure that they carry out post-project evaluations within six months of project completion to determine whether projects have delivered, or are on course to deliver, the initial benefits intended. Evaluations should consider performance against cost, time and quality targets.”⁶³

9.5.7 The principle of learning lessons from past experience, however, is already being embraced by some following the 2011 Audit Scotland report statement on the need to develop standard Learning Lessons criteria and ensure that evaluation is carried out on all projects and shared across public bodies.

9.5.8 The Scottish Government has adopted a central strategic role in facilitating, promoting and sharing lessons learned and has mandated the use of Learning Lessons for major investment projects. A pilot project with delivery bodies which have more mature Learning Lessons procedures in place, including Transport Scotland, the Scottish Funding Council and the health sector is currently underway. This feedback will be supplemented with assessments from a separate exercise, involving Gateway Review and Key Stage Reviews with key lessons learned being published in early 2014.

9.5.9 We recognise at various points within this report the importance of sharing lessons learned and see real value in actions in this regard taking cognisance of the work already underway through the Learning Lessons approach to ensure that continuous improvement is achieved.

⁶² Major Capital Investment in Councils, Audit Scotland, 2013

⁶³ Management of the Scottish Government's capital investment programme, Audit Scotland, 2011

9.5.10 Recommendations:

Action should be taken to ensure robust systems are in place to track all spending on construction by public authorities such that a complete analysis of annual public sector construction spend in Scotland can be easily available.

Sectoral records of project outturn costs, including what they were estimated to cost at business plan and contract award stages and actual cost on completion, should be developed and maintained so as to provide meaningful benchmark figures for the public sector in Scotland. These records should also record timescales and quality measures to enable a true assessment of performance delivery to be made.

Guidance should be developed on robust management information requirements and should cover baseline data, benchmarks, metrics and KPIs.

Project evaluation should be promoted and should build on the Learning Lessons Approach.

10. What the industry needs to do

10.1 Overview

10.1.1 Throughout this report, we have signalled that we believe there are a number of areas where changes to the public sector's approach to procurement is only one element of what is needed to make a positive change.

10.1.2 We believe that some of the problems and issues which have been raised with us as we have spoken to stakeholders are, at least in part, of the industry's own making. Late payment down the supply chain, retentions abuse and suicide bidding are not problems which the public sector alone can resolve: industry must play a leading role.

10.1.3 The problem, however, is that the construction industry in Scotland is a vastly fragmented and complex landscape, which mirrors in many ways the myriad of different entities and professions which make it up.

10.1.4 And there are a great number of construction companies. Two-thirds of those employed in construction in Scotland work for small firms which employ fewer than 50 people, some 12 per cent work for medium-sized firms employing between 50-249 people, and 22 per cent for companies which have grown beyond the SME bracket⁶⁴.

10.1.5 We have deliberately resisted being prescriptive in our recommendations in this chapter – choosing instead to highlight a number of challenges which we believe the industry must address. We have heard time and again that if industry is to change, it must be industry which owns and drives those changes.

10.1.6 Well, let this be the impetus. We have set out here a series of challenges to the industry – it is for the industry to step up, to organise itself, and to address these challenges.

⁶⁴ Businesses in Scotland, 2012, Scottish Government, page 39

10.2 A cohesive voice

10.2.1 There are a great many separate bodies representing trade and professional groupings within the construction industry. These each have their own role and their own interests. We do not seek to downplay or undermine these bodies.

10.2.2 However, there is a clear need for these bodies to come together to agree a common agenda, such as the one we have suggested here. This is a long-recognised problem, most recently in Construction Scotland's Industry Strategy:

“Representation of the industry is extremely fragmented. Over 100 separate membership organisations are involved in engagement with government, each representing specific parts of the industry. None of these bodies currently represent the industry as a whole. This fragmentation puts the construction industry at an immediate disadvantage as it competes with other sectors to get its key messages heard, recognised and acted upon by government” .⁶⁵

10.2.3 Accordingly, the first step will be to seek agreement on how the industry can best co-ordinate its efforts. We believe that the newly formed Industry Leadership Group, under the auspices of Construction Scotland may facilitate this. For it to do so effectively, however, its membership may need amended to ensure sufficient buy-in from across the industry.

10.2.4 We urge industry to commit earnestly to support this Industry Leadership Group – it is already up and running, has the backing of Scottish Enterprise, and if it can be made to work, is potentially a very powerful voice for industry, as well as driving force within it.

⁶⁵ Building for the future: The Scottish construction industry's strategy 2013-2016

10.2.5 Recommendation:

The Chief Construction Adviser should hold talks with the Industry Leadership Group and with other trade and professional bodies and representative institutions to agree on how the industry should co-ordinate its efforts.

10.3 Treating each other fairly

10.3.1 We have made suggestions in section 6.8 as to some of the steps which the public sector can take to improve payment down the supply chain.

10.3.2 But this, like so many other issues, is one which is primarily of industry's own making. The contractual and working relationships between two private firms may well be influenced by the relationship with the client, but ultimately are a reflection of the way in which those two firms choose to treat each other.

10.3.3 We both have experience of a number of different industries – some of which see no shortage of machismo. Never, however, have we come across an industry which is as confrontational as the construction industry, or indeed, one in which there appears to be so little professional respect between firms.

10.3.4 We understand that these are tough times, and, as we recognise in section 6.8, everyone is under a great deal of pressure. But some of the behaviours which occur in the construction industry – especially as they relate to payment (both payment terms and valuation) and retention abuse – are particularly corrosive.

10.3.5 We are not naïve enough to believe that things can change overnight. But neither do we see any reasonable justification for firms not replicating the fair treatment which they rightfully demand from their public sector clients in their dealings with other firms.

10.3.6 Recommendations:

The Fair Payment Charter should be promoted more widely as the norm within the construction industry. The industry should consider how it can collectively make late payment of suppliers an unacceptable practice.

When the public sector adopts good practice – such as might relate, for example, to the appropriate use of retentions, requirements for insurance or the use without alteration of appropriate standard forms of contract – industry should replicate this throughout the supply chain.

10.3.7 Another issue of fairness, which has been much in the news recently, is that of blacklisting of construction workers. Earlier this year, the Minister for Transport and Veterans told the Scottish Parliament that:

“The Scottish Government is totally opposed to blacklisting or the compiling of a blacklist. We expect companies that are awarded public contracts maintain high standards of business and professional conduct”⁶⁶.

10.3.8 We concur with this statement – there is no place for blacklisting in the construction industry, and we understand that the proposals contained in the Procurement Reform Bill will provide powers to tackle companies which do not comply with their legal obligations, including on blacklisting and employment law.

10.4 Bidding sustainably

10.4.1 Abnormally low tenders – or ‘suicide bids’ – can be a big problem for everyone. Firms submitting such tenders risk their financial health, maybe even their survival, and clients risk being faced with either a contractor which submits a multitude of claims to try to recoup funds, or a contractor which is unable to complete the work – or both.

10.4.2 And yet, as we discussed in chapter 7, this issue is notoriously difficult for public sector clients to deal with.

⁶⁶ From the answer to written parliamentary question S4W-15076, 29 May 2013

10.4.3 We accept that there are any number of reasons why a firm might take a commercial decision to submit a lower than usual tender for a given piece of work – it may have a short gap in its order book that it would rather fill with something, than have its workforce sit idle, for example; or it might be trying to break into a particular sector and recognise that without a strong history it has to compete harder on price. Ultimately, so long as such bidders are acting within the law, and can actually deliver those contracts at the agreed price, then that is their decision.

10.4.4 What we are keen to see brought to an end, however, are bids which are deliberately set at an uneconomic level to win the work on the basis that the difference will be achieved by negotiation on specification and quality, or through claims.

10.4.5 This will require some innovative thinking – you do not need to stray too far into this territory to run up against anti-cartel legislation. But industry must be involved in the solution to secure the necessary buy-in.

10.4.6 There may also be some relatively simple measures which can be taken, such as rolling out schemes like the Royal Incorporation of Architects in Scotland's "Bid / Don't Bid" assessments. These encourage firms to take a more pragmatic approach to deciding which contracts to tender for. By tendering for fewer contracts, firms waste less money tendering for work they are unlikely to win, and are able to invest more into the tenders they do submit.

10.4.7 **Recommendation:**

The industry should consider what is prompting 'suicide bids', and how to arrest them, so that both the customer and the contractor get a fair deal.

10.5 Industry helping industry

10.5.1 The private sector is self-evidently competitive. Nonetheless, there are clearly some areas in which a cross-industry approach can be mutually beneficial – such as in the development of apprenticeship schemes, or a standardised approach to new technologies.

10.5.2 Recommendations:

Industry should use existing sources of guidance and work with the public sector to develop best practice models for the delivery of community benefits, and a shared apprenticeship model.

The industry needs to be ready to embrace modern methods of construction, and new and emerging technologies such as Building Information Modelling.

The industry should consider what industry-led training programmes currently exist for those bidding for public sector work, and whether there is scope for these to be co-ordinated and developed further.

11. Resource implications and potential savings

11.1 Resource implications

11.1.1 The recommendations which we set out in this report have resource implications. Although we recommend that existing resources be used to the extent possible, more expert leadership in construction procurement will have cost implications as will, in the shorter term, the need for a change management team. Resources will be needed:

- to strengthen the construction procurement policy function within the Scottish Government;
- to fund the appointment of a CCA; and
- to support the rollout of Building Information Modelling.

11.1.2 There may be a case for these costs to be shared by all the public bodies which should benefit from their introduction whether through cash, time and/or resource contributions.

11.2 Savings

11.2.1 However, we believe that the recommendations of this report, bring considerable potential for savings which should more than pay for the direct costs of their implementation, as indeed we understand that substantial savings have been realised from the earlier phase of procurement reform focussing on goods and services.

11.2.2 We believe that savings may arise from:

- More focus on an outcomes, design-led approach to the planning of the project and to whole of life cost;
- Streamlining of processes to reduce construction procurement to its essentials and to cut out the existing substantial unnecessary detail and bureaucracy, for example in pre-qualification questionnaire systems;
- “Self-delivery”, as described in section 6.5;
- The “new models” of procurement being trialled by the UK Government, dealt with in section 6.6;
- The use of “painshare / gainshare” methods, outlined in section 6.7;
- Increasing the limits for the use of Quick Quote, described in section 7.3, allowing a more streamlined approach for smaller procurements;
- The introduction of Building Information Modelling, as described in section 8.6; and
- The sharing of data and best practice.

11.2.3 Audit Scotland attributed £327 million of savings, or four per cent of annual procurement spending⁶⁷, to the first two years of the procurement reform programme following John McClelland’s 2006 report. It may be reasonable to expect that a proportionately similar level of saving should be achievable from the implementation of our recommendations as were achieved, in the first stages of the wider Public Reform Programme, principally relating to goods and services. Assuming an identifiable annual construction spend of some £3.2 billion, as outlined in chapter 3, this would indicate savings of at least £120 million over the same timeframe.

⁶⁷ Improving Public Sector Purchasing, part 2, Audit Scotland, July 2009

11.2.4 Construction spending is different, however, and many of our recommendations also speak to consideration of whole life costs; as well as savings in the time and energy taken to procure; and the delivery of social and economic benefits.

11.2.5 Further work is needed to understand and gather information on current spending and therefore the precise scope for achieving and measuring savings. We recommend elsewhere that a baseline position be established for the current categories of spend and one of the early tasks should be to promote targets for savings following the gathering of this information.

11.2.6 Taking account of the opportunities for substantial savings in the initial capital spend set out in this report and the opportunities for savings over the whole life of the project, we hope that it will be possible to set targets for savings considerably in excess of the figure of £120 million, not just over the first stage of the construction procurement reform programme, but annually. We have considered whether we should ourselves set a target, but the evidential base is currently lacking.

11.2.7 Whatever targets are set, it will be important for contracting authorities to report their spending and savings in a consistent manner in order that progress can be accurately measured.

11.2.8 For industry also, we hope that the implementation of the recommendations of the report will lead to a better, more efficient approach, which should allow a reduction in the initial costs of procurement. An expert-led plan for a construction project which is clear from the outset will allow the reduction of much of the waste which is caused where plans have been insufficiently developed and need to be changed as the project proceeds. The greater involvement of industry at an earlier stage of the project will allow innovative ideas to be brought to bear which can save money for both public sector and industry.

12. Implementation plan

12.1.1 In the implementation of our recommendations, a guiding principle should be to seek to reduce costs by removing unnecessary procedures and simplifying the procurement process.

12.1.2 In appendix 4 we set out a summary of our recommendations, an implementation plan and timescales. We hope that the detail given in the report and the consensus which we believe we have achieved in the wide consultation which has preceded it will allow a rapid deployment of the necessary resources for its implementation.

12.1.3 We have suggested some timescales in which we believe that these recommendations can be implemented. This is, however, very much dependent on the allocation of sufficient resources to make this happen.

12.1.4 The report does not allocate lead responsibilities for implementing each of our recommendations. This is one of the first tasks which the strengthened construction procurement policy function needs to undertake in collaboration with others.

12.1.5 We understand that much of the success of the procurement reform programme to date has arisen from its collaborative approach, rather than through compulsion. This is a good basis on which to build, and accordingly, most of our recommendations are framed in this manner.

12.1.6 Previous reports looking at the construction industry, however, have sometimes failed to achieve their goals through a lack of teeth, and if it becomes apparent that it is not possible to achieve the changes necessary through collaboration, then the Scottish Government should be willing to consider compelling the implementation of these measures.

Appendix 1- Glossary

AHSP	Affordable Housing Supply Programme
APUC	Advanced Procurement for Universities and Colleges
BIM	Building Information Modelling
BREEAM	Building Research Establishment Environmental Assessment Method
CAD	Computer-aided design
CCA	Chief Construction Advisor (see section 4.4)
CECA	Civil Engineering Contractors Association
GVA	Gross value added
HSD	Housing Supply Division (Scottish Government)
IIB	Infrastructure Investment Board
IIP	Infrastructure Investment Plan
ITT	Invitation to tender
KPIs	Key performance indicators
LHS	Local housing strategies
NPD	Non-profit distributing
PCA	Procurement capability assessment
PCS	Public Contracts Scotland
PPRB	Public Procurement Reform Board
PQQ	Pre-qualification questionnaire
PRDG	Procurement Reform Delivery Group
RIAS	Royal Incorporation of Architects in Scotland
RICS	Royal Institution of Chartered Surveyors
RSL	Registered social landlord
SAP	Standard assessment procedure
SFT	Scottish Futures Trust
SHIP	Strategic Housing Investment Plan
SLP	Strategic local programmes
SME	Small and medium-sized enterprise
SPCD	Scottish Procurement and Commercial Directorate

Appendix 2 – Full terms of reference

To review the entire public and affordable housing sector construction procurement arrangements in Scotland and make recommendations to support improvements in efficiency, delivery and sustainability of construction procurement projects across the Scottish public sector and to ensure that Scotland’s public and affordable housing sectors make best use of both their and the industry’s resources.

The review should seek to build on best practice in existing structures and resources, such as SFT’s regional Hubs, wherever possible and should have regard to the principles of the 2006 McClelland report (translating them to a construction context) and the wider procurement reform landscape. Recommendations resulting from the review should be accompanied by an implementation plan.

The review will need to take account of:

- key stakeholder views;
- Audit Scotland’s Review of Major Capital Projects (published in late June 2008), and the follow up report, published in January 2011 (“Management of Scottish Government’s Capital Investment Programme”);
- the UK Government’s “Construction Strategy” published in 2011;
- the 2006 McClelland Report and,
- other sources of relevant information including the Procurement Information Hub and Scottish Government’s “Construction Procurement Manual” (or other sources of good practice guidance for construction).

The Review will examine:

- current structure and organisation of construction procurement activity across the wider Scottish public sector, including affordable housing and Registered Social Landlords (RSLs);
- skills and capability deployed by purchasing bodies;

- existing practices and procedures;
- measures of performance indicators and targets applied;
- existing sources of advice and guidance;
- application of project assurance techniques;
- sustainability in a construction context; and
- what lessons can be drawn from experience elsewhere (e.g. the UK Government Construction Strategy).

The review will identify opportunities and make recommendations to ensure that the construction sector:

- achieves efficiency improvements through opportunities for collaboration where appropriate;
- raises its performance through improvements to capability, procurement practice and project assurance;
- is able to identify and quickly adopt emerging best practice and that practices are standardised wherever possible;
- adopts good practice in relation to sustainability, including life cycle costing and reduced carbon and energy consumption;
- manages common/major contractors and projects effectively;
- makes best use of available construction procurement/project skills; and
- makes best use of new and emerging innovations in techniques, technology and materials (e.g. Building Information Modelling).

Appendix 3 - Approaches to construction by sector

Local government

Scotland's 32 local authorities were responsible for some £2.1 billion of spending on construction in 2011-12. The size and budget of the 32 authorities varies significantly, and consequently so does their level of spending on construction. Each local authority has its own set of standing orders which determine how it carries out procurement – neither the provisions of the Scottish Public Finance Manual, nor the Scottish Construction Procurement Manual are mandatory for this sector.

Scotland Excel is the established centre of expertise for procurement in the local government sector. It is a non-profit organisation, funded by the 32 local authorities, and, as of April 2012, had a portfolio of 48 contracts with an estimated annual value of approximately £300 million⁶⁸. To date, it has had limited influence in construction, although we understand that it is investigating the potential for it to increase that influence – indeed, it recently awarded a framework agreement for engineering and technical consultancy services.

Each of the 32 local authorities is also a participant in one of the five hubCos established across Scotland as a means of delivering capital investment. The structure and role of hubCos are discussed later in this appendix.

Health

There are 14 territorial NHS Boards, seven special NHS boards and one public health body in Scotland. Health Facilities Scotland is the Facilities Directorate of the Procurement Commissioning and Facilities Strategic Business Unit within National Services Scotland, and has established frameworks which NHS Scotland Organisations can call off from for the procurement of capital works. These frameworks can also be used by other health or public sector bodies for combined, or related health and social care projects.

⁶⁸ Continuing our journey 2012-2015, Scotland Excel, page 2

There are a number of routes by which construction works are delivered in the health sector in Scotland.

The non-profit distributing (NPD) model is used for large scale, acute facilities; Frameworks Scotland (awarded by Health Facilities Scotland) is used for publicly-funded acute facilities and projects involving an element of refurbishment; whilst hubCos and the health boards themselves can deliver other facilities.

Frameworks Scotland comprises a framework agreement covering principal supply chain partners and also frameworks for professional services contracts covering the required disciplines for the form of contract. These frameworks cover the whole of Scotland, and the contracts are based on the NEC3 models. Individual health boards are not obliged to use Frameworks Scotland, but do have to justify their reasoning if they choose not to do so.

hubCos are discussed below. All territorial health boards are participants in one of the five hubCos. The agreements which underpin the creation of hubCos include “exclusivity thresholds”, and the local hubCo should be offered the first opportunity to demonstrate a value for money and timely proposal for all relevant health board projects worth more than this threshold. The threshold for the first three hubCos to be established (South-East, North and East-Central) is £750,000, whilst for the final two hubCos (West and South-West), the threshold stands at £3.5 million.

Transport

Transport Scotland is the national transport agency for Scotland. The agency is responsible for overseeing the operation and improvement of:

- trunk road, ferry, inland waterway and railway networks in Scotland
- air passenger facilities and routes in the Highlands and Islands
- national concessionary travel schemes
- provision of travel information services
- future transport policy and investments
- promotion of sustainable transport and road safety

For new roads infrastructure work, Transport Scotland procures and manages a number of different types of contract models. These include private finance models such as non-profit distributing for some high-value, strategic infrastructure projects and capital funded fixed price, design & build and employer's design contracts.

Transport Scotland has contracts in place with operating companies who ensure the trunk roads are safe, efficient and well managed. These contracts are divided into four regional units and are currently operated by:

- North West – Operated by BEAR Scotland since April 2013
- North East – Operated by BEAR Scotland since April 2007 (contract extended to 31 March 2014)
- South East – Operated by BEAR Scotland since April 2007 (contract extended to 31 March 2014)
- South West – Operated by Scotland TranServ since April 2013

Operating Companies carry out all works up to a threshold value of £250,000 for the east contracts, and £350,000 for the west contracts. Between these values and £5 million, works are competitively tendered through the Operating Company Contracts.

Ministerial objectives for improving the Scottish Rail Network are taken forward in conjunction with the rail infrastructure owner, Network Rail. Arrangements are in place which enable Network Rail to maintain the infrastructure required to facilitate the train services and also deliver the agreed rail programmes, including the procurement of works and services for projects such as the construction of the Borders Railway and the Edinburgh Glasgow Improvements Programme.

Water

Scottish Water is the public corporation charged with managing Scotland's water network. It has an investment programme worth around £450-500 million per annum. Scottish Water Solutions is a joint venture delivery vehicle in which Scottish Water has a 51 per cent share ownership, with the balance held by delivery partners. It is currently the delivery vehicle for 30 per cent of the investment programme.

Scottish Water's investment priorities are set by Scottish Ministers, with the Water Industry Commission in Scotland providing a value for money challenge to Scottish Water's proposals for delivering on these priorities.

Scottish Water is primarily subject to the provisions of the European Utilities Directive, rather than the Procurement Directive.

Affordable housing

There is a complex landscape in the delivery of affordable housing in Scotland. The Scottish Government's Affordable Housing Supply Programme (AHSP) funds housing for rent and for low cost home ownership. The majority of funding is provided to Registered Social Landlords (RSLs) and local authorities to build new homes for rent, although the AHSP also provides funding to improve existing homes, often as part of the wider regeneration of an area, and to others such as private developers.

All local authorities publish Local Housing Strategies (LHS). These set out a strategic approach to addressing housing need and demand and inform the delivery of housing and related services over a five year period. Authorities supplement their LHS with an annual Strategic Housing Investment Plan (SHIP) which is the key document for setting out the priorities for affordable housing investment at the local level over a five year period and provides the basis for targeting the AHSP funds locally to meet the desired outcomes as outlined in the LHS. A recent addition to the SHIP requirements is for a Strategic Local Programme to be developed which matches the SHIP priorities to available resources over a three year period. The award of AHSP funding to local authorities and RSLs is administered by the Scottish Government Housing Supply Division, except in Glasgow and Edinburgh, where the two city councils administer the funding to RSLs within their areas as a result of the Transfer of Management of Development Funding. In 2011-12, total AHSP grant funding was £352 million.

There are approximately 180 RSLs registered in Scotland, of which we understand some 40-50 are actively engaged in development work at any time. Each RSL has its own constitution, policy and procedures and is governed by a voluntary committee.

There have been some sporadic attempts at collaborative procurement within the RSL sector. There are examples of this in West Lothian and Fife, where a model operates in which a lead RSL acquires sites, procures contracts and develops the projects. An agreement between partner RSLs identifies their roles and relationships, and also covers risk assessment, risk management and risk sharing. As part of that agreement, they identify and agree specific projects which will transfer from the lead RSL to other members at completion stage. After completion, the 'landlord' RSL or council then owns and manages their new housing. These approaches tend to be strategic in nature and have the support of the relevant local authority.

Most alliances under this model are not separate legal entities; they are generally a consortium and each RSL retains its own identity. Each RSL also retains responsibility for reporting to its own management committees. There are also less formal arrangements driven by some councils in which only a small number of RSLs receive funding for new developments.

Another form of collaboration is through the use of agency services. From Annual Performance and Statistical Returns submitted to the Scottish Housing Regulator we also know that 21 RSLs were using other RSLs' development services and 13 RSLs were using non-RSLs to deliver their affordable housing programme in the twelve months to 31 March 2012. Twelve RSLs were providing development agency services to RSLs and local authorities.

Central government

The remainder of central government and its agencies – such as the Scottish Prison Service and Scottish Court Service – is responsible for lesser amounts of direct construction spending, although it does take forward some large projects, like the construction of the new Scottish Crime Campus at Gartcosh.

The Scottish Procurement and Commercial Directorate performs a triple role as the Centre of Expertise for procurement within the central government sector, the National Centre of Expertise (awarding national contracts for stationery and utilities, for example), and as the policy centre for procurement.

The Scottish Government currently carries out very few construction exercises. It does, however, retain some residual professional construction expertise, whose focus is policy development.

Universities and colleges

Data from the Procurement Information Hub shows that universities and colleges spent at least £219 million on construction works in 2011-12.

We are told that universities tend, by and large, to carry out these exercises themselves – or at least to appoint consultants to act as project managers on their behalf. In the college sector, in-house expertise tends to be more limited and the reliance on external funding greater, and so the Scottish Funding Council has in the past taken a much stronger role in overseeing capital projects. The three large college projects currently underway, however – in Kilmarnock, Inverness and Glasgow – are all being delivered by the non-profit distributing model, with support from the Scottish Futures Trust.

The established centre of expertise for this sector is Advanced Procurement for Universities and Colleges (APUC). APUC has a small team which can support capital projects in colleges, although we are told that their focus is increasingly involved on maintenance and general estates management work. There is a strong relationship between APUC and directors of estate in the sector.

Scottish Futures Trust

The Scottish Futures Trust (SFT) was established in 2008 as a limited company wholly owned by Scottish Ministers, with the aim of improving the efficiency and effectiveness of infrastructure investment in Scotland. It works collaboratively with a range of public bodies to deliver innovative financing for infrastructure investment, particularly through the delivery of the non-profit distributing programme of works; the National Housing Trust; and works funded by tax incremental financing.

Taken together, these three programmes represent more than £3 billion of public sector investment⁶⁹, which makes SFT a very significant player in the Scottish construction sector.

Whilst SFT is wholly owned by Scottish Ministers, and is therefore subject to the provisions of public procurement law, its arms-length status does give it some more latitude in some aspects of its operations – such as its ability to recruit outwith the boundaries of civil service restrictions.

In addition it works to support public bodies with property asset management, through supporting the hubCo programme and facilitating the Schools for the Future programme.

hubCos

There are five regional “hubCos” in Scotland. These are institutional public private partnerships owned 60 per cent by a private sector partner, 30 per cent by the public sector partners within each of the five territories, and 10 per cent by the Scottish Futures Trust. The rights to the private sector share ownership in each of the hubCos were competitively tendered and a diverse range of public sector partners are involved, for example health, local authorities, emergency services and RSLs.

⁶⁹ Business Plan 2013-2014, Scottish Futures Trust

The aim of this approach is that:

“Each hubCo will take a strategic, long-term planning approach of its infrastructure requirements to support the delivery of community services. hub will provide a mechanism for delivering and managing assets more effectively, with continuous improvement leading to better value for money, which will be measured through detailed key performance indicators”⁷⁰

There is an “exclusivity threshold” set for NHS primary and community-based projects within each hubCo area, which means that the local hubCo should be offered the first opportunity to demonstrate a value for money proposal for all relevant health board projects worth more than this threshold. The threshold for the first three hubCos to be established (South-East, North and East-Central) is £750,000, whilst for the final two hubCos (West and South-West), the threshold stands at £3.5 million.

⁷⁰ <http://www.scottishfuturestrust.org.uk/our-work/hub/five-hub-territories/>

Appendix 4 – Implementation plan

The following implementation plan brings together the recommendations from the main body of the report and outlines some of the measures that will be required to ensure they are implemented successfully. Lead responsibilities have not been allocated here – this is one of the first tasks that the strengthened construction procurement policy function needs to undertake, in collaboration with others – but it should be noted that in line with our consultative approach to this review, only a collaborative approach from across the public sector and industry will ensure the best solutions are developed and maximum impact achieved. Timelines have been suggested for the various actions to be taken forward, but are based on appropriate resources being assigned to the implementation phase. The numbering relates to the section in the main report in which the recommendation is found.

4. Governance, accountability and leadership

Section	Recommendation	Implementation measures	Timeline
4.2	The construction procurement policy function within the Scottish Government should be strengthened	<p>This policy function should be established under the clear control of a senior manager within the Scottish Government.</p> <p>It should be suitably resourced to set the policy for construction procurement in Scotland, to be a central resource for advice, and to drive the adoption of best practice across the public sector.</p> <p>Although we recommend that this capability and capacity should be strengthened within the Scottish Government, and it is clearly appropriate that government retains responsibility for developing policy, we recognise the delivery expertise which has been built up across the public sector, and as such, it may be appropriate for Scottish Ministers to commission work to support policy development from those other bodies with proven expertise.</p>	<p>Work to more fully scope out the role should begin immediately.</p> <p>Where possible existing resources within SG should immediately begin to form the basis of the strengthened policy function</p> <p>Some additional recruitment is likely to be necessary</p>
		<p>All parties will need to ensure that they work closely and in co-operation with each other to ensure that their activities and functions are complementary and co-ordinated, under the auspices of the Public Procurement Reform Programme. There must be no duplication of effort and there is no room for “turf wars”.</p>	

Section	Recommendation	Implementation measures	Timeline
4.3	As a matter of priority, the strengthened construction procurement policy function within the Scottish Government should, in collaboration with other bodies key to the implementation of our recommendations, determine lead responsibility for delivering each recommendation	Officials from the Scottish Government and other key partners should determine the most effective and appropriate allocation of tasks, taking skills, resources and responsibilities into account	As a matter of priority

Section	Recommendation	Implementation measures	Timeline
4.4	A Chief Construction Adviser (CCA) should be directly appointed by the Scottish Government	<p>The Chief Construction Adviser's role would be to:</p> <ul style="list-style-type: none"> • Champion the implementation of this report by challenging both the public sector and industry on pace and progress • Challenge industry to modernise and innovate its processes, practices and relationships • Be a supportive, enabling, but challenging partner of the Scottish Government • Be a conduit for industry to raise concerns with or approach ministers <p>The CCA should become a member of the Public Procurement Reform Board</p> <p>This is likely to be a fixed-term appointment which is capable of being refreshed and reviewed.</p> <p>The appointee should be directly accountable to and have direct access to Ministers.</p> <p>While the individual should have expertise in construction and procurement, leadership strengths are likely to be equally crucial.</p>	The Chief Construction Adviser should be appointed from the start of the 2014-15 financial year.

Section	Recommendation	Implementation measures	Timeline
4.5	A mechanism should be established under the existing Public Procurement Reform Programme to bring together key stakeholders to drive the procurement reform agenda as it relates to construction	<p>To provide a strategic forum for discussion of implementation issues.</p> <p>Led by the Chief Construction Advisor (or by some other independent figure with strong experience in construction or procurement and credibility with industry and the public sector, until such time as the CCA is appointed). Secretariat support should be provided by the Scottish Government.</p> <p>Representation should be drawn from leadership levels across both the construction-procuring parts of the public sector and industry (clearly some commercially sensitive agenda items may need to be discussed with only the public sector representatives present).</p> <p>The focus should very much be on the strategic, rather than the operational.</p> <p>The grouping should report in to the Public Procurement Reform Board (PPRB).</p>	Should meet to agree outline programme of work by the end of March 2014.

5. Prioritisation and co-ordination of spending

Section	Recommendation	Implementation measures	Timeline
5.2	There should be a review of the methods of strategic prioritisation and co-ordination of construction spending across the public sector in Scotland - to identify best practice and to ensure that investment decisions are informed by the use of appropriate techniques.	The IIB should instruct investigation of the different methods of project prioritisation used by public bodies to identify best practice including the use of economic appraisal tools. COSLA and SOLACE should determine the scope for introducing equivalent best practice recommendations to councils.	By June 2014

Section	Recommendation	Implementation measures	Timeline
5.3	Each public body should publish annually a rolling pipeline plan of anticipated spending on construction, setting out detailed known information on timescales for pre and post-contract award including any planned phasing, the anticipated approach to market, the status of required consents, the funding model being used and whether formally approved by their governing body. These pipeline plans should be collated and held centrally, and should initially contain all anticipated work above a value of £4 million over the next two years, with a clear plan put in place to extend this to cover at least work worth £2 million or more, and a timeframe of at least three years.	Initial work will be required to develop guidance on formatting and to develop a system to be able to store this information.	By the summer of 2014
		Provisions within the Procurement Reform Bill could be used to require contracting authorities to submit their pipeline information for anticipated work with a value in excess of £4 million which is to be commenced over the following two years.	By 2015
		A clear plan should be developed to extend this to cover at least work worth £2 million or more, and a timeframe of at least three years.	Plan in place by 31 March 2015

Section	Recommendation	Implementation measures	Timeline
5.4	Public sector bodies involved in construction projects should be able to demonstrate that sufficient linkages are made between them. This should include consideration of appropriate opportunities for collaboration and for synergies with other programmes of work in the planning phase of all infrastructure spend.	Contracting authorities should be required to consult with each other during the planning phase of projects to determine the scope for synergies.	Ongoing

Section	Recommendation	Implementation measures	Timeline
5.5	Regional co-ordination of infrastructure spend should be considered by councils across Scotland.	To the extent that this is not already in hand, councils should consider the potential for the strategic co-ordination of infrastructure spend and should consider the hubCo approach as well as options being explored by the Scottish Cities Alliance.	Ongoing

Section	Recommendation	Implementation measures	Timeline
5.6	Current Scottish Government Affordable Housing Supply programme arrangements provide for an enhanced role for local authorities in programme planning and prioritisation. Alongside Scottish Government, local authorities should therefore play a key role in helping to inform and influence procurement choices and delivery of local authority and RSL affordable housing supply in their areas as well as looking more widely at potential synergies with neighbouring authorities.	<p>New, more effective forms of collaboration in procuring affordable housing should be piloted in a small number of areas, to build on existing good practice and learning from previous partnerships. Pilots should set realistic expectations of outcomes, and engage local authorities and RSLs effectively.</p> <p>Supplementary guidance should be developed by Scottish Government Housing Supply Division covering procurement choices and delivery options which local authorities should consider for the affordable housing programmes in their areas and discuss and agree as part of the SLP process.</p>	Ongoing

6. Approach to Market

Section	Recommendation	Implementation measures	Timeline
6.2	Design and whole life costing should be afforded appropriate priority in any construction procurement process. A comprehensive business case and procurement strategy focusing on desired outcomes and whole-life costs should be developed. This will require the earliest possible engagement between clients, users, designers and contractors	Guidance should be developed on pre-contract comprehensive business planning – particularly Outline Business Case and Final Business Case stages building on existing sources, such as the Scottish Construction Procurement Manual and Scottish Capital Investment Manual.	By summer 2014
		Each body responsible for infrastructure spending should ensure that the process starts with a proper business plan clarifying the outcomes of the project, not solely the outputs.	Authorities to build into own processes by 2015
		There should be early engagement among clients, users, designers and contractors and best practice guidance should be developed setting out how to do this in compliance with public procurement law building on existing sources, such as Architecture and Design Scotland, and examples from across Scotland.	By summer 2014
		Existing guidance on the advantages and disadvantages of using different approaches to market – such as design and build and traditional procurement should be reviewed, and updated as necessary.	
		Further guidance should be developed and implemented on the measurement of whole life cost in construction projects.	By the end of 2014
		Measurement of this should be built into Procurement Capability Assessments.	In time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
6.3	Guidance on best practice in the use of framework agreements should always be followed, in particular in allowing opportunities for SMEs to participate.	<p>Best practice guidance should be developed building on existing guidance on the use of frameworks (such as SPPN5/2010), tailoring it to a construction setting. This should ensure that frameworks do not discriminate against Scottish SMEs.</p> <p>This guidance should specifically consider the issue of aggregating smaller contracts into larger lots which can be appropriate to achieve economies of scale, access to finance and other objectives, but which may reduce opportunities for participation of SMEs.</p>	Initial guidance to be developed by 31 March 2014
		<p>That guidance should reflect that whilst economic impact cannot currently be used as a contract award criterion, it should be a key consideration in developing procurement strategies – particularly in remote and rural communities.</p>	
		<p>Guidance should be adopted by contracting authorities.</p>	By the end of 2014
		<p>Measurement of this should be built into Procurement Capability Assessments.</p>	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
6.3	When used inappropriately, UK-wide frameworks and frameworks negotiated by regional purchasing bodies elsewhere in the UK can have the effect of preventing SMEs from participating in public procurement. Guidance should be developed and implemented on the appropriate use of such frameworks. This guidance should pay particular heed to the value of growing local economies.	Guidance should set out the sorts of issues which organisations should consider before deciding to use a UK-wide framework agreement – including the potential impact on Scottish and local economies.	Initial guidance to be developed by 31 March 2014
			By summer 2014
		As part of the PCA process, organisations should demonstrate that they have undertaken due consideration before entering into any new such arrangements.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
6.4	Further guidelines about certain aspects of the operation of the hubCo model should be developed.	<p>The guidelines should include:</p> <ul style="list-style-type: none"> • Continuation of the work to develop a solution to the issue of the delay in payment of design fees until financial close. • Consideration of expanding existing arrangements for monitoring performance, the achievement of value for money and the continued compliance with the terms of the original contract advertisement. • The appropriate exchange of information between hubCos to reinforce best practice and share ideas. • Consideration of the desirability of setting minimum contract values to be delivered by hubCos. 	By 31 March 2014

Section	Recommendation	Implementation measures	Timeline
6.5	The potential for savings to be delivered from clients enforcing the 'self-delivery' of contracts by main contractors should be investigated, with particular reference to the work being undertaken by Scottish Water.	Savings reported by Scottish Water should be monitored with a view to exploring opportunities to adopt a similar approach where appropriate. Information on existing levels of self-delivery across all sectors to be gathered.	Ongoing

Section	Recommendation	Implementation measures	Timeline
6.6	Developments in the UK Government's trials of its three 'new methods' of procurement should be monitored, and guidance developed for their use in Scotland, if appropriate.	Progress of UK trials to be monitored. Data gathered on the outcomes of any use of these methods in Scotland.	Ongoing

Section	Recommendation	Implementation measures	Timeline
6.7	Thorough consideration of options must be applied to contract selection as part of the pre-commercial stage.	An up-to-date comparison matrix of the various existing contract types should be developed (building on existing guidance) to assist clients to select a contractual approach. This would sit as part of the development of a construction procurement journey tool.	Initial guidance to be developed by summer 2014
		Support should be offered for contractual decisions, making clear that ownership of risk and decision-making will still rest with the individual contracting authority.	
		The feasibility and potential benefits of integrating this approach within PCS Tender to allow the type of contract used to be recorded, and lessons to be shared between organisations should be examined.	By the end of 2014
		Contracting authorities should consider how well their selected contract type has delivered for them both at project completion and post-occupancy evaluation stages. Any learnings should be applied to future contracts.	Ongoing

Section	Recommendation	Implementation measures	Timeline
6.7	There must be an open, mature and reasonable discussion between parties when deciding on the allocation of risk.	Guidance on appropriate risk allocation to be developed.	By the end of 2014

Section	Recommendation	Implementation measures	Timeline
6.7	Any variations to standard forms of contract should be kept to a minimum and used only when absolutely necessary to take account of the particular circumstances of the project. We also recommend that any such amendments should be clearly highlighted within contract documentation so that client and contractor are clear on the variations being imposed to the standard terms.	All public bodies should clearly highlight or attach as an addendum any standard conditions which have been varied or additional clauses added, to ensure clarity and reduce conflicts with standard clauses.	By summer 2014
		Measurement of this should be built into Procurement Capability Assessments.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
6.7	Specific guidance should be developed to help contracting authorities to decide when and how to use painshare / gainshare arrangements.	Guidance on the use of painshare / gainshare to be developed.	By the end of 2014

Section	Recommendation	Implementation measures	Timeline
6.8	All public bodies should adopt a maximum 30 day payment term to their suppliers, as detailed in Scottish Procurement Policy Note 08/2009, and this should form the target against which performance in meeting payment terms is monitored as part of procurement capability assessments (unless shorter targets have already been adopted by the organisation in question).	Performance in meeting these terms should be reported and measured as part of the PCA process.	By summer 2014

Section	Recommendation	Implementation measures	Timeline
6.8	The use of Project Bank Accounts should be trialled in Scotland.	A trial should be co-ordinated by the Scottish Government. The trial should be reviewed and assess the potential for the wider application of PBAs.	Trial(s) to be arranged by the end of 2013-14 financial year
		Accompanying guidance, updated as lessons are learned should be published.	Potential for wider application to be considered by the end of 2014.

Section	Recommendation	Implementation measures	Timeline
6.8	<p>Public sector clients need to ensure that there is a clear understanding between those involved in pre-contract award stage and those involved in delivery on the public sector requirement for fair payment.</p> <p>Contractual terms between client and main contractor should consistently outline fair payment terms for supply chain participants.</p> <p>Clients should ensure that appropriate resources are allocated to contract management and enforcement of terms and conditions of contract.</p>	<p>Guidance should be issued to public sector clients on the need to ensure that there is a clear understanding amongst those involved in the pre-contract stage of the public sector requirement for fair payment and alter procedures as necessary to ensure that contracts require fair payment down the supply chain.</p>	By 30 June 2014.
		<p>That guidance should be adopted by all contracting authorities.</p> <p>Appropriate resources should be allocated to contract management by contracting authorities.</p> <p>Alternative ways of ensuring that contract terms are complied with should be sought – such as asking contractors to file quarterly reports on their supply chain payment performance.</p>	By 2015
		<p>Measurement of this should be built into the PCA process.</p>	In time for the 2015 PCA assessments

Section	Recommendation	Implementation measures	Timeline
6.9	Cash retentions should be used only after careful consideration by contracting authorities, and not as a default measure. Whilst contracting authorities have a duty to safeguard public funds, they should also be mindful of the potentially detrimental effects of cash retentions on their contractors. Greater guidance should be developed to help contracting authorities to determine when and how they should use cash retentions and other project assurance tools in an appropriate and proportionate manner.	Guidance should be developed and built in to the Procurement Capability Assessment process.	By summer 2014

Section	Recommendation	Implementation measures	Timeline
6.9	Lessons should be sought from the trial of project bank accounts in Scotland about how PBAs, or other, similar trust accounts might be used to administer cash retentions.	Project bank account trials to be monitored and their wider applicability, or the use of trust funds for cash retentions explored.	Follows trial of project bank accounts

Section	Recommendation	Implementation measures	Timeline
6.9	A consistent approach to project assurance should be used for all major construction projects. Gateway reviews should be the benchmark against which other models should be tested.	Guidance to be developed covering project assurance tools and building on existing work.	By summer 2014

7. Capability and capacity

Section	Recommendation	Implementation measures	Timeline
7.2	Public sector bodies involved in construction procurement must have access to the right mix of professional procurement and construction expertise to ensure that infrastructure is procured effectively. It may not be appropriate for each organisation to retain this expertise on a permanent basis. It may instead be achieved through collaboration with other bodies – either on a project-by-project, or a longer-term basis.	Guidance on the necessary blend of required skills should be developed.	By summer of 2014
		Procuring authorities should confirm that they have assessed their capability against these guidelines and that they have the capability and capacity to carry out construction procurement or outline the alternative collaborative arrangements through which they plan to achieve this capability.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
7.2	<p>The existing PCA framework should be developed to ensure that it adequately assesses, reports on and helps to improve organisations' ability to procure publicly funded construction. Those carrying out the assessments should be suitably qualified to do so and all organisations procuring construction projects with public funding should undergo procurement capability assessments.</p>	<p>The PCA should be developed to deal appropriately with construction procurement</p> <hr/> <p>Construction-specific elements should be separately recorded as part of the PCA reporting process</p> <hr/> <p>Those carrying out the construction procurement part of the assessments should be suitably qualified to do so.</p> <hr/> <p>All organisations procuring construction projects with public funding should undergo assessment of their procurement capability.</p> <hr/> <p>For those not currently subject to PCAs, systems for implementing the process will have to be agreed with parties involved.</p>	<p>In time for the 2015 round of assessments</p>

Section	Recommendation	Implementation measures	Timeline
7.2	<p>A current and required baseline of skills in construction procurement should be established.</p> <p>A strategy should be developed to ensure those needs are met through both formal learning and mentoring, building as appropriate on the Scottish procurement competency framework.</p> <p>Consideration should be given as to whether a structured approach to delivering appropriate learning – such as a Skills Academy approach (virtual or otherwise), would deliver some or all of the required benefits.</p>	<p>The existing skills base should be determined, as well as future requirements.</p> <p>Consideration should be given to creating a skills academy (“virtual” or “real”).</p> <p>Consideration should be given to creating a cross-sector “mentoring-pool”, or community of best practice.</p> <p>Guidance and expertise should be sought from academia and the relevant professional bodies in implementing these recommendations.</p>	Full strategy to be agreed by the end of 2014

Section	Recommendation	Implementation measures	Timeline
7.3	New standardised guidelines setting out best practice on the end-to-end construction procurement process should be developed and maintained. As far as possible, the guidelines should be written in plain English and should be in an accessible digitised form based on the example of the procurement “Journey” for goods and services. The guidelines should be capable of being used in a proportionate way for projects of different sizes and risk profiles as well as being adaptable for different sectors.	The Scottish Construction Procurement Manual should be reviewed, updated and published in a more user-friendly form, akin to the Procurement Journey.	By summer 2014.
		The guidelines should be in a digital format which can be accessed in a way which is proportionate to the size of the contract.	
		As far as possible, the guidelines should be written in plain English.	
		The guidance should be maintained on an ongoing basis.	Ongoing

Section	Recommendation	Implementation measures	Timeline
7.3	Good practice guidance on those elements of bids which should and shouldn't be scored and on the focus to be given on quality and whole life costing in the scoring should be developed.		By the summer of 2014

Section	Recommendation	Implementation measures	Timeline
7.3	Public bodies should rightly seek to re-assure themselves of the competence and skills of bidders. This, however, should be done through asking for appropriate experience – as indeed is Scottish Government policy - rather than necessarily asking for exact experience of similar project delivery within a short number of years (for example “supply three examples of community halls which you have built in the last five years”).	Guidance should be developed covering the issues which public sector clients should consider when determining how to measure skills and experience. This should balance the need to ensure the competence of bidders with the risk of disadvantaging local firms, reducing competition, and damaging the industry.	By the summer of 2014
		This guidance should be adopted by all contracting authorities.	By 2015
		As part of the PCA process, organisations should demonstrate their due consideration of these concerns.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
7.3	The ability of a company to deliver a contract should not solely be measured by the use of turnover thresholds. Where annual turnover is part of financial criteria it should be limited to no more than two times the annual contract value as outlined in the EU commission's proposal. Further guidance should be developed on other valid and proportionate methods for assessing financial strength and risk.	Further guidance should be developed on other valid and proportionate methods for assessing financial strength and risk.	By summer of 2014
		This guidance should be adopted by contracting authorities.	By 2015
		As part of the PCA process, organisations should demonstrate that they have undertaken due consideration of this guidance.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
7.3	To the extent possible within the full scope of the law, including as may be amended by the new EU Procurement Directive and Procurement Reform Bill, contracting authorities should take the prior performance and behaviour of bidders into account when awarding contracts. Guidance which ensures compliance with legislation should be developed.	Guidance should be developed on this which ensures compliance with developing EU and other legislation.	By the end of 2014
		This guidance should be adopted by contracting authorities.	By 2015

Section	Recommendation	Implementation measures	Timeline
7.3	The Scottish Government should reissue its existing guidance to the public sector on how to deal with abnormally low tenders.	Guidance should be reviewed, revised (if required) and reissued.	By the summer of 2014

Section	Recommendation	Implementation measures	Timeline
7.3	Guidance should be developed which assists contracting authorities to carry out successful pre-market engagement as part of a construction project.	Guidance should be reviewed, revised (if required) and reissued.	By the summer of 2014

Section	Recommendation	Implementation measures	Timeline
7.3	Contracting authorities should always make feedback available to both successful and unsuccessful bidders at PQQ and ITT stage. Feedback should be timely, and a model of good practice building on existing sources, such as `the Scottish Suppliers' Charter, and legislative requirements, should be developed.	A model of good practice should be developed, which builds on existing best practice.	By summer of 2014
		This guidance should be adopted by contracting authorities.	By the end of 2014
		This should be measured as part of the PCA process.	Built into PCAs in time for the 2015 assessments

Section	Recommendation	Implementation measures	Timeline
7.3	If not already established, public sector procuring authorities should work together to develop forums with locally-operating construction firms which would meet on a regular basis and include economic development teams and construction procurement staff to discuss the pipeline of work, issues and opportunities, with a view to building greater understanding, transparency and improved processes and practice.	More suited to those authorities which are either based in, or have a substantial programme of work in a given area.	By autumn 2014
May exist already in some areas.			
Should bring locally-operating industry together with economic development teams and construction procurement staff.			
Will allow industry to feedback on current capacity, skills and opportunities.			
Measurement of this should be built into Procurement Capability Assessments.		Built into PCAs in time for the 2015 round of assessments	

Section	Recommendation	Implementation measures	Timeline
7.3	A formal support mechanism should be developed to help SMEs understand how to compete for public contracts.	The identification of gaps in SME knowledge should be established and linkages made to existing training programmes as well as development of new training and support mechanisms.	By the end of 2014

Section	Recommendation	Implementation measures	Timeline
7.3.	Practice should be standardised by making the use of Public Contracts Scotland mandatory when advertising publicly-funded construction contracts.	Measurement of this should be built into Procurement Capability Assessments.	In time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
7.3.	Contractors on major projects should be encouraged to advertise sub-contracts on PCS where they have not already fully identified their supply chain	Existing guidance should be reviewed and, if necessary, enhanced.	Guidance to be reviewed by 31 March 2014

Section	Recommendation	Implementation measures	Timeline
7.3.	Product categorisations used on PCS should be reviewed to ensure that they are as accurate as possible for construction projects.	Work to be done to ensure a sufficiently granular identification of the actual business activity of potential suppliers and sub-contractors.	By the end of 2014.

Section	Recommendation	Implementation measures	Timeline
7.3	SPCD should assess the current performance of the PCS systems through user feedback to ensure high standards are being achieved and are capable of being maintained following adoption of wider usage.	User feedback should be sought in a structured way.	Ongoing

Section	Recommendation	Implementation measures	Timeline
7.3	<p>Additional guidance for the public sector should be developed to ensure that the standard PQQ is used in a way which is proportionate and relevant to the needs of construction procurement and monitor practices to ensure that this principle is achieved. The standard PQQ should continue to be refined and, where a pre-qualification stage is being used, its use should be mandated.</p>	<p>The standard PQQ should continue to be refined and its use monitored with a view to maximising uptake.</p> <p>The use of the standard PQQ should be monitored to ensure it is proportionate.</p>	Ongoing
	<p>SPCD along with bodies such as RIAS and RICS should work collaboratively to develop consultancy / specialist services suites of standard questions for the standard PQQ.</p> <p>Other requests for specialist suites of questions should also be considered and assessed by SPCD as they arise.</p>	Collaboration on standard question sets should be instigated.	By the end of 2014

Section	Recommendation	Implementation measures	Timeline
7.3	The use of Quick Quote should become the norm for works contracts worth less than £500,000, and public bodies should consider using Quick Quote for awarding construction-related contracts worth less than the proposed thresholds in the Procurement Reform Bill (£2 million for works and £50,000 for supplies and services).	Guidance should be developed on what factors authorities need to take into account when deciding whether to use Quick Quote at a higher level.	Guidance to be reviewed by the summer of 2014.
	When using Quick Quote, public bodies should be able to demonstrate a clear audit trail to contract award, to ensure transparency and accountability.	Contracting authorities to consider their internal procedures and amend as necessary.	By the end of 2014.

Section	Recommendation	Implementation measures	Timeline
7.3	The use of PCS Tender should be mandatory for creating ITTs, using standard question sets as the basis, and submitting tender returns – whether individual contracts or frameworks.	Work should be done to ensure appropriate training is provided to allow each authority to be confident at using PCS Tender.	By summer 2014

8. Sustainable procurement, innovation and emerging technologies

Section	Recommendation	Implementation measures	Timeline
8.2	Good, detailed, community benefits guidance exists currently on the Scottish Government website, but it is lengthy and should be reviewed and integrated within a wider Construction Procurement Journey. This guidance should include:		
8.2	The requirement that contracting authorities should have a clear strategic understanding of what they want community benefits to deliver through their public procurement for the sustainability of the Scottish and local economy and the community within which the project is being delivered. The public body should set out its strategic objective and ask the contractor to set out in its tender how it will meet that objective.	Existing guidance should be reviewed and, if necessary, enhanced to fully cover construction.	By the summer of 2014
		This guidance should be adopted by contracting authorities.	By the end of 2014
		As part of the PCA process, organisations should demonstrate that they have undertaken due consideration of this guidance.	Built into PCAs in time for the 2015 round of assessments

Section	Recommendation	Implementation measures	Timeline
8.2	Guidance to contractors to help them to design and deliver appropriate community benefits.	Tools should be developed for designing and assessing community benefit clauses which are appropriate and proportionate.	By the summer of 2014

Section	Recommendation	Implementation measures	Timeline
8.2	Guidance to contracting authorities to assist an open consideration of community benefit proposals at ITT stage.	Tools should be developed for designing and assessing community benefit clauses which are appropriate and proportionate.	By the summer of 2014

Section	Recommendation	Implementation measures	Timeline
8.2	The promotion of continuity and completion of apprenticeships. One means of doing this may be through encouraging the public sector and industry to work together to develop a shared apprenticeship model that refocuses the emphasis on the completion of apprenticeships and the practicability of such models should be investigated.	Guidance should be developed on the best means of using community benefit clauses to promote the continuity of employment of apprentices.	By the summer of 2014
		The practicability of shared apprenticeship models should be explored and guidance developed. This should be done in conjunction with Skills Development Scotland who are being charged by the Scottish Government with responsibility for developing pilot models. Reference should be made to the principles set out in the Homes for Scotland scoping report prepared by Glasgow University and published in March 2013.	

Section	Recommendation	Implementation measures	Timeline
8.2	Monitoring by public sector clients of performance in relation to community benefits delivery, and use of that performance monitoring information as part of overall performance assessment for future contracts whether through frameworks or open processes. This could be done as part of a suite of KPIs.	Guidance to be developed on best practice in monitoring performance on community benefit clauses.	By the summer of 2014
		Guidance to be developed on how performance on community benefits can be taken into account in future contracts within the bounds of EU law.	

Section	Recommendation	Implementation measures	Timeline
8.5	The Scottish Government should build on some good work by RSLs and others by better incentivising greener construction and promoting modern methods of construction and providing better advice and guidance on renewables technologies.	Guidance should be developed and good practice examples identified	By 31 March 2015
		The scope for further incentives through the Scottish Government's funding for the affordable housing supply programme should be examined	

Section	Recommendation	Implementation measures	Timeline
8.5	Construction guidance should be aligned to the wider sustainable procurement agenda in recognition of the potential for construction to demonstrate the benefits of good procurement and should take account of the findings of the Sullivan panel when they are published.	Cross-sectoral progress should be reflected in the guidance.	Ongoing

Section	Recommendation	Implementation measures	Timeline
8.5	The Scottish Government should promote a more coherent joined up approach to sustainability for public sector construction.	Better linkages should be made across Scottish Government to ensure better connections and knowledge sharing.	Ongoing

Section	Recommendation	Implementation measures	Timeline
8.6	The use of Building Information Modelling (BIM) should be introduced in central government with a view to encouraging its adoption across the entire public sector. The objective should be that, where appropriate, construction projects across the public sector in Scotland adopts a BIM level 2 approach by April 2017.	Resources should be identified and a programme plan for Scottish BIM implementation by 2017 established.	By 31 March 2014
		When deciding if BIM will add value to a project public sector clients should undertake an assessment of the likely return on investment from its use.	Ongoing
		Guidelines and advice on the use of BIM should be developed.	By the summer of 2014
		Suitable trial projects should be identified ahead of the 2017 target date and their management co-ordinated centrally.	By the end of 2014
		Baseline information should be established to allow proper evaluation of the impact of BIM implementation.	

9. Data as an enabler of reform

Section	Recommendation	Implementation measures	Timeline
9.5	Action should be taken to ensure robust systems are in place to track all spending on construction by public authorities such that a complete analysis of annual public sector construction spend in Scotland can be easily available.	If necessary, the capability of systems to capture and report this information should be developed, and guidance issued to those contracting authorities who do not currently share data	Before 31 March 2014 to allow the spend for 2014-15 to be captured
		Authorities procuring construction spend should submit the detail of their spend to a central system.	To be gathered initially for the year ending 31 March 2015

Section	Recommendation	Implementation measures	Timeline
9.5	Sectoral records of project outturn costs, including what they were estimated to cost at business plan and contract award stages and actual cost on completion, should be developed and maintained so as to provide meaningful benchmark figures for the public sector in Scotland. These records should also record timescales and quality measures to enable a true assessment of performance delivery to be made.	It will initially be necessary to specify precisely what costs are to be recorded and how they are to be recorded in order that the benchmark information can allow valid comparisons to be made on the same basis and to develop guidelines for the submission of costs.	By 30 September 2014
		All authorities should submit benchmark information in the standard agreed format.	Commencing 31 March 2015

Section	Recommendation	Implementation measures	Timeline
9.5	Guidance should be developed on robust management information requirements and should cover baseline data, benchmarks, metrics and KPIs.	Guidance to be developed to assist the collation of a comprehensive data set.	By summer 2014

Section	Recommendation	Implementation measures	Timeline
9.5	Project evaluation should be promoted and should build on the Learning Lessons Approach.	Links to be made with the Learning Lessons programme of work.	By summer 2014

10. What the industry needs to do

Section	Recommendation	Implementation measures	Timeline
10.2	The Chief Construction Adviser should hold talks with the Industry Leadership Group and with other trade and professional bodies and representative institutions to agree on how the industry should co-ordinate its efforts	Meaningful dialogue with industry to take place to ensure strong representation and participation.	By 30 June 2014

Section	Recommendation	Implementation measures	Timeline
10.3	<p>The Fair Payment Charter should be promoted more widely as the “norm” within the construction industry. The industry should consider how it can collectively make late payment of suppliers an unacceptable practice</p> <p>When the public sector adopts good practice – such as might relate for example to the appropriate use of retentions, requirements for insurance or the use without alteration of appropriate standard forms of contract – industry should replicate this throughout the supply chain.</p>	The Industry Leadership Group should work with the Public Procurement Reform Board to co-ordinate the drive to change the culture of late payment within the industry.	<p>Industry Leadership Group guidance and plan issued by 30 June 2014</p> <p>Ongoing</p>

Section	Recommendation	Implementation measures	Timeline
10.4	The industry should consider what is prompting ‘suicide bids’, and how to arrest them, so that both the customer and the contractor get a fair deal.	We have suggested that the Scottish Government should re-issue guidance by the summer of 2014 on how to deal with abnormally low bids. The Industry Leadership Group should consider these guidelines and seek to agree its own guidelines for the industry within the limits of the laws relating to anti-competitive behaviour.	By the end of 2014

Section	Recommendation	Implementation measures	Timeline
10.5	Industry should use existing sources of guidance and work with the public sector to develop best practice models for the delivery of community benefits, and a shared apprenticeship model.	Industry to develop.	By 30 September 2014

Section	Recommendation	Implementation measures	Timeline
10.5	The industry needs to be ready to embrace modern methods of construction, and new and emerging technologies such as Building Information Modelling.	Industry to consider.	By 30 September 2014

Section	Recommendation	Implementation measures	Timeline
10.5	The industry should consider what industry-led training programmes currently exist for those bidding for public sector work, and whether there is scope for these to be co-ordinated and developed further.	Industry to consider.	By 30 September 2014

Appendix 5 – Consultative group members

As part of our review, we convened two consultative groups (one with a client focus, and one with a primarily industry focus) to help us consider our findings at key stages in the process, in addition to our stakeholder interviews.

The following organisations were represented on these groups, and we are grateful to them for their input:

Advanced Procurement for Universities and Colleges
Association of Local Authority Chief Housing Officers
BAM Construction
Business Fix
City of Edinburgh Council
Civil Engineering Contractors Association Scotland
Clark Contracts
Convention of Scottish Local Authorities
Federation of Master Builders
Glasgow City Council
Historic Scotland
Homes for Scotland
Muirfield Contracts
Network Rail
NHS National Services Scotland
North Lanarkshire Council
Police Scotland
Royal Incorporation of Architects in Scotland
Royal Institute of Chartered Surveyors
Scotland Excel
Scottish Building Federation
Scottish Court Service
Scottish Enterprise
Scottish Federation of Housing Associations
Scottish Fire and Rescue Service
Scottish Futures Trust
Scottish Government
Specialist Engineering Contractors' Group Scotland
Strategic Investment Board Ltd (Northern Ireland)
Transport Scotland
University of the West of Scotland
West Lothian Council



**The Scottish
Government**
Riaghaltas na h-Alba

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APS Group Scotland
DPPAS14987 (10/13)

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**Υπόδειγμα ανάπτυξης και διαχείρισης
Εθνικής Στρατηγικής και Μεταρρυθμιστικού Προγράμματος Δράσης
στον Τομέα των Δημοσίων Συμβάσεων
καθώς και
Τομεακής Στρατηγικής και Τομεακού Προγράμματος Δράσης
για τις Δημόσιες Συμβάσεις στον κλάδο των κατασκευών**

Σκωτία, περίοδος 2014 - 2017



<http://www.gov.scot/Topics/Government/Procurement>

<http://www.gov.scot/Topics/Government/Procurement/about/Review>

Quick links

- [About us](#)
- [Procurement legislation](#)
- [Procurement Capability Assessment](#)
- [Procurement Journey](#)
- [Review of Procurement in Construction](#)
- [Scottish Model of Procurement](#)
- [Single Point of Enquiry](#)
- [Supplier Journey](#)
- [Supported Businesses](#)

Also worth seeing

- [Advanced Procurement for Universities and Colleges \(APUC\)](#)
- [NHS National Procurement](#)
- [Public Contracts Scotland](#)
- [Public Contracts Scotland - Tender](#)
- [Scotland Excel](#)

Public Procurement Reform

Public Sector

Procurement

Procurement landscape

Procurement Reform

Background

Ministerial Strategic Group

Procurement Reform Delivery Group

Contacts

The Public Procurement Reform Programme (PPRP) aims to drive up procurement standards ensuring value for money for the taxpayer.

The Review of Public Procurement in Scotland - Report and Recommendations by John F McClelland CBE was published on 15 March 2006. The public procurement reform programme in Scotland began following the publication. The programme was established to improve procurement across the whole of the Scottish public sector - a far-reaching and ambitious undertaking.

The vision involved the roll out of structures, capability and processes to improve procurement across the Scottish public sector, delivering value for money and efficiency improvements.

In January 2010, the PPRB endorsed the second phase of the public procurement reform programme - 'Transforming Procurement: Accelerating Delivery'. This phase placed emphasis on quickening the pace of change and delivering benefits, and embedding initiatives into 'business as usual'. At its heart was the concept of value for money in procurement and an informed balance between cost, quality and sustainability.

In April 2015, the Public Procurement Reform Board (PPRB) published "Transforming Procurement, Accelerating Delivery", a review of the second phase of public procurement reform 2010-2014.

The report recognised that the recommendations from John McClelland's 2006 Review of Procurement in Scotland - Report and Recommendations were now effectively business as usual, with future emphasis shifting to a new set of strategic objectives that underpin a more succinct vision for procurement in its third phase: **"Delivering procurement that improves public services for a prosperous, fairer and more sustainable Scotland."**

Procurement in 2015 is a key partner and enabler in delivering public service reform. There has been a subtle shift from the 'government-led, public sector owned' approach of its second phase, to a **'truly collaborative approach'**, that recognises the transition from a programme approach to one of continuous improvement, in a period framed by legislative and regulatory changes.



Public Procurement Reform

Ministerial Strategic Group - Procurement (MSG-P)

Purpose

To provide strategic direction, support and monitor progress on the procurement reform agenda. The Ministerial Strategic Group - Procurement (MSG-P) is also responsible for resolving risks and issues escalated by the Procurement Reform Delivery Group and will arbitrate any disputes that arise.

Remit

The MSG-P's remit is:

1. A forum for leaders to discuss matters of joint interest relating to public procurement
2. Provide leadership on national policies requiring an effective joint approach
3. Provide leadership and input to:
 - the roll-out and deployment of legislation and regulations
 - the use of public procurement as a lever for change (across areas of public and social interest)
 - consideration of procurement implications relating to and from key strategic themes (eg Health & Social Care, Scotland's Economic strategy, Digital Economy)

Procurement Reform Delivery Group (PRDG)

Purpose

The PRDG is responsible for ensuring that Scottish Public Procurement remains on course to deliver benefits, and that obstacles to this are removed or reduced. The Group **collectively owns the procurement delivery plan, and it leads, drives and facilitates the work to develop collaborative national and sectoral approaches to procurement across the public sector in Scotland.**

Remit

The remit of the Group is to:

- facilitate the delivery of the programme's objectives on time, while maximising efficiency of resources and staying within budget
- make decisions on recommendations made to it in relation to developments within Scottish Public Procurement
- ensure the required level of cross-cutting co-operation and working is achieved
- manage dependencies between initiatives, particularly where one initiative's progress depends on work done by another
- monitor and manage risks and issues. Co-ordinate the resolution of issues and the measures to reduce risks if appropriate
- help manage the agenda and its key stakeholders through reporting as a communications channel



Public Procurement Reform

Procurement Capability Assessment (PCA)

<http://www.gov.scot/Topics/Government/Procurement/buyer-information/pca>

It is more important than ever, in the economic challenges we face, that public procurement is conducted as effectively as possible.

The PCA will assist organisations improve their structure, capability, processes and ultimately performance, by attaining the best standards that are appropriate to the scale and complexity of their business.

The PCA will assess capability in key areas against common criteria and standards which will allow public bodies, locally, at sector level and nationally, to identify where best practice already exists, where there are gaps and where continuous improvements and efficiencies can be implemented.

Organisations will have the opportunity, where appropriate, to develop and implement improvement plans as a result of the PCA with assistance from their relevant Centre of Expertise.

Guidance

- Procurement Capability Assessment (PCA) Guidance - 2013
- Procurement Capability Assessment (PCA) Guidance - 2012

The procurement competency framework

<http://www.gov.scot/Topics/Government/Procurement/Capability/proccompfw>

A **'Procurement Competency Framework'** was developed by the Cross-Sectoral People and Skills Working Group in response to recommendations from the **Review of Public Procurement in Scotland (2006)**.

The framework **identifies the skills and competency levels required by all staff involved in the procurement process**. It helps people take ownership of their personal development through a skills assessment, identifies training and development needs, and career planning. The framework is intended to complement, not replace, existing personal development tools in organisations.

There are **two formats of the framework available that can be downloaded**. The content is the same, but viewed differently.

- **Procurement Competency Framework Assessment**

An Excel spreadsheet that enables you to carry out your own competency self-assessment by simply selecting a 'true' or 'false' statement from a drop-down box. The spreadsheet contains full guidance on how to complete the assessment.

- **Procurement Competency Framework**

For reading through the framework, or to print and review in hard copy.

The Chartered Institute of Purchasing and Supply (CIPS) has reviewed the Procurement Competency Framework and mapped the CIPS qualification ladder to the framework.

Please note that there are plans to refresh the **competency framework through 2015 to reflect the new CIPS Global Standards**.



<http://www.gov.scot/Topics/Government/Procurement/policy/ReviewProcConst>

Review of Procurement in Construction - introduction

The report of **the Review of Scottish Public Sector Procurement in Construction** was published in October 2013.

The report is complementary to John McClelland's report on Public Procurement in Scotland which focused on the procurement of goods and services.

The independent construction review looked at how public bodies involved in construction-related procurement adopt practices that are streamlined and deliver value for taxpayers' money.

Chair of the review, Robin Crawford, spoke of his vision of *"an approach to public sector construction procurement which achieves better collaboration in design led procurement, which achieves value for money for the public sector but which also recognises that the construction sector is a vitally important part of the Scottish economy"*.

- ▶ Review of Procurement in Construction
- ▶ Governance
- ▶ Implementation timetable
- ▶ Consultation
- ▶ Project Bank Accounts
- ▶ Stakeholder Engagement
- ▶ Workstream Outputs



Implementing the recommendations

The then Deputy First Minister, Nicola Sturgeon, **announced in May 2014** that the Scottish Government welcomed the report and would implement 66 of the 67 recommendations. The one recommendation which was, for the time being, not to be implemented, was the appointment of a Chief Construction Advisor. Instead it was recognised that this programme of work should sit within the governance structure of the Public Procurement Reform Board, chaired by Cabinet Secretary for Infrastructure, Investment and Cities, Keith Brown.

The Scottish Government (SG) has joined up with the Scottish Futures Trust (SFT) to deliver the recommendations. Scottish Government will take forward the implementation of 34 recommendations. SFT will lead on 26 and 6 will be led by a combination of SFT, SG and Construction Scotland Industry Leadership Group (CSILG)

Implementation of the recommendations will be considered alongside and **consistent with the Procurement Reform (Scotland) Act 2014**. This Act builds on the work already carried out in Scotland around procurement and establishes a national legislative framework for sustainable public procurement – it seeks to maximise the economic benefits brought to Scotland from effective and efficient public procurement spend.

The revised EU Procurement Directives will also help shape how the recommendations are implemented.



Review of Procurement in Construction

Governance - Review of Construction in Procurement

Implementation work is being carried out within a governance structure headed up by the **Ministerial Strategic Group - Procurement (MSG-P)**.

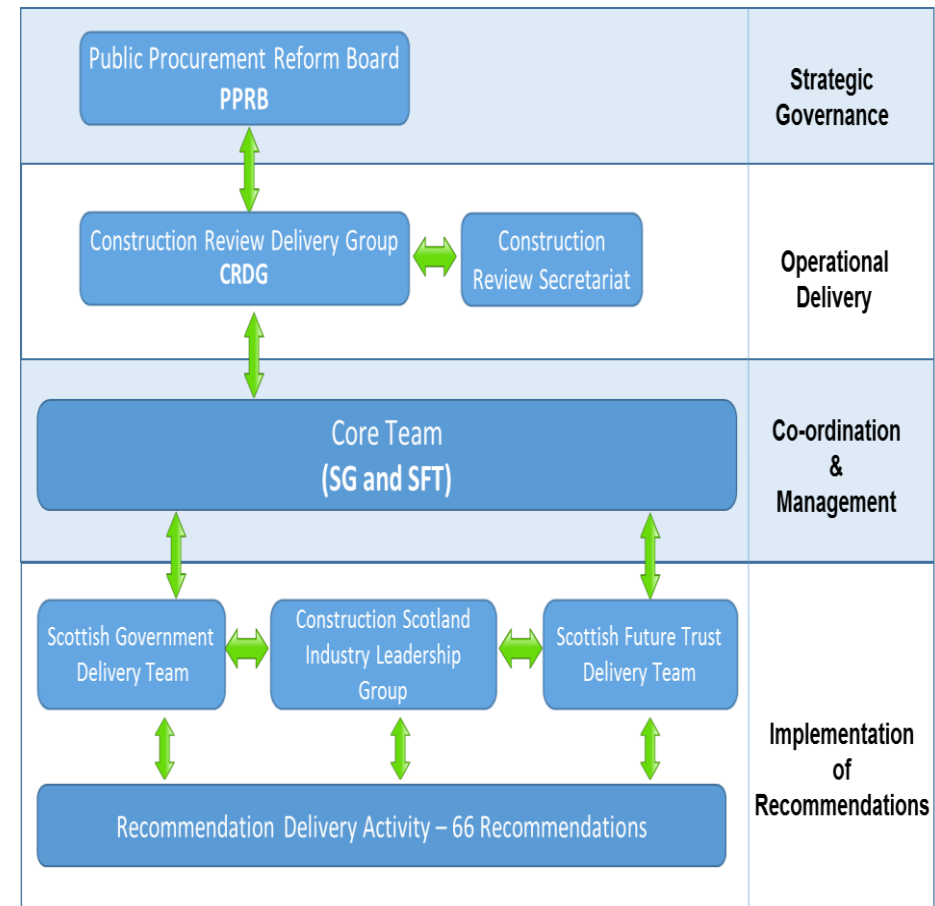
This body has representation from a wide range of procurement interests, including both buyer and supplier construction representatives.

Reporting to MSG-P is the Construction **Review Delivery Group (CRDG)** which has oversight of delivery activity. CRDG works closely with the **Procurement Reform Delivery Group (PRDG)**. This ensures that there is a joint approach in the work of both groups.

CRDG's role is to co-ordinate, monitor and report on the work of the delivery workstreams with day to day co-ordination being carried out by a core team consisting of both Scottish Government and Scottish Futures Trust (SFT) officials.

The views of industry are represented by the Construction Scotland Procurement Implementation group which was created by the Construction Scotland Industry Leaders Group.

Governance Structure



Υπόμνημα : **SG = The Scottish Government, SFT = The Scottish Futures Trust** (βλ σχετικά <http://www.scottishfuturestrust.org.uk/> και σελ 7)



Construction Review Delivery Group (CRDG)

The role of the **Construction Review Delivery Group (CRDG)** is to oversee operational delivery and direct the activity of the **Core Implementation Team** which is made up of officials from the Scottish Government and Scottish Futures Trust.

Membership of CRDG, which is chaired by Barry White, Chief Executive of Scottish Futures Trust, is drawn from across public sector organisations which procure construction services. **This group first met 17 February 2015 and will meet every six to eight weeks.**

List of Members: (20 – μελές !!!)

Core Implementation Team

The core implementation team is responsible for **the day to day co-ordination of the implementation process.**

The team consists of officials from both Scottish Government (SG) and Scottish Futures Trust (SFT).

The Scottish Government recognises that the implementation process will not be successful unless it reflects all aspects of both the buyer and supplier community.

Review of Procurement in Construction

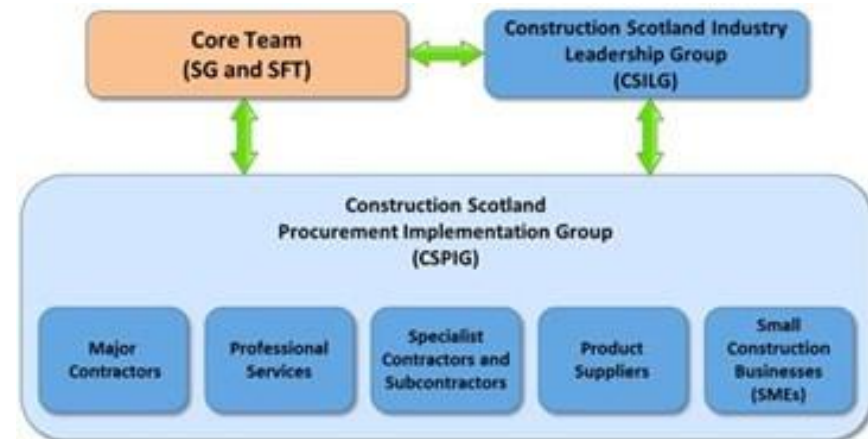
Construction Scotland

Industry Consultation

The Review of Scottish Public Sector Procurement in Construction recognised that some of the problems and issues raised during the consultation process were, at least in part, of the industry's own making.

The Review suggested that the newly formed **Construction Scotland Industry Leadership Group (CSILG)** - which brings together key individuals from the public and private sectors to drive growth and coordination within the industry - has a role to play in addressing the challenges that industry may face.

Following on from discussions with CSILG a focus group (**Construction Scotland Procurement Implementation Group (CSPIG)**) has been formed to represent the interests of all areas of the supply side and Scottish Government encourages input from across the entire supply chain into this consultation process.





<http://www.scottishfuturestrust.org.uk/>

ABOUT:

The Scottish Futures Trust (SFT) is an independent company, established by the Scottish Government with a responsibility for delivering value for money across public sector infrastructure investment. SFT operates at arm's length from the Government but works closely with the public sector to seek and deliver improved value for taxpayers.

SFT's work during 2014/15 delivered £135m of net benefits and savings to infrastructure investment in Scotland which was independently validated by Grant Thornton LLP, (a leading financial and business adviser in infrastructure investment), as well as academics from the London School of Economics and Political Science.

SFT has a team of over 70 professionals working to increase the efficiency and effectiveness of infrastructure investment in Scotland. The team, drawn from public and private sector backgrounds, have a range of technical, legal and financial skills, and bring extensive commercial expertise in infrastructure financing, procurement and delivery into the public sector.



The hub, Schools and Programme Support and Assurance programmes sit within SFT build

SFT build

hub

Scotland's Schools for the Future

Construction Procurement Review

Programme Support and Assurance

OUR WORK:

In the relatively short space of time SFT has been operational, it has established a **highly professional and commercial team that works with the public and private sectors to deliver value-for-money on public sector infrastructure, as well as delivering high-quality, sustainable infrastructure** which in turn helps protect jobs in the construction industry in Scotland.

SFT is working across a broad variety of work streams which are grouped together under the **following six areas:**



The Scotland-wide **hub initiative** which is led by SFT, reflects a national approach to the delivery of new community infrastructure which is valued at more than £2bn over its first 10 years.

It brings together community planning partners, including health boards, local authorities, police, and fire and rescue services and several other public bodies together with a private sector development partner to form a hubCo to increase joint working and deliver best value in delivering new community facilities

SFT works with every local authority across Scotland to drive forward the Scottish Government's £1.8bn Scotland's Schools for the Future programme. **SFT's role is to efficiently and effectively manage the programme to help local authorities achieve the very best value-for-money for their investment in new schools.**



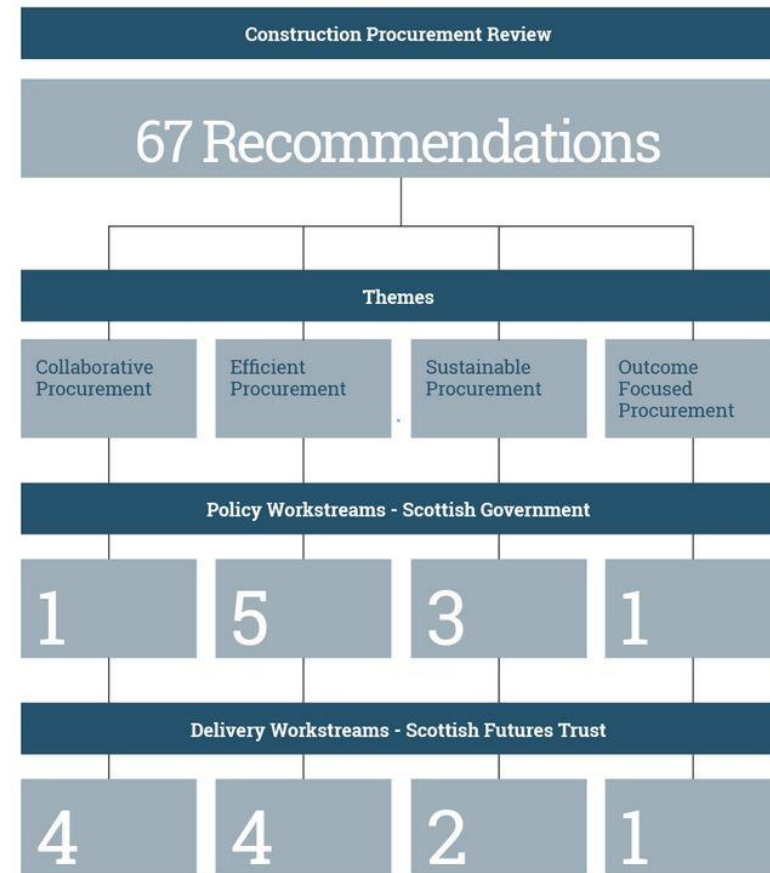
Construction Procurement Review

The value of construction taking place each year across Scotland's public sector totals approximately £4bn. Such a level of investment plays a significant role in Scotland's overall economy as well as being a key component in supporting the construction industry and the thousands of people that work within that sector.

A Review of Scottish Public Sector Procurement in Construction was published in October 2013. In May 2014, 66 of the 67 recommendations were accepted by the then Deputy First Minister, Nicola Sturgeon, the exception being that there would be no immediate appointment of a Chief Construction Adviser.

The Report's core recurring **themes were that construction procurement should become more collaborative, more efficient, more sustainable and more outcome focused.** As a result of SFT's procurement expertise and the large programmes of infrastructure investment it is delivering, SFT was **invited to work in partnership with Scottish Government to implement the recommendations.**

Consequently, a core team was formed in September 2014 and its remit and governance arrangements approved by the Public Procurement Reform Board in November 2014. The recommendations in the Review have been split into **21 themed work streams**; SFT leads on the implementation of 11 delivery facing work streams, covering 29 of the 66 recommendations, with Scottish Government leading on the remaining 10 workstreams, covering the other 37 recommendations.





Building Information Modelling (BIM)

A key recommendation within Scottish Government's Construction Procurement review **was the implementation of Building Information Modelling (BIM) to Level 2 by April 2017**. The review set out the following recommendation which was endorsed by Scottish Ministers:

'The use of Building Information Modelling (BIM) should be introduced in central government with a view to encouraging its adoption across the entire public sector. The objective should be that, where appropriate, construction projects across the public sector in Scotland adopt a BIM level 2 approach by April 2017.'

As Scotland moves towards a **digital built environment, BIM is seen as a key part for the future of the Scottish construction industry**. BIM uses digital technology to improve the sharing and analysis of data within a construction project. Through improving data management and collaboration within projects, this will support the industry to deliver greater efficiencies through the design, construction and operational stages of a project.



Asset Management

During 2011, SFT was asked to take forward a pilot project through the South East hub territory to assess ways to improve asset management and estate planning across public bodies at a community level and develop proposals by the end of the year for the Scottish Government to deliver enhanced value from centrally-held land and property assets.



Public sector organisations have already begun this journey to ready themselves for the adoption of BIM level 2.

An initial step SFT has taken is to secure the **appointment of David Philp to Chair the Scottish BIM Delivery Group**. David brings a wealth of experience from his role as Head of BIM Implementation at the UK Cabinet Office and existing roles as Head of BIM at the UK BIM Task Group.

Operational PPP Contract Management

Some of Scotland's essential infrastructure such as hospitals, schools and roads are delivered through Public Private Partnerships (PPP). These assets, valued at over £6bn incur contract payments from public sector budgets that run close to £1bn per annum. These historic contracts are often complex and need active management by the public sector.

**Το Πρόγραμμα Δράσης
για τις Δημόσιες Συμβάσεις στον κλάδο των κατασκευών
Σκωτία περίοδο 2014 – 2017**

**Review of Scottish Public Sector Procurement in Construction
Implementation Themes, Workstreams and Recommendations**

REVIEW OF SCOTTISH PUBLIC SECTOR PROCUREMENT IN CONSTRUCTION IMPLEMENTATION THEMES, WORKSTREAMS AND RECOMMENDATIONS

The following table sets out the four central themes to delivery and the 21 workstreams within them. It also shows where recommendations sit within the implementation structure. This structure draws on the vision highlighted by Robin Crawford and Ken Lewandowski in their foreword to the report which is:

“An approach which achieves better collaboration in design- led, efficient and effective public sector construction procurement and which has regard to sustainability in all senses of the word.”

Themes	Collaborative Procurement			Efficient Procurement			Sustainable Procurement			Outcome Focussed Procurement		
	Workstreams	Recommendations	Timing Schedule	Workstreams	Recommendations	Timing Schedule	Workstreams	Recommendations	Timing Schedule	Workstreams	Recommendations	Timing Schedule
Policy (SG)	1			3			5			8		
	Structures	1,2,3,4,62	1	Procurement Journey	29	3	Fair Payment	20,21,22,24,63	1/2	Best Practice	5,61, 67	2
				Assurance	25,27	2	SME's	12,38	2			
				Spending Forecasts	6,58	2/3	Housing	9	3			
				Tender Process	30-36 &43-46,64	2/3						
Delivery (SFT)	2			4			6			7		
	Skills & Capability	26,28	2	Frameworks	11	2	Community Benefits	48,49,50,51,52,53,65	1	Whole Life Costing/Design	10	2
	Linkages & Collaboration	7,8,37	3	Contracts & Risk	16,17,18,19,23	2	Environmental Sustainability	54, 55,56	3			
	Benchmark Database	59,60	2	New Methods of Procurement	14,15	2						
	BIM	57,66	3	Hub Programme	13	1						

The table on the following pages sets out each recommendation by workstream and theme. Boxes are provided within each workstream section for your comments. Once you have completed your comments please send the form to the [Construction Review Mailbox](#)

COLLABORATIVE PROCUREMENT

Workstreams	Index	Report Paragraph	Recommendation	Delivery Schedule ¹	Comment
Structures	1	4.2.3	The construction procurement policy function within the Scottish Government should be strengthened	2	
	2	4.3.5	As a matter of priority, the strengthened construction procurement policy function within the Scottish Government should, in collaboration with other bodies key to the implementation of our recommendations, determine lead responsibility for delivering each recommendation	1	
	3	4.4.3	A Chief Construction Adviser (CCA) should be directly appointed by the Scottish Government. <i>(Note: this recommendation has not been adopted and consequently will not be implemented)</i>	N/A	
	4	4.5.5	A mechanism should be established under the existing Public Procurement Reform Programme to bring together key stakeholders to drive the procurement reform agenda as it relates to construction	1	
	62	10.2.5	The Chief Construction Adviser should hold talks with the Industry Leadership Group and with other trade and professional bodies and representative institutions to agree on how the industry should coordinate its efforts.	1	
Skills and capability	26	7.2.11	Public sector bodies involved in construction procurement must have access to the right mix of professional procurement and construction expertise to ensure that infrastructure is procured effectively. It may not be appropriate for each organisation to retain this expertise on a permanent basis. It may instead be achieved through collaboration with other bodies - either on a project-by-project, or a longer-term basis.	2	
	28	7.2.26	A current and required baseline of skills in construction procurement should be established. A strategy should be developed	3	

¹ Delivery schedule refers to when each implementation will be completed for each recommendation. Schedule 1 will be complete by 30 June 2015, Schedule 2 by 30 June 2016 and Schedule 3 by 31 December 2016.

			to ensure those needs are met through both formal learning and mentoring, building as appropriate on the Scottish procurement competency framework. Consideration should be given as to whether a structured approach to delivering appropriate learning – such as a Skills Academy approach (virtual or otherwise) – would deliver some or all of the required benefits		
Linkages and Collaboration	7	5.4.6	Public sector bodies involved in construction projects should be able to demonstrate that sufficient linkages are made between them. This should include consideration of appropriate opportunities for collaboration and for synergies with other programmes of work in the planning phase of all infrastructure spend.	2	
	8	5.5.3	Regional co-ordination of infrastructure spend should be considered by councils across Scotland	2	
	37	7.3.8h	If not already established, public sector procuring authorities should work together to develop forums with locally-operating construction firms which would meet on a regular basis and include economic development teams and construction procurement staff to discuss the pipeline of work, issues and opportunities, with a view to building greater understanding, transparency and improved processes and practice.	3	
Benchmark Database	59	9.5.10	Sectorial records of project outturn costs, including what they were estimated to cost at business plan and contract award stages and actual cost on completion, should be developed and maintained so as to provide meaningful benchmark figures for the public sector in Scotland. These records should also record timescales and quality measures to enable a true assessment of performance delivery to be made.	2	
	60	9.5.10	Guidance should be developed on robust management information requirements and should cover baseline data, benchmarks, metrics and KPIs.	2	
BIM	57	8.6.13	BIM should be introduced in central government with a view to encouraging adoption across the public sector. The objective should be that, where appropriate, projects across the public sector adopt	3	

			BIM level 2 by April 2017.		
	66	10.5.2	The industry needs to be ready to embrace modern methods of construction, and new and emerging technologies such as Building Information Modelling.	2	

EFFICIENT PROCUREMENT

Workstreams	Index	Report Paragraph	Recommendation	Delivery Schedule	Comment
Procurement Journey	29	7.3.6	New standardised guidelines setting out best practice on the end-to-end construction procurement process should be developed and maintained. As far as possible, the guidelines should be written in plain English and should be in an accessible digitised form based on the example of the procurement "Journey" for goods and services. The guidelines should be capable of being used in a proportionate way for projects of different sizes and risk profiles as well as being adaptable for different sectors.	3	
Assurance	25	6.9.20	A consistent approach to project assurance should be used for all major construction projects. Gateway reviews should be the benchmark against which other models should be tested.	2	
	27	7.2.19	The existing PCA framework should be developed to ensure that it adequately assesses, reports on and helps to improve organisations' ability to procure publicly funded construction. Those carrying out the assessments should be suitably qualified to do so and all organisations procuring construction projects with public funding should undergo procurement capability assessments.	2	
Spending Forecasts	6	5.3.8	Each public body should publish annually a rolling pipeline plan of anticipated spending on construction, setting out detailed known information on timescales for pre and post-contract award including any planned phasing, the anticipated approach to market, the status of required consents, the funding model being used and whether formally approved by their governing body. These pipeline plans should be collated and held centrally, and should initially contain all anticipated work above a value of £4 million over the next two years, with a clear plan put in place to extend this to cover at least	3	

			work worth £2 million or more, and a timeframe of at least three years.		
	58	9.5.10	Action should be taken to ensure robust systems are in place to track all spending on construction by public authorities such that a complete analysis of annual public sector construction spend in Scotland can be easily available.	2	
Tender Process	30	7.3.8a	Good practice guidance on those elements of bids which should and shouldn't be scored and on the focus to be given on quality and whole life costing in the scoring should be developed.	2	
	31	7.3.8b	Public bodies should rightly seek to re-assure themselves of the competence and skills of bidders. This, however, should be done through asking for appropriate experience - as indeed is Scottish Government policy - rather than necessarily asking for exact experience of similar project delivery within a short number of years (for example "supply three examples of community halls which you have built in the last five years").	2	
	32	7.3.8c	The ability of a company to deliver a contract should not solely be measured by the use of turnover thresholds. Where annual turnover is part of financial criteria it should be limited to no more than two times the annual contract value as outlined in the EU commission's proposal. Further guidance should be developed on other valid and proportionate methods for assessing financial strength and risk.	2	
	33	7.3.8d	To the extent possible within the full scope of the law, including as may be amended by the new EU Procurement Directive and Procurement Reform Bill, contracting authorities should take the prior performance and behaviour of bidders into account when awarding contracts. Guidance which ensures compliance with legislation should be developed.	2	
	34	7.3.8e	The Scottish Government should reissue its existing guidance to the public sector on how to deal with abnormally low tenders.	2	
	35	7.3.8f	Guidance should be developed which assists contracting authorities to carry out successful pre-market engagement as part of a construction project.	2	
	36	7.3.8g	Contracting authorities should always make feedback available to both successful and unsuccessful bidders at PQQ and ITT stage.	2	

			Feedback should be timely, and a model of good practice building on existing sources, such as 'the Scottish Suppliers' Charter, and legislative requirements, should be developed.		
	43	7.3.26a	Additional guidance for the public sector should be developed to ensure that the standard PQQ is used in a way which is proportionate and relevant to the needs of construction procurement and monitor practices to ensure that this principle is achieved. The standard PQQ should continue to be refined and, where a pre-qualification stage is being used, its use should be mandated.	3	
	44	7.3.26b	SPCD along with bodies such as RIAS and RICS should work collaboratively to develop consultancy / specialist services suites of standard questions for the standard PQQ. Other requests for specialist suites of questions should also be considered and assessed by SPCD as they arise.	2	
	45	7.3.33a	The use of Quick Quote should become the norm for works contracts worth less than £500,000, and public bodies should consider using Quick Quote for awarding construction-related contracts worth less than the proposed thresholds in the Procurement Reform Bill (£2 million for works and £50,000 for supplies and services).	2	
	46	7.3.33b	When using Quick Quote, public bodies should be able to demonstrate a clear audit trail to contract award, to ensure transparency and accountability.	2	
	64	10.4.7	The industry should consider what is prompting 'suicide bids', and how to arrest them, so that both the customer and the contractor get a fair deal.	2	
Systems	39	7.3.14a	Practice should be standardised by making the use of Public Contracts Scotland mandatory when advertising publicly-funded construction contracts.	2	
	40	7.3.14b	Contractors on major projects should be encouraged to advertise sub-contracts on PCS where they have not already fully identified their supply chain	3	
	41	7.3.14c	Product categorisations used on PCS should be reviewed to ensure that they are as accurate as possible for construction projects.	3	
	42	7.3.14d	SPCD should assess the current performance of the PCS systems	3	

			through user feedback to ensure high standards are being achieved and are capable of being maintained following adoption of wider usage.		
	47	7.3.37	The use of PCS Tender should be mandatory for creating ITTs, using standard question sets as the basis, and submitting tender returns - whether individual contracts or frameworks.	2	
Frameworks	11	6.3.22	<ul style="list-style-type: none"> Guidance on best practice in the use of framework agreements should always be followed, in particular in allowing opportunities for SMEs to participate. 	2	
Contracts and Risk	16	6.7.5	Thorough consideration of options must be applied to contract selection as part of the pre-commercial stage.	2	
	17	6.7.18	There must be an open, mature and reasonable discussion between parties when deciding on the allocation of risk.	2	
	18	6.7.24	Any variations to standard forms of contract should be kept to a minimum and used only when absolutely necessary to take account of the particular circumstances of the project.	3	
	19	6.7.28	Specific guidance should be developed to help contracting authorities to decide when and how to use painshare/gainshare arrangements.	2	
	23	6.9.13	Cash retentions should be used only after careful consideration by contracting authorities, and not as a default measure	2	
New Methods of Procurement	14	6.5.10	The potential for savings to be delivered from clients enforcing the 'self-delivery' of contracts by main contractors should be investigated, with particular reference to the work being undertaken by Scottish Water.	3	
	15	6.6.6	Developments in the UK Government's trials of its three 'new methods' of procurement should be monitored, and guidance developed for their use in Scotland, if appropriate.	3	
Hub Programme	13	6.4.11	Further guidelines about certain aspects of the operation of the hubCo model should be developed including improve payment	1	

			terms, support the monitoring of performance, improve Exchange of information, consider minimum contract threshold.		
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SUSTAINABLE PROCUREMENT

Workstreams	Index	Report Paragraph	Recommendation	Delivery Schedule	Comment
Fair Payment	20	6.8.4	All public bodies should adopt a maximum 30 day payment term to their suppliers, as detailed in Scottish Procurement Policy Note 08/2009, and this should form the target against which performance in meeting payment terms is monitored as part of procurement capability assessments (unless shorter targets have already been adopted by the organisation in question).	3	
	21	6.8.12	The use of Project Bank Accounts should be trialled in Scotland.	2	
	22	6.8.19	Public sector clients need to ensure that there is a clear understanding between those involved in pre-contract award stage and those involved in delivery on the public sector requirement for fair payment. Contractual terms between client and main contractor should consistently outline fair payment terms for supply chain participants. Clients should ensure that appropriate resources are allocated to contract management and enforcement of terms and conditions of contract.	2	
	24	6.9.17	Cash retentions should be used only after careful consideration by contracting authorities, and not as a default measure. Whilst contracting authorities have a duty to safeguard public funds, they should also be mindful of the potentially detrimental effects of cash retentions on their contractors. Greater guidance should be developed to help contracting authorities to determine when and how they should use cash retentions and other project assurance tools in an appropriate and proportionate manner.	2	
	63	10.3.6	The Fair Payment Charter should be promoted more widely as the "norm" within the construction industry. The industry should consider how it can collectively make late payment of suppliers an unacceptable practice. When the public sector adopts good practice - such as might relate for	2	

			example to the appropriate use of retentions, requirements for insurance or the use without alteration of appropriate standard forms of contract - industry should replicate this throughout the supply chain.		
SMEs	11	6.3.22	When used inappropriately, UK-wide frameworks and frameworks negotiated by regional purchasing bodies elsewhere in the UK can have the effect of preventing SMEs from participating in public procurement. Guidance should be developed and implemented on the appropriate use of such frameworks. This guidance should pay particular heed to the value of growing local economies.	2	
	38	7.3.8i	If not already established, public sector procuring authorities should work together to develop forums with locally-operating construction firms which would meet on a regular basis and include economic development teams and construction procurement staff to discuss the pipeline of work, issues and opportunities, with a view to building greater understanding, transparency and improved processes and practice.	2	
Housing	9	5.6.2	Current Scottish Government Affordable Housing Supply programme arrangements provide for an enhanced role for local authorities in programme planning and prioritisation. Alongside Scottish Government, local authorities should therefore play a key role in helping to inform and influence procurement choices and delivery of local authority and RSL affordable housing supply in their areas as well as looking more widely at potential synergies with neighbouring authorities.	3	
Community Benefits	48	8.2.9a	Good, detailed, community benefits guidance exists currently on the Scottish Government website, but it is lengthy and should be reviewed and integrated within a wider Construction Procurement Journey. This guidance should include:	1	
	49	8.2.9a	The requirement that contracting authorities should have a clear strategic understanding of what they want community benefits to deliver through their public procurement for the sustainability of the Scottish and local economy and the community within which the project is being delivered. The public body should set out its strategic objective and ask the contractor to set out in its tender how it will meet that objective.	2	
	50	8.2.9b	Guidance to contractors to help design & deliver community	1	

			benefits		
	51	8.2.9c	Guidance to contracting authorities to assist an open consideration of community benefit proposals at ITT stage should be developed.	1	
	52	8.2.9d	The promotion of continuity and completion of apprenticeships. One means of doing this may be through encouraging the public sector and industry to work together to develop a shared apprenticeship model that refocuses the emphasis on the completion of apprenticeships and the practicability of such models should be investigated.	2	
	53	8.2.9e	Monitoring by public sector clients of performance in relation to community benefits delivery, and use of that performance monitoring information as part of overall performance assessment for future contracts whether through frameworks or open processes. This could be done as part of a suite of KPIs.	1	
	65	10.5.2	Industry should use existing sources of guidance and work with the public sector to develop best practice models for the delivery of community benefits, and a shared apprenticeship model.	2	
Environmental Sustainability	54	8.5.8a	The Scottish Government should build on some good work by RSLs and others by better incentivising greener construction and promoting modern methods of construction and providing better advice and guidance on renewables technologies.	3	
	55	8.5.8b	Guidance should align to wider sustainable procurement agenda... potential for construction to demonstrate the benefits of good procurement and should take account of the findings of the Sullivan panel when they are published.	3	
	56	8.5.8c	The Scottish Government should promote a more coherent joined up approach to sustainability for public sector construction.	3	

OUTCOME FOCUSED PROCUREMENT

Workstreams	Index	Report Paragraph	Recommendation	Delivery Schedule	Comment
Best Practice	5	5.2.5	There should be a review of the methods of strategic prioritisation and co-ordination of construction spending across the public sector in Scotland - to identify best practice and to ensure that investment decisions are informed by the use of appropriate techniques.	2	
	61	9.5.10	Project evaluation should be promoted and should build on the Learning Lessons Approach.	2	
	67	10.5.2	The industry should consider what industry-led training programmes currently exist for public sector work, and whether there is scope for these to be co-ordinated and developed further.	2	
Whole Life Costing/Design led Procurement	10	6.2.32	Design and whole life costing should be afforded appropriate priority in any construction procurement process. A comprehensive business case and procurement strategy focusing on desired outcomes and whole-life costs should be developed. This will require the earliest possible engagement between clients, users, designers and contractors	2	



30 – Ιρλανδία

31 – Ir, Construction Strategy 2020

Construction 2020: A Strategy for a Renewed Construction Sector

Ireland needs a competitive, innovative, dynamic, safe and sustainable construction sector; one that makes its full and proper contribution to the economy and to job creation, and one that is based on best practice and capable of delivering the economic and social infrastructure we need to build to sustain a prosperous future. This Strategy sets out steps to take us closer to that goal over the immediate and longer term while aiming to increase the capacity of the sector to create and maintain jobs, and to deliver a sustainable sector, operating at an appropriate level.



Construction Procurement Reform

The Department of Public Expenditure and Reform is responsible for implementing **national policy on public procurement, particularly in relation to construction procurement.**

The Department's website: www.constructionprocurement.gov.ie has been specifically developed to implement the key outputs of the **Government Decision of May 2004 in relation to the reform of public sector construction procurement.**

The main objectives of this reform initiative are:

- Cost certainty at tender award stage
- Better value for money (VFM), and
- More efficient delivery of public works projects

Construction 2020

A Strategy for a Renewed Construction Sector

May 2014



BAILE ÁTHA CLIATH
ARNA FHOILSIÚ AG OIFIG AN tSOLÁTHAIR

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A Strategy for a Renewed Construction Sector



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Foreword

The Government was elected to deliver reform, renewal and recovery. This is arguably more relevant to the construction sector than to most.

Many factors contributed to the economic catastrophe that hit this country. Many, if not most, of them – lax political management, reckless lending and borrowing, speculative greed, short-term thinking, poor planning and low standards – were features of our boom-time approach to property development and construction.

The legacy – lost jobs, unmanageable mortgages, debt overhang, negative equity, houses on flood-plains, shoddy and sub-standard apartments, ghost estates – remains all too human and real.

We are working our way through it, and we will continue to do so.

But it is time for a fresh start, one in which the lessons learnt from what went wrong are applied to the creation of a renewed and vibrant construction industry fit for the future.

That is what this Strategy is about.

Ireland needs a strong and sustainable construction sector.

We need good quality homes to live in. High-quality commercial developments to underpin economic recovery and growth. Infrastructure fit for the future, whether in telecommunications, water or energy networks.

We need people gainfully employed and equipped with world-class skills. Competitive companies able to access the funding they need. Mortgages available on reasonable terms, and consumers confident of high standards and proper oversight.

We need a planning system that supports that vision – that makes sure that we are building the right things, in the right places, and that we are not placing unnecessary obstacles in the way of urgently needed and appropriate development.

This Strategy is also about jobs.

We have set ourselves the ambitious objective of returning the economy to full employment by 2020, and in doing so, replacing all of the jobs lost during the crisis. Having successfully exited the bailout, we have said our top focus for this year will be on getting people back to work.

This Strategy is an essential part of that effort.

We are determined to help all of those on the Live Register find meaningful and rewarding employment. We are making important progress, but there are still tens of thousands of people with a background in construction without work.

We will continue to do all we can to assist their return to the workforce, including through extending the use of social clauses in public contracts and helping them update and renew their skills.

An appropriately sized construction sector can help to deliver jobs across the country, not just to those directly involved in the industry, but to the manufacturing, retail and professional sectors that it supports.

It can help to underpin the future competitiveness of the country, ensuring that we continue to be well-positioned to attract the inward investment that has been so important to our economic development.

In this Strategy we have set out a focussed programme of action to deliver a strong, sustainable, well-financed, competitive and innovative approach to construction and housing, building to the highest standards, at realistic levels and with consumer protection at its heart.

Implementing it will require a big effort – both inside and outside Government - and a whole-of-Government approach.

We are determined to ensure that it is advanced with the determination, energy and commitment it deserves.



A handwritten signature in black ink that reads "Enda Kenny". The signature is written in a cursive, flowing style.

Enda Kenny T.D.
Taoiseach

A handwritten signature in black ink that reads "Eamon Gilmore". The signature is written in a cursive, flowing style.

Eamon Gilmore T.D.
Tánaiste

1. Introduction

Our Vision

Ireland needs a competitive, innovative, dynamic, safe and sustainable construction sector; one that makes its full and proper contribution to the economy and to job creation, and one that is based on best practice and capable of delivering the economic and social infrastructure we need to build to sustain a prosperous future.

This Strategy sets out steps to take us closer to that goal over the immediate and longer term.

It builds on the detailed framework for accelerated recovery of the sector published by Forfás last year¹, as well as on progress since, including the Government’s policy statement on construction of July 2013.

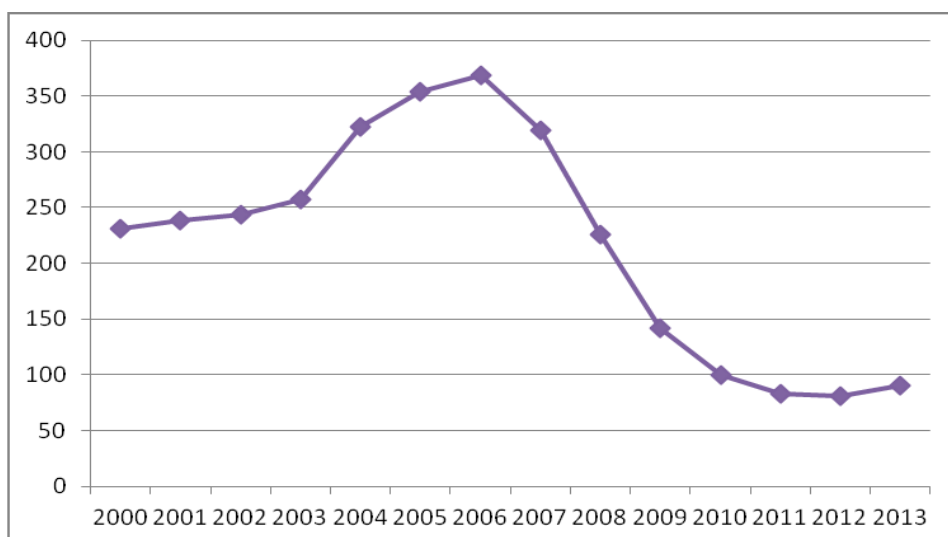
The Strategy aims both to increase the capacity of the sector to create and maintain jobs, and to deliver a sustainable sector, operating at an appropriate level. It seeks to learn the lessons of the past and to ensure that the right structures and mechanisms are in place so that they are not repeated.

The Government is committed to working with industry and other interested parties to deliver this strategy. We expect industry to play its part, to step-up to the mark and deliver a world-class and competitive construction sector.

Having grown too big during the boom, the sector is now seriously underperforming, both in terms of economic contribution and in employment. This is a cause of concern.

By 2012, the volume of production in building and construction had fallen to less than a quarter of the 2006 peak, and it remains less than half of the volume seen in the year 2000.

Index of the Volume of Production in Building and Construction (Base 2010 = 100)



Source: CSO

¹ Ireland’s Construction Sector: Outlook and Strategic Plan to 2015 (Forfás, 2013)

A properly functioning and sustainable construction sector is important for us all.

In the immediate term it can help drive recovery in the domestic economy, creating and sustaining direct and indirect jobs across the country. It can facilitate the return to work of the many unemployed people with a background in the industry, reducing the number of construction workers on the Live Register.

It is also essential to the future social and economic well-being of the country – if we are to have the housing and infrastructure we will need in the years and decades to come, we need to be planning for and building them now.

Failure to do so will constrain our future potential for growth.

This Strategy, therefore, has a particular focus on steps that can be taken in the immediate future to ensure that necessary and sensible development can take place, and that it is not held back by unnecessary obstacles.

It moves us closer to the world-class, competitive and dynamic sector we want to see in Ireland.

Construction and development is a complex process in which many factors, actors and influences are in play. All need to be in balance if the process is to work efficiently.

This Strategy therefore addresses issues including:

- a strategic approach to the provision of housing, based on real and measured needs, with mechanisms in place to detect and act when things are going wrong;
- continuing improvement of the planning process, striking the right balance between current and future requirements;
- the availability of financing for viable and worthwhile projects;
- access to mortgage finance on reasonable and sustainable terms;
- ensuring we have the tools we need to monitor and regulate the sector in a way that underpins public confidence and worker safety;
- ensuring a fit for purpose sector supported by a highly skilled workforce achieving high quality and standards; and
- ensuring opportunities are provided to unemployed former construction workers to contribute to the recovery of the sector.

Getting People Back to Work

The Government has said that 2014 is the year for jobs, and getting our people back to work is our unrelenting focus. This vital task lies at the heart of this Strategy.

One of the major tragedies of the downturn has been the number of construction workers with valuable knowledge and skills that have lost their jobs or have left the country to find work elsewhere.

At the peak of the boom in 2007 over 270,000 persons were directly employed in the sector, by 2012 this figure was below 100,000.

Many of them have, as yet, been unable to find a way back into our workplaces.

As we look to rebuild and renew it is worth recalling what that means in real terms – if only to ensure that we never again allow ourselves to reach crisis point.

In the years between 2006 and 2010, the number of employed bricklayers fell by nearly 82%, the number of labourers by more than 78%. Employment of plasterers was down by 71%, architects by 61%. No other sector was so devastated by the storm that was unleashed on the country.

A key focus of this strategy is, therefore, getting ex-construction workers off the live register and back to work.

We have a duty to remember and to learn from our experiences, but also to look to the future and to the opportunities ahead.

There are good reasons to believe that the situation has stabilised, and that there is now scope to grow over the years ahead.

The Government will continue to play its full part, including through our capital spending programme and the initiatives contained in Budget 2014, and we look forward to industry and all stakeholders doing so too.

In bringing forward this Strategy we are very conscious of the need to ensure that growth is sustainable, and that it avoids the type of over-heating we have seen before. For that reason, it would not be appropriate to set a target size for the sector.

It is important nonetheless to be able to measure how it is performing, and to benchmark it against international norms. According to analysis undertaken by Forfás, the construction sector contributed just 6.4% to GNP (5% of GDP) in 2012.

In comparison with other countries - and taking on board long-term trends for Ireland - an economy of our size, with our remaining infrastructure deficits and positive demographics, could be capable of sustaining a construction industry equivalent to around 12% of GNP (10% of GDP).

It will take time for this recovery to take place, but we expect that significant headway can be made over the lifetime of this Strategy.

We can also expect renewed activity to deliver more jobs, including for those on the Live Register.

In our Medium Term Economic Strategy we projected that, in a baseline scenario, employment in the economy as a whole would rise to over 2.1 million by 2020. In such a scenario - and drawing on experience and international comparison - it is not unreasonable to expect that employment in the construction sector could increase by 60,000.

We will continue to monitor the situation closely to ensure that development in the sector is reasonable and that it is underpinned by the best available data. We will ensure that mechanisms are in place to address any imbalances that may emerge.

In acting now, we can lay the groundwork for a world-class, competitive, safe and dynamic sector operating to the highest standards and in line with best practice.

2. A Strategic Approach to Housing

In recent years in Ireland there has been little connection between the construction and supply of houses and any measured, sustainable level of demand.

In 2006, at the peak of the housing bubble, some 93,419 housing units were completed across the country, 19,470 of them in Dublin. In 2013 a total of 8,301 homes were completed with just 1,360 in Dublin.

These figures reflect how wildly the pendulum has swung.

As a result, we continue to have an over-supply of homes in many parts of the country – including some houses that will never be occupied or sold – coupled with rising prices and rent levels in key urban areas especially in parts of Dublin, evidence of a growing and significant under-supply.

Neither approach is sustainable.

In addition, since the boom, a number of factors have resulted in a lack of activity and mobility in the housing market. These include weak consumer confidence and uncertainty; high levels of unemployment; difficulties accessing credit; build-up of unsold stock and a large number of vacant units; a collapse in prices and negative equity; mortgage arrears; and people's understandable wish to maintain tracker mortgages.

Economic uplift should contribute to unlocking a number of these, and the Government will continue in its work to rebuild the banking sector and to support and assist those in mortgage distress.

We will also continue to work to address legacy issues arising from the boom, including in regard to ghost estates, pyrite, and developments such as Priory Hall.

But it is also clear that, as set out in our Medium Term Economic Strategy, we need to develop an overall strategic approach to housing supply – one that is evidence based, and that equips local and national authorities with the tools they need to detect emerging imbalances and to take the steps necessary to correct them at an early stage.

Taking a Measured Approach

The first necessary step in mapping out a strategic approach for the medium term is to look at the likely demography of the country in years to come. Considerable work has already been done in this regard.

According to the CSO, the number of households grew by 13% between 2006 and 2011, and it has been projected that it will increase by 5% between 2011 and 2016, resulting in some 85,000 additional households in a mid scenario.

A recent report from the Housing Agency on future housing supply requirements for the period 2014 to 2018 suggests a total requirement of just under 80,000 dwelling are required across 272 urban settlements nationally, an average of 15,932 units per annum over the five years (ranging from 9,526 in 2014 to 20,853 in 2018). It estimates that 47% of total supply over the period is required across the Dublin Region. The report also notes that 57% of all households in the Dublin region over this period will be for one and two persons, while a further 18% will be for three person households. This has consequences for the type of housing supply we will need.

Recent analysis by the ESRI has estimated that, in coming years, increases in population will result in the formation of at least 20,000 new households each year, each requiring a separate dwelling. In addition, a number of existing dwellings will disappear through redevelopment or dilapidation. The results suggest an ongoing need for at least 25,000 new dwellings a year over the coming fifteen years.

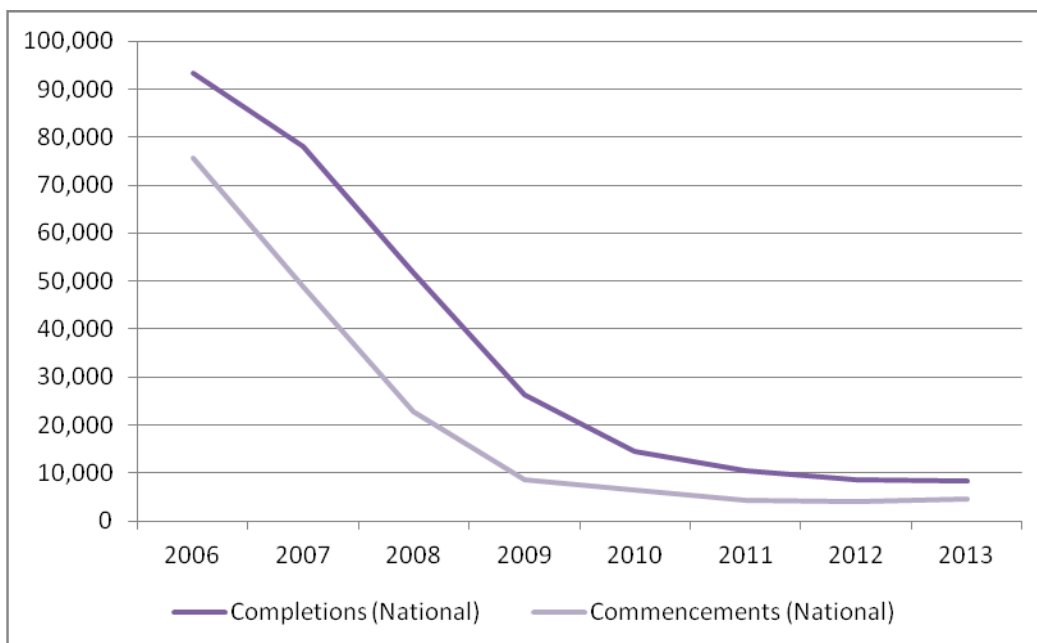
Against this background just 4,042 residential units were commenced in 2012 (19% in Dublin) and just 4,708 in 2013 (31% in Dublin).

This is clearly far from an appropriate level of activity.

If adequate resources were available, in the period from 2017 onwards, completions could more than double to between 20,000 and 25,000; or in the region of an additional 15,000 units a year.

Such a level of investment will be necessary in the next decade if the ongoing demographic change in Ireland is to be accommodated.

National Housing Commencement and Completions 2006-2013



Source: DECLG

Demographic changes, including an aging population and a continued decline in the average household size, suggest that smaller units may be required in the future. Projections indicate that 1 and 2 person households will account for approximately 55% of housing supply requirements in the years ahead.

To help establish a firm benchmark the ESRI, supported by NAMA and the IBF, is currently undertaking deeper research which will examine demographic drivers of demand in coming years – the likely size, composition and location of the population – as well as macro-economic factors influencing supply. This research will also consider micro-economic barriers to increasing supply to meet prospective demand, and the role of credit in the future housing market.

The result of this research will be an important input into the work that lies ahead.

Maintaining a balanced and measured approach will be an ongoing and vital task. We will continue to subject projected demand and supply requirements to monitoring and evaluation so as to ensure that they remain appropriate. Where imbalances emerge, we will take early action to address them.

Creating a National Framework for Housing Supply

The absence of real-time data from across the country, and a means to interpret and correct it, was a significant contributory factor to the disastrous supply and demand mismatch that characterised our house building throughout the boom years.

This cannot be allowed to happen again.

We will, therefore, ensure that we have the robust, reliable, timely and accurate data we need to underpin a more strategic approach for the future.

We will maintain, in one place, a comprehensive and up-to-date supply database – including figures on house completions; commencement notices; planning permissions; vacancy levels; and the National Housing Development Survey – to be analysed against projected demand, broken down on a national and local basis, with information on housing types and sizes a key feature.

This national framework, which will be put in place urgently using existing provisions in Section 10 of the Planning Act 2000, will enable us to take regular stock of developments in any location across the country, to identify emerging problems at an early stage, and to intervene to tackle them.

We will ensure that planning legislation equips us with the tools necessary to do so.

The result will be that, for the first time, the country will have a robust framework for housing supply, preventing any possible return to the disastrous practices of the past.

The Department for the Environment, Community and Local Government will oversee, implement and manage this new approach, together with the Local Authorities and other interested parties.

To ensure transparency and adequate monitoring, there will be an annual publication on the framework outlining a breakdown of projected supply against projected demand, and any actions required to address potential mismatches. The Minister for the Environment, Community and Local Government will update the Government on the contents of the publication in June each year.

Where residential development is proposed in an area it is important that accompanying infrastructure requirements, such as the need for schools provision, are taken into account at an early stage. In this context relevant Departments and Agencies will feed into this process. For example, the Department of Education and Skills utilises a Geographical Information System to analyse demographic data in order to determine the areas where additional school accommodation may be required. A variety of sources are used in this analysis, including census data, school enrolment data, and child benefit data obtained from the Department of Social Protection.

Supply Issues in Dublin

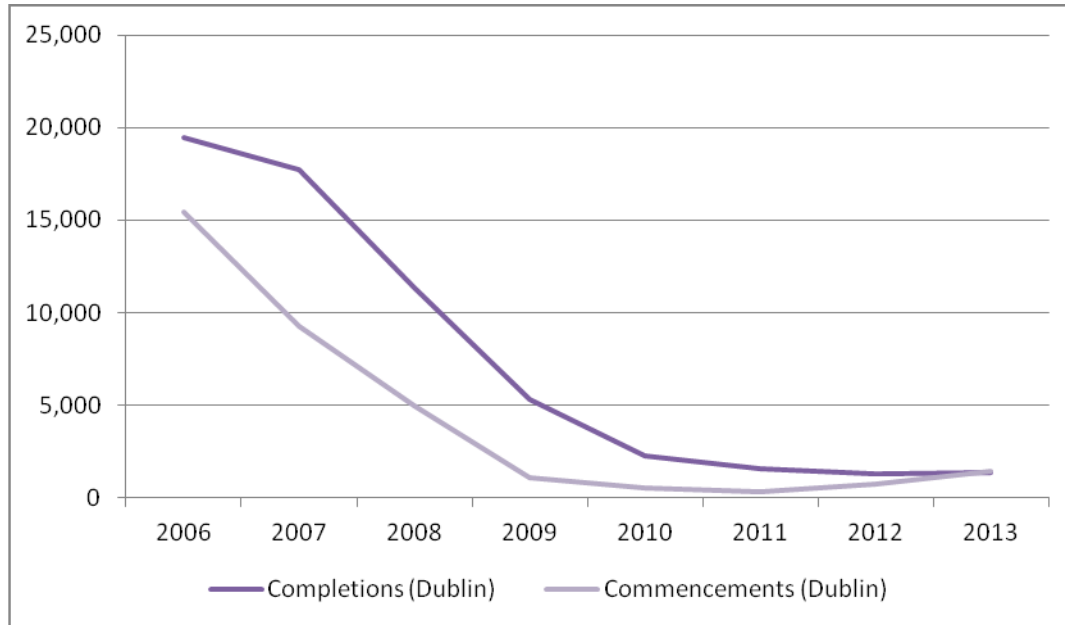
In many locations outside Dublin, evidence points to a continuing over-supply of housing – with vacancy rates remaining well above what is regarded as normal in a functioning market².

We recognise however that there are particular concerns about housing supply in Dublin. Since the peak of the boom, housing output in Dublin has fallen dramatically to a position where in 2013 only

² Census 2011 revealed an estimated total vacancy rate across the country of 11.5% (excluding holiday homes). A typical rate in a functioning market would be expected to be about 4.5-6%.

1,360 homes were completed in Dublin – about 16% of the national total. Just 1,451 units commenced in Dublin last year.

Dublin Housing Commencement and Completions 2006-2013



Source: DECLG

In addition to questions of supply, there has also been a reduction in mobility in the housing market. For a variety of reasons – including negative equity, a wish to protect tracker mortgages, uncertainty about future developments in price, and financing constraints – the number of second hand houses being placed on the market has fallen significantly. Fewer households than would normally be the case are seeking either to trade up or to downsize, constraining mobility in the market.

The result has been increased upward pressure on prices for the limited supply that is available, and knock-on consequences for rents where demand is outstripping supply.

The CSO’s monthly Residential Property Price Index showed an increase of 14.3% across all property types in Dublin in the twelve months to March 2014. The PRTB’s Rent Index showed an annual growth in rents in the capital of 7.6% last year.

Given concern about the level of supply in the Dublin area, the four local authorities are already working together to identify housing developments that have planning permission and that are capable of being delivered in the short-term. They are also exploring what steps may be necessary to facilitate them.

In this work, they are seeking to leverage to maximum advantage existing public infrastructure investment, including transport, which has been put in place in recent years.

They have estimated that there are already 2,000 hectares of land zoned for housing in Dublin, with 1,000 hectares of these comprising large blocks of land in both brownfield and greenfield locations well served by public transport and other essential infrastructure. At conservative estimates these lands have the potential to accommodate upwards of 30,000 units of accommodation in the Dublin region, across the four local authority areas.

The other 1,000 hectares zoned residential, while currently in more peripheral or infrastructure-poor – areas, could also make a contribution to supply over time.

The Department of the Environment, Community and Local Government will work actively with the four Dublin Local Authorities in this regard. It will oversee the early establishment of a **Housing Supply Coordination Task Force** for Dublin, with an immediate focus on monitoring trends in the supply of viable and market-ready approved developments and acting on those trends where supply is believed to be below what is required. It will work closely with industry and other parties, including those responsible for key infrastructure, to identify and address any obstacles to viable and appropriate development.

Private Rented Sector

While home ownership remains for many the preferred choice for housing, the private rented sector almost doubled in size between 2006 and 2011 and approximately 1 in 5 households in the country are now renting privately. This is likely to remain a significant part of the housing landscape into the future.

Rents in the large urban areas are increasing and this is leading to acute affordability issues for some tenants. The Housing Agency advises that there is a serious and increasing shortage of rental accommodation in Dublin city. A shortage of rental accommodation has both social and economic impacts. Affordability issues cause financial hardship for families and a lack of availability at a reasonable price can become a major barrier to employment creation and impact on our competitiveness and attractiveness for foreign investment. While increasing housing supply will help to address this in the medium to long term, we will continue to consider rent affordability in the short term.

People who rent their homes are just as entitled to high standards as those who buy. We are therefore committed to ensuring a strong, sustainable, professional and well-regulated private rented sector.

All landlords have an obligation to ensure that their rented properties comply with the minimum standards provided for in law. Responsibility for enforcing the regulations rests with local authorities, supported by a dedicated stream of funding allocated by the Department of the Environment, Community and Local Government from the registration fees income received under the Residential Tenancies Act. Every City and County Council carries out inspections and the Department keeps standards under review and engages actively to ensure their enforcement.

In February last year, Articles 6, 7 and 8 of the Housing (Standards for Rented Houses) Regulations came into effect in full for all rented accommodation, resulting in the phasing-out of the traditional 'bedsit'-type accommodation, modernising requirements for sanitary, heating and cooking facilities. Local Authorities are expected to have a particular focus on raising awareness and enforcement in this regard, especially to alert tenants to the protections afforded to them in law.

Inspections are crucial. Last year, Dublin City Council published its first report into the Inspection Programme undertaken into Pre-63 rented properties in the city. Following an initial inspection of 268 properties across six areas of the city, a total of 1,801 bedsits were found. In excess of 90% of these were not in compliance, with follow up action taken by the Council.

We will continue to support local authorities in this vital work.

We are aware that the issue of deposit protection is a persistent source of complaint for some tenants. In the Programme for Government, we committed to establishing a tenancy deposit protection scheme to improve management of deposits and provide for speedy resolution where disputes arise.

We will provide for this in law this year, ensuring that a fair, transparent solution is put in place that will benefit both tenants and landlords.

It is clear that the make-up of Ireland's housing market, including the share of different tenures, will continue to change over time, with the private rented sector playing an important role in housing those who cannot afford to buy their own homes as well as those who prefer not to. We need to ensure that renting is a secure, stable, and viable option for those who choose it.

A range of accommodation types are required to meet market demands, and there are economic opportunities, for example, for the supply and provision of purpose-built student accommodation and accommodation suitable for older people.

The private rented sector is characterised by small scale landlords. Attracting large scale investment in professionally managed residential property, for example using Real Estate Investment Trusts and other options for long-term investment, can have an important role to play in helping to deliver the professional high-standard sector that tenants deserve. We look forward to the report of the Private Residential Tenancies Board (PRTB) on the future of the private rented sector, which is expected later this year. A key element of their research is to assess the economic, policy and taxation treatment of the sector with a view to making recommendations to encourage more and larger scale investment in order to increase the supply of good quality, secure and affordable rented accommodation.

Indirect costs associated with accommodation are also important to consider. The requirement for all properties offered for sale or rent to have a Building Energy Rating (BER) was introduced from January 2013. To date, over 421,000 homes have received a BER certificate, providing the occupants with valuable information on how to improve their energy efficiency, and thus reduce their energy bills. We want to ensure that, in accordance with the National Affordable Energy Strategy, everyone can afford to heat and power their homes to an adequate level. As a result we will establish a working group to explore whether it is feasible to introduce minimum thermal efficiency performance standards for properties offered for rent. Such a change, if introduced, would reduce energy poverty, improve health and minimise emissions from the private rented sector.

Social Housing

Ensuring every citizen has access to suitable housing is a key policy goal of Government.

The Summary of Social Housing Assessments published in December showed that 89,872 households were assessed as qualifying for housing support as of May 2013. Of these, single person households make up the largest household type (44%), followed by single adults with a child or children (30%). Social welfare was the only source of income for 72% of households and 75% were living in private rented accommodation, with two-thirds in receipt of rent supplement.

The Government will continue to prioritise the delivery of good quality social housing, including the return to mainstream local authority housing construction this year; enhancing the role of the not-for-profit sector in the provision of social homes; and continuing to work with NAMA, the Local Authorities, and approved housing bodies to maximise delivery of units owned by NAMA or its debtors for social housing over the lifetime of the Government.

We will identify the best ways to deliver social housing for the years ahead through the development of a comprehensive strategy for Social Housing, setting out a vision for the sector.

It is estimated that in the region of 5,000 new Social Housing units will be provided in 2014 through leasing and existing capital programmes. This includes completion of mortgage-to-rent

arrangements; the continued transfer of units owned by NAMA or its debtors; completion of existing building and acquisition programmes; and transfers under the Rental Accommodation Scheme.

Budget 2014 contained innovative housing measures, and announced an additional €30m investment in local authority housing. This €30m investment is expected to provide a substantial number of new and refurbished homes for people on housing waiting lists. Approximately half of this investment will enable the construction of new infill developments in areas with the highest demand for social housing.

In March the Minister for Housing and Planning launched a two year €68m local authority home building initiative, which will build some 449 new social homes for families in need of housing. This investment represents the first return to new mainstream local authority house building since the beginning of the financial crisis.

Details of a €15m fund to bring vacant local authority houses back into use were announced in April. This fund will bring 952 vacant local authority units back into beneficial use, providing high quality homes for people in need of housing, while also providing employment through labour intensive activity.

This year will also see the completion of a three year €100m investment that will provide 800 units for older people, people with a disability or people without a home.

We are currently in the process of rolling out a new Housing Assistance Payment (HAP) which, in addition to helping to remove barriers to employment for recipients, will contribute to the creation of a higher quality private rented sector through improved standards.

The contribution of the not-for-profit sector in the provision of social housing will be facilitated by introducing legislation to regulate the sector. Regulation will enhance the ability of approved housing bodies to attract private finance.

The use of PPPs to support housing regeneration projects stalled during the crisis. Leasing has provided opportunities to ensure the provision of appropriate housing solutions.

Part V of the Planning and Development Act 2000

We are actively reviewing the social and affordable housing elements of Part V of the Planning and Development Act 2000, and have already engaged in a full consultation of the public and other interested parties. The review, which we will shortly conclude, is examining a range of options to ensure that Part V is delivering as intended.

Part V currently requires developers to enter into arrangements with local authorities to support the provision of social and affordable housing through a number of options: provision of units, on- or off-site; provision of land; or cash contributions. The measure was conceived at a time of record levels of housing output, and was originally designed to provide a supply of social housing units for local authorities, and importantly to provide an element of tenure mix.

As a result of the economic downturn, there has been a collapse in construction activity and in house-building in particular. Without a properly functioning construction sector, there is no dividend for social housing, and the result is a lose-lose situation in which very low levels of housing construction deliver very little in terms of social housing.

At the same time, demand for social housing has risen sharply since the onset of the economic crisis. The Part V mechanism therefore has the potential to again be a significant contributor to social housing in the context of a recovering housing market.

In any new arrangements, we will ensure that there continues to be a reasonable and balanced contribution to social housing from private development - Part V has contributed to increased social integration and more sustainable mixed-tenure communities, and the preference will be for the delivery of units on site.

We will also ensure simplicity, clarity and transparency for developers, local authorities, and the public.

There are strong possibilities for partnerships between developers and the approved housing body sector that can augment the workings of Part V, and taken together with early engagement with the local authority, can ensure the efficient delivery of all elements of a development.

Homelessness

The Government continues to focus on tackling the root causes of homelessness maintaining an integrated and efficient approach to service delivery across the relevant agencies.

In February 2013, the Minister for Housing and Planning published the Government's Homelessness Policy Statement in which the Government's aim to end long-term homelessness by the end of 2016 was outlined. The statement emphasises a housing-led approach which is about accessing permanent housing as the primary response to all forms of homelessness. The availability and supply of secure, affordable and adequate housing is essential in ensuring sustainable tenancies and ending long-term homelessness.

The Minister established a Homelessness Oversight Group for the purpose of reviewing the progress of the approach being advocated in the Homelessness Policy Statement, identifying obstacles and proposing solutions. The Group's First Report was published in December 2013. In February 2014, the Government approved the establishment of a designated Homelessness Policy Implementation Team and an implementation unit which will support it. The team is tasked with implementing the Homelessness Oversight Group's First Report. This includes the preparation and publication of a structured, practical plan to make the transition from a shelter-led to a sustainable housing-led response to homelessness and to achieve the 2016 goals for homelessness. This will be a practically focused delivery plan to secure a ring-fenced supply of accommodation for homeless households within the next three years and mobilise the necessary supports. It will contain actions that will be direct, immediate and solutions based, and will prioritise the accommodation of rough sleepers and homeless families. The plan will also drive social housing issues such as the allocation and refurbishment of social housing. In addition, all potential stock across appropriate owners and holders, which might be usable, will be explored for its possible contribution. The Implementation Team will report on this plan to the Cabinet Committee on Social Policy on a quarterly basis.

Legacy Issues

The Government has already taken significant action to deal with some of the worst legacies of the boom.

Last year, we secured agreement on a Resolution Framework to deal with Priory Hall – one of the worst examples of boom-time practices – which will help the residents to move forward.

The Pyrite Resolution Act was enacted in December, and since the end of February the Pyrite Resolution Board has been taking applications for assistance from homeowners who have been affected by damage from pyrite. We now have the structures in place to deliver reasonable and sustainable solutions to those affected. In October last, the Government approved €10 million for a remediation scheme, with further funding to be provided later this year.

We will also continue to deal with the ‘Ghost Estates’, which remain a blight on many parts of the country. We will continue to implement the Action Plan on Unfinished Housing Developments, including through the €10 million Special Resolution Fund announced in Budget 2014.

This is intended to encourage the resolution of remaining unfinished developments in the National Housing Development Survey 2013, and particularly those not likely to be resolved in the normal way by developers or owners because of the presence of specific financial barriers.

It will be particularly targeted to address the remaining unfinished developments with residents living in them and, in particular, any developments that local authorities identified, for the purposes of the Local Property Tax waiver, as being in a seriously problematic condition. It will help to address deficiencies in public infrastructure, such as roads, footpaths, public lighting and open spaces, unlocking the potential for developers to invest additional capital in finishing out the housing element of the development.

In addition we will continue to drive the process of Site Resolution Planning of unfinished developments by developers, landowners and their funders in finding the most appropriate uses for these developments. Some 553 resolutions were progressed in 2013 alone.

NATIONAL FRAMEWORK FOR HOUSING SUPPLY AND ANNUAL STATEMENT OF PROJECTED HOUSING REQUIREMENTS

1	We will put in place a National Framework for Housing Supply, ensuring a balanced approach in which the supply of housing is matched with projected demand, and in which emerging imbalances can be identified and rectified at an early stage. This will be placed on a statutory footing and will require the publication of an annual National Statement of Projected Housing Supply and Demand to be published each June.	
	Timeline	Q2 2014; Ongoing
	Responsible Body	DECLG; Local Authorities; CSO; DES; The Housing Agency; other stakeholders

HOUSING SUPPLY COORDINATION TASK FORCE FOR DUBLIN

2	We will establish a Housing Supply Coordination Task Force for Dublin with an immediate focus on addressing supply-related issues. It will work closely with industry and other parties, including those responsible for key infrastructure such as schools, to identify and address any obstacles to viable and appropriate development.	
	Timeline	Q2 2014; Ongoing
	Responsible Body	DECLG; Dublin Local Authorities; DES; The Housing Agency; other relevant agencies

AVAILABILITY OF QUALITY DATA

3	We will assess existing construction and property data sources for appropriateness including identifying any gaps and quality shortcomings and how they might be addressed.	
	Timeline	Q3 2014
	Responsible Body	DECLG; The Housing Agency; CSO

HOUSING MOBILITY

4	We will examine the key barriers to housing mobility and make recommendations to Government.	
	Timeline	Q2 2014
	Responsible Body	DECLG; D/Finance

PRIVATE RENTED SECTOR

5	We will develop a national policy towards professionalising the private rental sector, to include issues such as investment, standards and regulation.	
	Timeline	Q4 2014
	Responsible Body	DECLG; The Housing Agency

FAIR AND TRANSPARENT TENANCY DEPOSIT PROTECTION SCHEME

6	In line with our commitment in the Programme for Government, we will legislate for a fair and transparent tenancy deposit protection scheme.	
	Timeline	Q2 2014
	Responsible Body	DECLG

PRIVATE-RENTED AND COMMERCIAL PROPERTY

7	We will establish a working group and invite public comment on the feasibility and impact of setting minimum thermal efficiency performance standards in properties offered for rent or lease in the residential and commercial sectors.	
	Timeline	Q1 2015
	Responsible Body	DECLG; DCENR; SEAI

SOCIAL HOUSING

8	We will publish a Social Housing Strategy setting out a vision for the sector, and we will introduce legislation to regulate the Approved Housing Body sector.	
	Timeline	Q3 2014 and Ongoing
	Responsible Body	DECLG; Local Authorities; The Housing Agency

PART V OF THE PLANNING AND DEVELOPMENT ACT 2000

9	We will conclude our review of Part V requirements, ensuring that it is delivering as intended, and will bring forward any necessary legislative change on foot of the review.	
	Timeline	Q2 2014
	Responsible Body	DECLG; Local Authorities

HOMELESSNESS

10	The Homelessness Implementation Plan will be published in Q2 2014, and we will implement the key recommendations of the Homelessness Oversight Group's First Report in Q2 2016.	
	Timeline	Q2 2014 and Q4 2016
	Responsible Body	DECLG; DSP; HSE; Local Authorities

LEGACY ISSUES

11	We will continue to implement the Government Action Programme on Unfinished Housing Developments and specifically the Budget 2014 Special Resolution Fund.	
	Timeline	Q4 2014
	Responsible Body	DECLG; DSP; Local Authorities

3. Planning

Proper planning helps us to make the right strategic choices for the future of development in the country. It ensures that we are building the right things in the right place, and that everyone has a chance to contribute to shaping the built environment we share.

Planning also helps us to maximise the benefit we gain as a society from investment in public infrastructure, whether in transport, water or schools.

Across Ireland, effective planning has been at the heart of the rejuvenation of cities and towns and has identified investment and job creation opportunities through a place based and place making approach.

A fit for purpose, flexible, effective and proactive community led planning system is a vital support to a properly functioning construction and development sector and to the wider economy.

An absence of good planning and strategic thinking in past years has served Ireland and its citizens badly, and because of some poor past decision-making, we will be dealing with certain legacies for years to come. It is vitally important therefore, having learnt the lessons of what went wrong in the past, that we can be sure that they are applied in our planning and development laws and practices into the future.

We need to ensure local authorities are equipped to better engage with the development process, improving certainty around the scale and location of key development requirements and also around the infrastructural delivery side.

The goal is to secure a proactive approach to planning, in which planning authorities actively engage with land and property owners, Approved Housing Bodies, and infrastructure providers in securing agreed planning goals and outcomes.

A more engaging "active land management" approach is needed.

To set an overall national direction, the Minister for the Environment, Community and Local Government will shortly bring proposals to Government on a national planning framework. This will be an important statement of how we see the future economic, social and physical development of the country taking place.

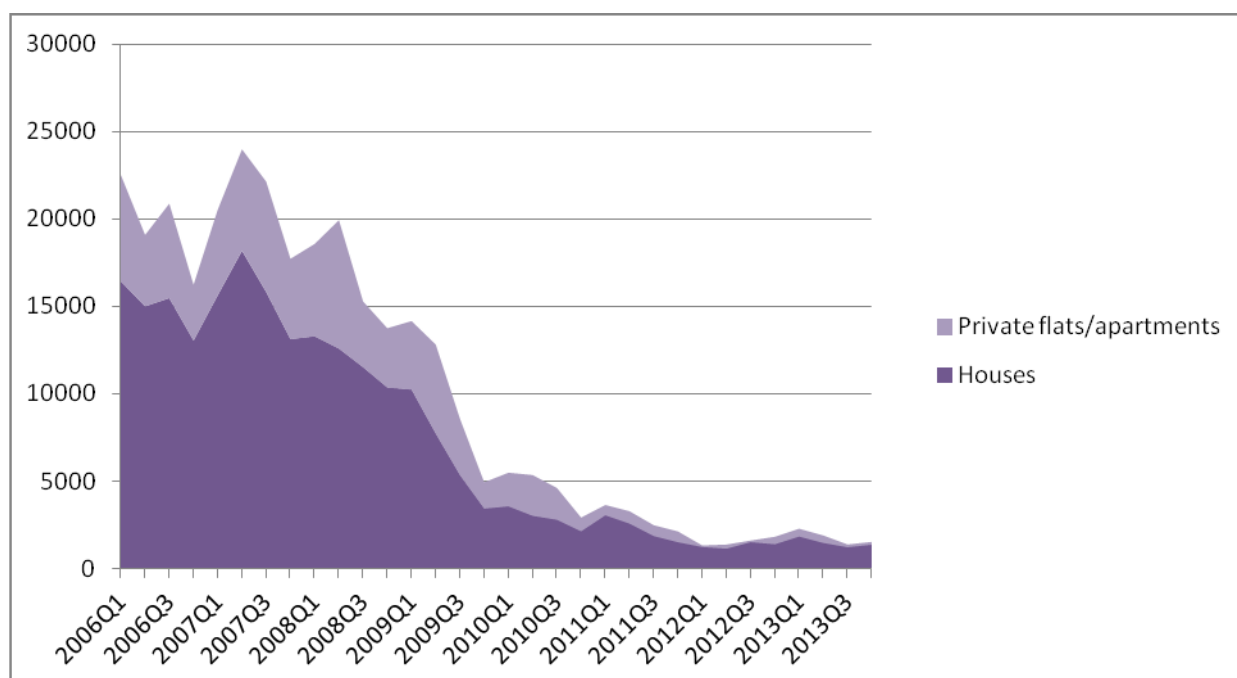
We will also shortly publish a general scheme of a Planning Bill, along with a new Policy Statement on Planning, to implement the planning recommendations of the Mahon Tribunal and other planning concerns, and to establish an independent planning regulator. The Office of Planning Regulation will provide for independent review of Local Authority plans, have investigative powers, and help to raise public awareness of the planning system and processes.

Together, a national planning framework, a Policy Statement on Planning and a new Planning Bill, will build on previous improvements to the planning process and ensure that, through proper planning appropriate development requirements are both identified and approved efficiently, ensuring both sustainable development and economic recovery.

We are also considering carefully whether there are proactive steps that could be taken in the immediate term to increase the level of construction, consistent with proper planning, to encourage economic activity and to reduce pressure for supply in some areas.

The Cabinet Committee on Economic Infrastructure will consider these matters as appropriate.

Units for which Permission was Granted (Number) by Type of Dwelling and Quarter



Source: CSO

Development Contribution Schemes

New development often requires infrastructural investment and that investment has to be paid for.

Development contributions have played, and will continue to play, an important role in enabling capital investment by local authorities in transport, community facilities, amenities and cultural facilities.

The changed economic circumstances of recent years have already been reflected in contribution rates. Reductions in capital and construction costs, as well as a general scaling back of capital investment requirements driven by more realistic assessments of future development needs, led to the issue of revised guidelines on development contributions in 2013.

These have delivered substantial reductions in development contributions, with Dublin local authorities, for example, reducing their contributions for new planning applications by 26%.

However, it has not thus far been possible for the holders of existing planning permissions to avail of these reduced contribution levies without revisiting the planning process.

We will therefore ensure that current arrangements are amended so that lower rates of contributions can have retrospective effect for existing planning permissions that have yet to be activated and will legislate to this effect.

Greater Certainty and Flexibility in Planning

The Government is committed to protecting the integrity of the planning system as a public good.

The current Regional Planning Guidelines that co-ordinate local authority plans will be replaced by more broadly based Regional Spatial and Economic Strategies from 2016. These will create an

opportunity for the local authorities and the key infrastructure providers and economic development agencies to co-ordinate their work in relation to identifying and progressing key development opportunities.

In the meantime however, we want to ensure that the planning process is appropriately flexible and adaptive in anticipating and addressing changing economic circumstances, while at the same time achieving strategic objectives.

To maximise the benefit that flows to the public from monies invested in capital intensive infrastructure – including transport – local authorities have tended to require higher densities in areas close to such infrastructure.

However, in current economic circumstances, in such locations greater flexibility may be warranted in the early stages of new larger-scale developments in order to ‘kick start’ a valuable project that might otherwise not be market-viable. This should only be possible where there is a commitment to achieving higher densities and sustainable development overall.

We believe that this approach should be actively considered and advanced by local authorities, especially in Dublin.

In current economic circumstances, the financial viability of higher density projects outside of city centre or mature high-value residential locations has become fragile at best. Where appropriate and in line with sustainable development into the future, flexibility around overall densities will be considered.

Similarly, there are existing planning permissions for developments – whether residential, commercial or industrial, that have become unviable due to developments in the market that nevertheless might with modification - for example to change the number of apartments vis-à-vis ‘own door’ houses in a given residential scheme - be able to proceed.

When such changes are contemplated, it is important that third parties, including other local residents, have the opportunity to have their voices heard. It would not, therefore, be appropriate for planning permissions to be changed without such an opportunity being available.

At present, a planning authority must make a decision on a planning application within two months of receipt, and An Bórd Pleanála has a statutory objective of deciding or disposing of appeals within 18 weeks (with a provision for a longer period if required, for example in the case where an oral hearing takes place).

We will rapidly examine and decide whether there is scope to provide a more streamlined process in certain cases, for example for ‘repeat’ or ‘change of house type’ applications – e.g. from houses to apartments - and will bring forward any proposed new arrangements in the new Planning Bill.

There are many areas of land zoned for housing on which planning permission has been secured, but on which no development has taken place. In some cases, this is because the developer is no longer operating or financially able to proceed.

However, there may also be cases where land with planning permission is being held in the hope of onward sale and speculative gain without there being any intention by the owner to develop. This is not in the wider public interest.

We will enable local authorities to introduce a ‘use it or lose it’ provision, making it possible for them to require applicants for housing developments of scale to indicate the development schedule for the specific housing project. Where the relevant project does not commence in line with the schedule, without reasonable justification, planning authorities will be empowered to apply measures, including reduction of the term of the permission, so as to expedite delivery of approved development schemes.

In addition, drawing on experience of the Strategic Infrastructure Act, we will ensure that planning authorities engage actively on proposed developments of scale, ensuring they enter into pre-planning discussions with developers in a timely manner where these are sought, detailing required documentation.

Uninhabitable Properties and Vacant Sites in Urban Areas

There is a shared public interest in ensuring the most efficient use of land, as a scarce resource, especially in urban areas.

In recognition of the importance, in particular, of the central areas of our historic cities, in Budget 2014 we extended the Living City Initiative, subject to EU approval, to encourage more people to refurbish existing buildings for residential or retail purposes.

This was intended not only to help stimulate activity in the construction sector, but also to improve the vibrancy of our cities and to overcome the problems arising from the existence of vacant rundown properties in urban areas.

We will also examine approaches to ensure the best economic use of properties and sites in urban areas.

In the first instance we will consider removing any incentive in existing arrangements for commercial rates to allowing a property to deteriorate.

Currently, an occupied commercial property is subject to commercial rates, and a habitable unoccupied property is subject to 50% of commercial rates. However, an uninhabitable unoccupied property, or a vacant development land, is not liable for rates at all.

This could offer an incentive to a developer or owner to render a property uninhabitable - for example by removing a stairs or lift - rather than developing it.

Furthermore, in the context of encouraging economic development, a strong case has been made for enabling local authorities to impose a levy on vacant sites in Dublin.

To support economic development in urban areas, we will examine the possibility for enabling a local authority, should it wish to do so, to adopt measures that incentivise the use and development of vacant sites.

In considering such a provision, we will seek to ensure that it does not lead to obstacles to future development and job creation.

Strategic Development Zones

Since the introduction of the Planning and Development Act 2000 it has been possible for the Government to create 'Special Development Zones' (SDZs) where development is of particular economic or social importance to the State.

Effective SDZs – for example in the Dublin Docklands area and Adamstown – can make an important contribution to economic recovery.

There have been concerns, however, that there are undue delays and rigidities built in to current arrangements that prevent the type of fast-track approach they are intended to achieve.

We will undertake a short focused review of existing arrangements, involving all relevant stakeholders, with a view to making any necessary improvements as quickly as possible.

POLICY STATEMENT ON PLANNING POLICY

12	We will bring proposals to Government on the development of a national planning framework and publish a policy statement on planning.	
	Timeline	Q2 2014
	Responsible Body	DECLG

PLANNING BILL

13	We will publish a general scheme of a Planning Bill to implement the planning provisions of the Mahon Tribunal, to enable the establishment of an independent Planning Regulator and to make provision for other planning-related measures identified in this Strategy.	
	Timeline	Q2 2014 and Ongoing
	Responsible Body	DECLG

DEVELOPMENT CONTRIBUTIONS

14	We will ensure that developers can avail of reduced development contributions for existing planning permissions that have yet to be activated and will legislate to this effect.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG

15	As fiscal circumstances improve we will relax restrictions on local authorities' use of development contribution funds in local authority possession to invest in essential infrastructure, in line with overall fiscal rules.	
	Timeline	Ongoing
	Responsible Body	D/Finance

IRISH WATER

16	Irish Water will submit a draft Connections Policy to the Commission for Energy Regulation for approval (involving public consultation) that will replace funding of water and waste capital infrastructure works through development contributions.	
	Timeline	Q2 2014
	Responsible Body	Irish Water and the Commission for Energy Regulation

REGIONAL ASSEMBLIES

17	We will establish new Regional Assemblies which will have responsibility for preparing new Regional Spatial and Economic Strategies, with input from key infrastructure and economic development agencies, replacing the previous Regional Planning Guidelines.	
	Timeline	Q4 2014
	Responsible Body	DECLG

FLEXIBILITY ON DENSITY TO SUPPORT ECONOMIC DEVELOPMENT

18	We will work with Dublin local authorities in supporting a ‘kick start’ initiative for prime development areas where extensive infrastructure investment has taken place. This will include flexibility around early phase densities in new larger-scale developments subject to the achievement of higher densities in later phases to underpin sustainable development.	
	Timeline	Q2 2014 and Ongoing
	Responsible Body	DECLG

ENHANCED AND STREAMLINED PLANNING AND APPEALS

19	We will examine the scope for more streamlined planning and appeal processes for the amendment of existing planning permissions and will provide for any new arrangements in the new Planning Bill.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG

ENSURING PLANNING PERMISSIONS ARE ACTIVATED

20	We will enable local authorities to require applicants for planning permission for housing projects of scale to indicate the development schedule and where the development is not commenced in line with the schedule, without reasonable justification, to modify the duration of the permission.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG

IMPROVING PLANNING ENGAGEMENT

21	We will introduce and develop an enhanced customer service approach for all participants at all stages in the planning process, including by: <ul style="list-style-type: none"> • Providing for greater emphasis on e-planning and acceptance of e-fees; • Developing new shared service approaches in relation to specialist skills requirements; and • Drawing on experience of the Strategic Infrastructure Act, ensuring that planning authorities engage actively on proposed developments of scale and that they enter into pre-planning discussions in a timely manner where these are sought, detailing required documentation. 	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG; Local Authorities

PROPERTIES AND VACANT SITES IN URBAN AREAS

22	We will consider removing incentives that existing arrangements for commercial rates may offer to owners to keep or render properties empty.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG; DPER; Local Authorities

23	We will examine the possibility of enabling local authorities, should they wish to do so, to adopt new measures to incentivise the use and development of vacant sites.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG

STRATEGIC DEVELOPMENT ZONES

24	We will undertake a short review of existing arrangements for Strategic Development Zones with input from stakeholders, and will make any necessary improvements as quickly as possible. This will include exploring ways to streamline processes and considering allowing the use of the provisions of the Strategic Investment Act in parallel with a SDZ.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	DECLG; NAMA, Irish Water, New Era and other interested parties

REGISTRY OF LAND OPTIONS		
25	Drawing on international best practice we will legislate for and introduce a registry of options on land for development purposes to ensure market transparency.	
	Timeline	Q2 2014 and Ongoing 2014
	Responsible Body	Property Registration Authority; DJ&E; DECLG; OPW

4. Commercial Sector

The availability of a good supply of commercial premises is a key requirement for economic progress. Lack of sufficient supply has the potential to damage our competitiveness, drive up rents, and could persuade internationally mobile companies to locate in other countries.

We need to ensure the removal of any blockages preventing the necessary development of office, industrial, manufacturing and logistics facilities taking place. The planning authorities will continue to address the critical infrastructure deficit issues required to deliver necessary commercial facilities.

The private non-residential building sector has seen the value of construction output collapse from unprecedented levels reached during the boom years. Issues that have hindered development in the commercial property market include an overhang of stock, access to finance, and high levels of indebtedness amongst developers.

As a consequence, there has been a serious lack of new anticipatory development over the past 4-5 years, including advance development of high quality office solutions that could help secure future FDI investments of scale in Dublin.

However, there are signs of market recovery and increasing confidence associated with the FDI pipeline.

Foreign Direct Investment

The IDA has identified locations where there are no suitable quality property solutions to meet the needs of FDI investors. In order to boost regional development and win new business, the IDA will influence the private sector, where appropriate, to fund, construct and deliver the required facilities to win investments for the regions. However, in many urban locations, the gap will need to be closed and in this context, IDA will work with bodies such as the Ireland Strategic Investment Fund (ISIF). To meet the immediate needs of FDI, IDA will build new advanced manufacturing facilities in Waterford and Athlone, and an office facility in Letterkenny.

Solutions will require public and private sector co-operation and initiatives. IDA Ireland is continuing to engage with the private sector, where achievable, to ensure an adequate supply of high quality property solutions to meet future enterprise investment needs. The Government will continue to explore opportunities for alternative co-financing options, including through targeted use of the ISIF.

Ireland Strategic Investment Fund

The National Pensions Reserve Fund (NPRF) is to become the Ireland Strategic Investment Fund (ISIF) with a mandate to invest on a commercial basis to support economic activity and employment in Ireland. Legislation giving effect to this change is expected to be enacted before the 2014 summer recess. In parallel, a business plan for the ISIF is being developed for approval by the new NTMA Board, and this business plan is expected to be finalised over the coming months.

The ISIF may have a very important role to play in the Commercial Sector and, in particular, in FDI related developments. During the process to develop an economic impact framework for the ISIF, this has been identified by the IDA as the biggest need from its perspective. This is a real gap, which the ISIF may be well positioned to fill, particularly if equity investment is required.

NAMA

For its part NAMA will continue to collaborate with the IDA in order to identify suitable property held as security for NAMA loans and facilitate engagement with NAMA debtors with a view to developing, selling or leasing such property in support of FDI projects.

Subject to the designation of the area as a commercially workable Strategic Development Zone, a particular focus of attention will be the Docklands area of Dublin. This area is expected to require significant new development over the medium term, particularly of commercial office space to accommodate the continued expansion of the financial services sector and the creation of new business and technology hubs.

NAMA's ongoing collaboration with the IDA in providing suitable commercial property has facilitated decisions by a range of companies to invest in Dublin and elsewhere, creating the potential for these companies to double their Irish workforce over time.

NAMA will continue to facilitate joint venture projects (involving its debtors or properties held as security for its loans) together with suitable counterparties who can provide financial, operational or other resources in support of such projects, with the ultimate objective of securing new investment and promoting employment opportunities.

Availability of Data

The commercial sector has traditionally suffered from a lack of reliable data. We have seen improvements in this area, notably with the publication of the Commercial Leases Database by the Property Services Regulatory Authority in October 2013. This database makes the relevant details of letting agreements and rent reviews in the commercial property market publically available for the first time.

We will explore ways to further enhance the availability of data on commercial properties, including by giving consideration to the preparation of a census of commercial property to be conducted by local authorities.

INFRASTRUCTURE CAPACITY ISSUES

26	Planning authorities will identify and address crucial infrastructural capacity issues required to deliver development plan objectives.	
	Timeline	Q3 2014
	Responsible Body	Local Authorities; Irish Water

FOREIGN DIRECT INVESTMENT

27	IDA will build new advanced manufacturing facilities in Waterford and Athlone, and office space in Letterkenny. The organisation is also monitoring the available property stock in other urban locations, where the private sector is not active.	
	Timeline	Q4 2014
	Responsible Body	IDA

28	NAMA will continue to facilitate engagement between its debtors and the IDA in order to increase the availability of property suitable for FDI needs, specifically focusing on the availability of office property in Dublin and, where commercially viable, providing development funding for new stock.	
	Timeline	Ongoing
	Responsible Body	NAMA; IDA

AVAILABILITY OF DATA

29	We will explore ways to further enhance the availability of data in the commercial sector, including by giving consideration to the preparation of a census of commercial property to be conducted by local authorities.	
	Timeline	Q4 2014
	Responsible Body	DECLG; CSO; Local Authorities; IDA

5. Energy Efficiency and Sustainability

Energy efficiency is an important aspect of the construction sector, with a vibrant retrofit industry providing multiple benefits spanning the climate, energy, health, local government and education sectors. In addition, retrofit works have been shown to be particularly job intensive. A focus on energy retrofitting could therefore have a significant impact on job creation.

Commercial

The Large Industry Energy Network (LIEN) and the Energy Agreements Programme is a well-established networking and information programme for large industrial energy users run by the Sustainable Energy Authority of Ireland (SEAI). Now in operation for over 16 years, it engages over 160 of the largest energy users in ongoing relationships, including site visits, workshops and seminars, special working groups and networking clusters, and annual energy performance reporting. LIEN members share information on energy-saving technologies and techniques to maximise savings and maintain competitiveness.

Energy spend across the LIEN is approximately €800 million and accounts for in the region of 60% of all industrial energy usage.

The Energy Agreements Programme supports large industry to implement an energy-management system through the new ISO 50001 standard. Consistent annual saving across the Network averages between 2% and 3% per annum, accounting for annual energy savings of €16 million and above. Cumulative savings of in excess of 30% have been achieved to date.

Competitiveness is a key concern of Government and industry alike. The SEAI's focus continues to be on promoting energy efficiency and associated cost reduction programmes throughout small and large business sectors. Over 200 SMEs have participated in a wide range of activities including energy assessments, small business training, EnergyMap training and a number of networking events.

The recently established Energy Efficiency Fund will kick-start the type of investment necessary to support the clear opportunity that exists in the public and commercial sectors, and will have €35 million in Exchequer funding to allow competitive proposals for energy efficiency projects to be financed. The aim is to attract matching funding from the private sector, such that the overall amount available for investment is at least greater than €70 million.

We have published the National Energy Services Framework to help develop the energy efficiency market in the non-domestic sector throughout Ireland. This Framework sets out the roadmap through which energy efficiency projects and specifically Energy Performance Contracting process are undertaken, both in the public and private sector.

A key objective behind the development of the Framework is to address more complex, and potentially deeper, retrofits than is possible using existing approaches to procurement. This is necessary given our 2020 energy and climate targets.

In order to demonstrate that the national framework is robust and has the capacity to deliver at scale, we have identified a suite of Exemplar projects that will test the Framework, while demonstrating an ability to be replicated elsewhere. The first tranche of exemplar energy efficiency projects was launched in June 2013. Collectively, the exemplar projects will see investment of up to €55m in energy saving measures, resulting in annual savings of €7m. There are currently 21

exemplar projects (11 public and 10 private sector). Regular workshops monitor progress and a total of €480,000 in technical assistance has so far been committed across these projects.

We believe the phased introduction of improved thermal efficiency standards in the commercial sector, linked to the Building Energy Rating (BER) system and mirroring those already in place for the public sector³, would stimulate additional renovation activity over time, reduce energy use and decrease emissions from the building sector – not to mention meeting compliance with Article 19 of the Energy Efficiency Directive (2012/27/EU) on removing split incentives.

Residential

Since its launch in 2009, the Better Energy Programme has provided Exchequer support to enable the energy efficiency retrofitting of over 250,000 homes, realising annual energy savings to homeowners of over €76 million. This year will see a further €57 million spent by the programme – in the process supporting 3,100 jobs. Importantly, over 100,000 of the homes that have received Exchequer supports have been low-income homes at risk of energy poverty.

Energy efficiency remains the best way to offset energy costs, while making homes more comfortable to live in. We will continue to support the ongoing improvement of homes across Ireland through the Better Energy Programme.

Existing Irish building stock generally does not perform well in terms of energy efficiency, with 18% of emissions in the non-traded sector coming from buildings. One way of improving the thermal efficiency performance of existing housing is to explore whether it is feasible to introduce a consequential improvement requirement on all homes being substantially renovated. With the publication of *Code of practice – Methodology for the energy efficient retrofit of existing domestic dwellings* (SR 54) by the National Standards Authority of Ireland, we have a world-leading reference document for upgrading Irish buildings. A consequential improvements requirement would ensure that homes are improved at an appropriate point in their lifecycle, while reducing the additional cost of doing so for homeowners.

Sustainability and Conservation

In line with the Government's sustainable development policy "Our Sustainable Future", launched in June 2012, and the objectives of Europe 2020, there is a need to support regeneration and the reuse of our existing built environment assets and to protect Ireland's built heritage.

A fund of €5 million under the Government's Stimulus Capital Programme, is being made available in 2014 to local authorities to fund a new scheme developed by the Department of Arts, Heritage and the Gaeltacht – the Built Heritage Jobs Leverage Scheme. This scheme is being developed to assist with the repair and conservation of structures that are protected under the Planning and Development Act 2000. This scheme seeks to leverage private capital for investment in a significant number of labour-intensive, small-scale repair and conservation projects across the country and support the employment of skilled and experienced conservation professionals, craftspeople and tradespersons.

The Historic Towns Initiative (HTI) is a joint undertaking by the Department of Arts, Heritage and the Gaeltacht, the Heritage Council and Fáilte Ireland based on a renewal of the existing Heritage Towns designation to promote the heritage-led regeneration of Ireland's historic towns. A pilot phase of the HTI commenced in February 2013 in three towns, Listowel, Westport and Youghal. The Historic

³ Regulation 15, S.I. No. 542/2009 European Communities (Energy End-Use Efficiency and Energy Services) Regulations 2009, refers.

Towns Initiative Framework Manual which sets out the steps to follow when undertaking a heritage-led regeneration project of a town was also launched in February 2013 and the pilot phase is due to conclude in May 2014. This initiative is complemented by the Living City Initiative which aims to seek to promote the regeneration of urban historic areas by focusing on encouraging people back to the centre of Irish cities to live in historic buildings and encouraging the regeneration of the retail heartland of central business districts. This initiative will assist in preserving existing heritage assets, stimulate heritage-led regeneration and add to the long term sustainable development of these locations.

SUPPORTING ENERGY EFFICIENCY - COMMERCIAL AND PUBLIC SECTORS

30	Review the National Energy Services Framework and update as required.	
	Timeline	Q4 2014
	Responsible Body	DCENR
31	We will continue to support the Exemplar Projects on energy efficiency as they move through the Framework procurement steps to progress the ambition of transforming Ireland into one of the most energy efficient economies in Europe.	
	Timeline	Ongoing
	Responsible Body	DCENR
32	Publish report on public sector energy usage.	
	Timeline	Q4 2014
	Responsible Body	SEAI

SUPPORTING ENERGY EFFICIENCY - RESIDENTIAL

33	We will oversee implementation by local authorities of a programme of works to improve the quality and enhance the energy efficiency of the existing local authorities housing stock.	
	Timeline	Q4 2014 and Ongoing
	Responsible Body	DECLG; Local Authorities with relevant Departments and Agencies
34	Provide €57 million in Exchequer supports to further stimulate energy saving activity in the residential sector and implement a publicity campaign so that those who can avail of this are aware of the supports.	
	Timeline	Ongoing
	Responsible Body	DCENR

35	Working with key stakeholders we will examine the feasibility and impact of introducing consequential improvement regulations that would require homeowners undertaking major renovation work to improve the thermal efficiency of their homes.	
	Timeline	Q2 2015
	Responsible Body	DECLG; DCENR; SEAI

6. Infrastructure and Public Investment

An exchequer capital programme amounting to €17 billion was agreed by the Government for the 5 year period 2012-2016. This €17 billion of Exchequer investment is directed at addressing critical infrastructure investment gaps in order to aid economic recovery, social cohesion and environmental sustainability. The sectors prioritised for investment in the Framework include education, health, jobs and enterprise. In 2014, the mid-way point of the Framework, the State will invest some €3.3 billion through the Exchequer. A further €6.5 billion will be spent between 2015 and 2016.

The level of investment provided in the period to 2016 took account of the fact that most of the economy's key infrastructural deficits had been addressed through a massive capital investment of more than €70 billion over the preceding decade. The focus of the investment, therefore, was on creating the framework conditions in which the enterprise sector could thrive. Investment, for example, in the transport network, in water services and in science and innovation will increase productivity in the economy and deliver long-run economic benefits. This is the infrastructure that is needed for the future.

Delivery of infrastructure funded by the exchequer and the PPP programme to improve economic performance can also result in valuable employment benefits, including for those currently on the Live Register.

The extent of this benefit depends in part on how particular expenditure is invested - different types of public construction projects have different levels of labour intensity. For example, smaller scale projects such as school building and repair, or smaller local and regional road-works, tend to be more labour intensive than major national infrastructural projects. Importantly, much of the capital programme is geared towards these types of smaller, more labour intensive projects.

Substantial progress has been made to date with the schools PPP bundles, and the Department of Education and Skills is exploring ways to enhance and extend the provision of school buildings using a variety of approaches.

Job creation statistics gathered during the delivery of School Bundle 3 PPP project have been used to develop metrics to inform the development of Social Clause conditions. These clauses are discussed later in the chapter.

Significant investment is also being directed towards enterprise supports which have been shown to have the highest direct employment impact.

The creation of Irish Water forms part of the Government's reform programme to create a secure, efficient and sustainable water supply. In addition to the national metering programme – an ambitious infrastructural project supporting up to 1,600 local jobs – there is a significant opportunity presented by the establishment of Irish Water to support capital investment in our water and waste water infrastructure to meet our needs for now and into the future.

Stimulus

Since the capital plan was launched in 2011, the Government has been able to announce a number of increases to its infrastructure investment through the introduction of a new PPP pipeline and the use of the proceeds from the State asset and lottery licence transactions.

This additional investment is expected to support significant numbers of jobs across the country. The previous analysis of each sector indicates that the investment in the PPP pipeline may support in the

region of 13,000 direct jobs and many more indirect jobs. In addition to this, it is envisaged that the additional Exchequer funding of €150 million announced in June 2013 can support up to 3,000 jobs.

These initiatives will of course also create much needed social and economic infrastructure and aid economic recovery. The Exchequer projects, in particular, involve mostly smaller scale capital works which are known to be labour intensive.

The public capital investment framework is currently being reviewed in parallel with the Comprehensive Review of Expenditure. Following this, a new five year capital envelope will be set. The review will seek to ensure that the investment framework remains consistent with the priorities of Government including supporting employment creation.

Major Capital Projects

We are committed to ensuring that projects agreed by Government are delivered in a timely manner. The Department of Public Expenditure and Reform will report on major capital projects and their stage of development. We will ensure that Government Departments and Agencies work with local authorities and other stakeholders to deliver major projects in a timely manner while ensuring appropriate engagement with key stakeholders and local communities.

Social Clauses

The Department of Public Expenditure and Reform, in conjunction with the National Development Finance Agency (NDFA), has been working on the development of conditions of contract governing the requirements for apprentices and the long-term unemployed, so-called Social Clauses. This is being done in line with EU legislation governing procurement, and a pilot scheme to test compliance with the legislation, and more importantly to maximise impact, has been rolled out for the schools programme devolved to the NDFA. The intention is that results from the pilot would inform more wider application where appropriate and in particular on the new PPP programme, in order to help reduce the level of the long-term unemployed across the country and to provide training opportunities for the youth unemployed.

Three contracts have been awarded in the pilot and work has commenced on the first signed.

The Contractor has up to three months from the beginning of work on site to report on compliance and numbers. Therefore it is expected that there will be reasonably clear indications as to the performance of the clause on the first contract by June 2014.

It is important that there should be mechanisms to evaluate these measures and to provide independent verification that those engaged under social clauses meet the fundamental requirements. The Office of Government Procurement is engaged with the NDFA and the Department of Social Protection on developing such suitable arrangements.

Social clauses are also being used in the enabling works on the Grangegorman site complex given its importance as an urban regeneration project with significant local impact. In the last quarter of 2013, the Grangegorman Development Agency awarded four contracts with a combined value of €40m. To date, there are 247 persons employed on the site of whom 33, or 13%, are from Dublin 1 or Dublin 7.

A number of social clauses have also been included in the water metering contracts. The employees of any managing contractor (including employees in its supply chain) must include:

- 10% of employees of small enterprises (companies with fewer than 50 employees and annual turnover not exceeding €25m and/or a balance sheet not exceeding €25m);

- 10% of employees to be people recruited from the unemployment register; and
- 5% of employees to be apprentices, graduates or school leavers.

There are currently approximately 1,150 people employed on the domestic metering programme, with over 60% of these workers either working in a local SME, from the Live Register, or a school leaver, apprentice or graduate.

Public Works Contract

A review of the public works contract is underway. Formal engagement with stakeholders commenced in late 2013 with three stages in the review:

- identification of performance issues, including data gathering;
- recommendations to Government of any changes necessary; and
- the incorporation of any changes into the contracts.

We will ensure this review is completed by end of Q2 2014 and that proposals are brought to Government in a timely manner to implement any necessary changes arising from this review.

Flooding

The OPW has developed a Catchment Flood Risk Assessment and Management (CFRAM) Programme, which lies at the core of the assessment of flood risk and the long-term planning of the flood risk management measures throughout the country. Detailed flood mapping of Ireland's main river systems, produced under the CFRAM Programme, will be completed this year. The programme is focused on 300 areas of potentially significant risk. Separately the OPW has been tasked with reporting to Government on options for flood forecasting and flood warning.

The EIB will be available to help to mobilise financial resources in order to contribute to reconstruction efforts and to support longer term coastal defence and flood risk management programmes.

Following consideration of a report on the severe weather that affected Ireland from 13 December 2013 to 6 January 2014, the Government announced a decision to make a sum of up to €70m available for a programme of repair and remediation works following storm and flooding damage. This includes works on roads and other transport infrastructure, coastal protection and flood defence, and local authority and community infrastructure.

Farm Investment

We will provide for a major new on-farm investment support measure in the Rural Development Programme (RDP) 2014-2020 to be submitted to the European Commission by mid-year. This public support will leverage substantial new investment activity (e.g. in slurry storage, animal housing and equipment) in rural areas and will support the "smart, green growth" objectives of Food Harvest 2020. The tentative funding allocation for this measure is over €290m which would leverage investment of over €725m; the scope to further enhance this measure over the lifetime of the RDP is currently under consideration.

PUBLIC CAPITAL PROGRAMME

36	Develop and publish investment plans for 2015-2019.	
	Timeline	Q4 2014
	Responsible Body	DPER
37	Explore mechanisms for private financing and greater use of Public Private Partnership models for infrastructure procurement while continuing to meet VfM criteria, and report quarterly to the Cabinet Committee on Economic Infrastructure.	
	Timeline	Ongoing
	Responsible Body	DPER; D/Finance

MAJOR CAPITAL PROJECTS

38	Provide a report to the Cabinet Committee on Economic Infrastructure on a quarterly basis on key infrastructural projects, provided by Departments, including their status, and put in place a mechanism for publishing the information by the end of 2014.	
	Timeline	Ongoing
	Responsible Body	DPER

SOCIAL CLAUSES

39	The Government is committed to the use of social clauses and as a priority will extend the use of social clauses in public works contracts and will keep their operation under review to ensure their on-going effectiveness.	
	Timeline	Ongoing
	Responsible Body	DPER and Procuring Authorities
40	Through Pathways to Work the Department of Social Protection will report on the success of social clause provisions with a view to supporting the implementation of social clauses where appropriate.	
	Timeline	Q3 2014
	Responsible Body	DSP; DPER; DES; NDFA

PUBLIC WORKS CONTRACT

41	Complete a review of public works contracts and arising from the review bring proposals to Government and implement any agreed changes.	
	Timeline	Q2 2014 and Q3 2014
	Responsible Body	DPER; Office of Government Procurement

INFRASTRUCTURE INVESTMENT AND DELIVERY PROGRAMME

42	The national planning framework and the proposed Regional Spatial and Economic Strategies will be developed to include a robust infrastructure investment and delivery programme linked to the public spending review cycles of the Department of Public Expenditure and Reform and the investment programmes of all relevant infrastructure agencies including, inter alia, Irish Water, National Transport Authority, National Roads Authority, ESB, Bord Gáis, Eirgrid, and the Departments of Education and Skills and Health.	
	Timeline	Q4 2014
	Responsible Body	DPER; DECLG; Local Authority

FARM INVESTMENT

43	We will provide for a major new on-farm investment support measure in the Rural Development Programme 2014-2020 to be submitted to the European Commission by mid-year.	
	Timeline	Q2 2014
	Responsible Body	DAFM

7. Financing Growth

A functioning construction sector and property market cannot exist without a ready and appropriate supply of financing.

The reality of recent years - through the linked crashes in the banks and in the construction sector – is that securing finance has become a constraint on otherwise viable and sustainable development projects.

It is recognised that there has been limited appetite to engage in property development. Capacity in the sector has been badly damaged through the crisis. Confidence in making a profit in this sector remains low.

Our efforts to deal with wider issues affecting the sector in this strategy will help to stimulate developer and banking confidence. It is clear that funding must be made available to meet demand and to grow as demand grows.

Credit specific impediments need to be identified and addressed while maintaining strong regulatory practices. Supporting the availability of credit alone will not generate results unless the demand for houses can be met by increased supply. This will only come when confidence in the sector re-emerges and where a holistic approach to tackling any barriers is taken.

The rebuilding of the domestic banking sector continues, and as part of that process, we will engage with new entrants to the market and require greater transparency from existing market participants. In addition, NAMA and the ISIF can potentially play an important role in the development of the construction sector.

The availability of sufficient quantities of credit to support renewed activity in the sector requires:

- Viable development proposals from promoters;
- Evidence of proposed supply matching prospective purchasers' expectations;
- An adequate level of equity available at the level of the developers;
- Sufficient return to meet the level of risk being undertaken;
- An appropriate risk appetite by the financial institutions and other potential financial providers; and
- Appropriate and transparent lending policies and applicable processes by banks.

Conditions under which borrowers can secure mortgage finance have tightened considerably. In conjunction with ensuring that mortgage lending decisions are undertaken on a prudential basis by financial institutions, we need to see an appropriate and sustainable supply of mortgage lending to support the market.

We are acutely conscious of the origins of some of the problems we are now seeking to address – especially the role that reckless lending played in inflating the property bubble and the all too real difficulties many of our citizens continue to face in supporting boom-time mortgages.

We are utterly determined that there can be no return to the catastrophic practices that wreaked such havoc on the country and on people's lives.

However, we do need to ensure that the conditions necessary to facilitate recovery in the construction sector, and the building of the infrastructure the country needs to secure its future well-being, are in place.

Development Finance

It would be wholly wrong to encourage an inappropriate risk-taking approach to development lending, as characterised the worst years of the boom; but an overly cautious and risk-averse approach is also economically damaging.

We will therefore work with the banks to ensure an appropriate balance is being struck.

We will engage with the banks, NAMA and other interested funding providers to ensure the availability of sufficient development finance to support a sustainable construction sector.

In particular, a High Level Working Group chaired by the Department of Finance will be established to explore the issue of sustainable bank financing for the construction sector. An interim report will be brought by this Working Group to the Cabinet Committee on Mortgage Arrears and Credit Availability by Quarter 2, which:

- Establishes current levels of development finance provision;
- Identifies obstacles to increasing development finance provision, and options to address them; and
- Explores how best to facilitate the resolution of disputes over the availability and terms of development finance.

The Committee will receive updates and discuss the availability of finance on a quarterly basis, and will, if necessary, determine further steps that need to be taken to ensure a properly functioning market.

In seeking to reinvigorate the construction sector, it is important to have equity in the project financing mix. Therefore, this Working Group will also examine whether the gap between the amount of development finance being offered by banks, and the amount required to execute projects is appropriate, and whether there are steps that can be taken to address this gap. For example, if a developer can secure only two-thirds of what is required for a project, the risk is that the project, however economically viable and necessary, will not go ahead.

The Working Group will explore what options may exist to help to support the availability of complementary sources of financing, e.g. mezzanine finance, on viable terms and facilitate the provision of financing by specialist funds and NAMA (with regard to the property it holds as security for its loans); and the scope for attracting more foreign capital into the development finance area. To the extent that there are financing gaps which can be filled on a commercial basis, the ISIF will consider addressing such gaps subject to its overall investment mandate.

NAMA

NAMA will continue to provide new advances to complete development property held as security for its loans, or to commence new projects on land it holds as security for loans. NAMA has already advanced €500m towards such developments and approved an additional €500m, making a total commitment of €1 billion to date. It will advance an additional €1.5 billion towards Irish development projects over the next three years, making total advances of €2.5 billion. These advances will continue to be provided on a commercial basis and will target sectors where supply shortages are most acute.

NAMA will facilitate the construction of up to 4,500 new houses and apartments in Dublin over this period, in addition to office developments that support FDI needs and some related retail development, all subject to commercial viability. Over the next five years or so, NAMA has identified the potential for the land and property to which it is exposed to yield up to 22,500 units – both

houses and apartments. NAMA will facilitate significant development in the Dublin Docklands and other main urban centres. The approval and drawdown of funds towards the Docklands will be predicated on the delivery of, amongst other things, a commercially workable Strategic Development Zone for the Docklands.

NAMA will continue to be guided by clear objectives to obtain the best achievable financial return for the State, including the generation of transactions which contribute to the renewal of sustainable activity in the property market and to the social and economic development of the State, while also pursuing its clear commercial objectives.

In particular, in 2014, NAMA will continue to focus on progressing development projects and advancing significant funds to enhance and complete commercial and residential projects. This includes the completion of properties which are currently under development and the development of land in anticipation of future supply shortages and growing demand.

Through its deployment of working capital, NAMA is directly supporting 15,000 jobs in Ireland in trading businesses linked to its loans in the property, hotel and leisure, retail, healthcare, manufacturing and agriculture sectors. NAMA will continue to provide such support in line with the on-going management of its portfolio.

Where the development of property held as security for NAMA loans is dependent on significant new infrastructure, such as the provision of water and waste water facilities to the Strategic Development Zone in the Dublin Docklands, NAMA will explore options to support the funding of such infrastructure, subject to commercial viability.

European funding

We will increase our engagement with the European Investment Banks (EIB) and European Investment Fund (EIF) in developing and implementing mechanisms designed to maximise the provision of financing to SMEs, including in the construction sector.

There were almost €1.2 billion worth of EIB project signatures and loan approvals in Ireland in 2013, including signature of the N11/N7 motorway PPP for €72m and approval of the Dublin Cross City Luas Project for €150m. This represents an increase of just over one-fifth on 2012 levels, which were, in turn, up significantly on the previous year.

The numbers of projects also increased compared to 2012, and covered a wider range of projects in numerous sectors - energy, education, infrastructure, PPPs, SME Financing, Corporate and EIF Development Capital Fund.

However, we continue to see room for stronger EIB support, for example in the areas of SME access to finance and flood works, and this will remain a top priority for us over the period ahead.

The Investment Plan agreed by the European Council in June 2013 was designed to mobilise the €10 billion increase in the EIB's capital base. This will support a 40% increase in its lending capacity for 2013-2015, bringing annual EIB lending volumes to between €65 and €70 billion.

Construction Sector Capacity

The capacity of the construction sector has been badly damaged during the collapse. Construction contractors can face a number of constraints that can impact on a contractor's ability to finance projects. These can include withdrawal of overdraft facilities, lack of credit availability from builder's suppliers, and the impact of the commencement of the Construction Contracts Act.

There is a need for stronger Irish construction companies and in particular for financially viable companies capable of taking a project from initiation to completion. Part of the solution to achieving this goal may involve viable companies receiving an equity injection. There may be an opportunity for the ISIF to invest in Irish construction companies that are seeking to scale up and expand into international markets.

The availability and cost of performance bonds remains a constraint on the sector. We will work with industry to develop a solution involving existing banks or new players to provide greater levels of performance bonds.

The Department of Public Expenditure and Reform has already issued Circular 07/13 in relation to reducing the level of bonds required on public works contracts.

As part of the work with the EIB and NPRF on trade finance, we will look at, amongst other things, the issue of accessing performance bonds, including in the construction sector.

Mortgage Financing

The market will not provide houses and apartments unless it believes there are sufficient numbers of people in a position to buy them.

In the abnormal housing market in Ireland in recent years, we have seen lending volumes decline dramatically. The banks are highlighting the lack of supply of houses in particular urban areas as a contributing factor for the lack of drawdown of approved mortgage facilities. We have also seen cash transactions dominating the small number of sales taking place.

The significant numbers of cash buyers are an indication of a dysfunctional housing market. Cash buyers continue to play a strong role in the residential property market in Ireland, according to many reports accounting for approximately half of the market in 2013, potentially crowding out mortgage buyers. A sign of a return to a proper functioning residential market will be a significant reduction in the proportion of cash buyers.

We want to see a return to sustainable levels of mortgage lending, as part of a healthy market. This means mortgage products being available to potential purchasers with an ability to support repayments. Mortgage lending decisions must be undertaken on a sustainable and prudential basis by financial institutions and conform fully to regulatory requirements, both in relation to the financial institution itself, and also with regard to the safeguarding of the borrower's interests.

Mortgage figures for 2013 show that the number of loans drawn down fell on an annual basis. In 2012, 15,881 mortgages were issued to the value of €2.636 billion. In comparison, in 2013 some 14,985 mortgages were issued to the value of €2.495 billion.

Residential Mortgage Loans

	First-time Buyer Purchaser	Mover Purchaser	Residential Investment Letting	Re-mortgage	Top-up	Total Drawdowns
2013	7,535	5,340	597	292	1,221	14,985
2012	8,648	4,921	591	455	1,266	15,881
2011	6,300	4,241	509	1,137	2,005	14,273
2010	10,619	6,533	1,161	2,722	6,631	27,666
2009	12,684	9,395	3,018	5,774	14,947	45,818
2008	19,946	20,444	13,226	21,374	35,315	110,305
2007	30,469	32,864	20,861	25,937	47,967	158,098
2006	37,064	45,585	28,141	26,565	66,598	203,953
2005	37,879	46,760	25,856	25,944	64,821	201,260

Source: IBF/PwC Mortgage Market Profile

A key issue is to ensure that there will be sufficient credit available when the supply of houses is increased. There will be an ongoing role to monitor availability of credit in the retail sector.

We will work with mortgage providers and the Central Bank of Ireland to ensure transparency around mortgage lending, including volumes of lending; greater clarity on the application and approval process; loan-to-value ratios; and loan to disposable income ratios.

We will also study other international models of mortgage financing, with a view to learning from best practice. A report on this, along with any recommendations, will be brought to the Cabinet Committee on Mortgage Arrears and Credit Availability.

Other countries, such as the UK and Canada, have supported the development of “mortgage insurance” markets to support bank mortgage lending, particularly to First Time Buyers. Mortgage insurance allows banks to share the risk of mortgage lending, either with the public sector (the UK’s “Help to Buy Scheme”) or with private sector insurance companies (as in Canada), with the aim of increasing banking lending in general or to target groups.

Mortgage insurance can also be used as an incentive to encourage banks to adopt standardised, prudent lending practices (income to loan ratios, high quality documentation etc.), opening up new and lower cost funding sources for the banks. The conditions of mortgage insurance can be changed in order to help avoid credit-fuelled property booms and busts.

Consideration will be given to the concept of a mortgage insurance scheme and how it might benefit new housing completions in the Irish market. The objective of any scheme would be to ensure adequate availability of mortgage finance on affordable terms for new completions, particularly for First Time Buyers, as the economy recovers, and in doing so to provide the certainty needed to support greater levels of investment in new housing.

The introduction of any such measure will be contingent upon the preparation of an Economic Impact Analysis (EIA) for consideration by the Minister for Finance. This exercise will be completed by the end of July. The EIA will assess the design parameters under which such a measure might best operate in the context of the Irish housing market e.g. limits on time, restricted to first time

buyers/owner occupiers, focussed on new housing, the appropriateness of a price cap, regional/geographic restrictions etc. The EIA will draw lessons from mortgage insurance initiatives undertaken in other countries, including in the US, UK, and elsewhere in Europe.

Mortgage Arrears

Since taking office, the Government has put in place a comprehensive strategy to address the problem of mortgage arrears built around the following pillars:

- Innovative personal insolvency reform
- Comprehensive advice and guidance
- A mortgage to rent scheme
- Mortgage resolution strategies
- Associated targets for the banks

Implementation of this strategy is now of prime importance. In that regard, the new personal insolvency system and the full implementation of the Central Bank Mortgage Arrears Resolution Targets - or MART - are fundamental.

It is no longer acceptable for banks to apply short term solutions to cases where there has been a fundamental and long term change in the position of the borrower.

Durable long-term restructures will have to be applied having regard to the circumstances of individual cases.

Data published by the Department of Finance and the Central Bank would appear to demonstrate some success by the lenders in addressing the accounts in early arrears and in putting in place appropriate measures to prevent borrowers from going into arrears.

However, it is now necessary for banks to significantly build on this in 2014.

We will continue to work to support those who find themselves in mortgage difficulties, including through monitoring the performance of the six banks that are part of the Central Bank's MART process, in delivering sustainable solutions to borrowers.

Ensuring an appropriate Tax Code

A haphazard approach to tax measures to incentivise the construction sector, as well as the open-ended nature of reliefs, are generally accepted to have contributed to the property development boom and the country's economic problems.

All property-related tax reliefs were subjected to a comprehensive review, and the decision was made to abolish every one of them.

The Minister for Finance has made it very clear that no new property-related reliefs can be introduced unless they are accompanied by an ex-ante or post-ante evaluation, and all future reliefs must have a guillotine, at which time they would cease.

During 2013, two property-related tax incentives were announced, both of which are targeted at owner/occupiers rather than investors:

- The Living City Initiative; and
- The Home Renovation Initiative.

An ex-ante cost benefit analysis has already been conducted on the Living City Initiative, which concluded that the proposed initiative would be beneficial. An application seeking EU State Aid approval was submitted in March 2014. The initiative is subject to a commencement order and the scheme is expected to begin in 2015 (subject to State Aid approval) and will be in place for a period of 5 years.

The Home Renovation Incentive was commenced on the day following the publication of Finance (No. 2) Bill 2013 and will run until 31 December 2015. The scheme will be subjected to an ex-post evaluation. This incentive represents a measured response to the significant downturn experienced by the construction industry and the provision is designed to stimulate increased activity and boost employment in the sector.

We will not repeat the mistakes of the past and introduce uncosted and inappropriate tax incentives. Nevertheless, it is important that the tax rules applying to the sector are fit for purpose and are appropriate to current circumstances.

As part of the Budget 2015 process, we will examine the tax code as it applies to the construction and property sectors to ensure it is optimal in terms of current policy priorities and goals. This will include a broad consideration of the rules applying to the sector. The avoidance of uncosted and inappropriate tax incentives is of paramount importance.

SUSTAINABLE FINANCING FOR THE CONSTRUCTION SECTOR

44	<p>A High Level Working Group chaired by the Department of Finance, bringing together the banks, NAMA and other key stakeholders, will be established to explore the issue of sustainable bank financing for the construction sector. In the first instance, this Group will bring an interim report in Quarter 2 to the Cabinet Committee on Mortgage Arrears and Credit Availability and a final report in Q3 that will;</p> <ul style="list-style-type: none"> • Establish current level of development finance provision; • Identify obstacles to increasing development finance provision, and means to remove them; and • Explore how best to facilitate the resolution of disputes over the availability and terms of development finance. <p>The Cabinet Committee will receive updates and discuss the availability of finance on a quarterly basis, and will, if necessary, determine further steps to be taken to ensure a properly functioning market.</p>	
	Timeline	Q2 2014, Q3 2014 and Ongoing
	Responsible Body	D/Finance; NAMA; NPRF; CBI; other key stakeholders

45	<p>The High Level Working Group will also specifically examine non-bank financing options including:</p> <ul style="list-style-type: none"> • addressing gaps between the amount of development finance being offered by banks, and the amount required to execute a project; • drawing on international best practice in relation to new and innovative financing structures, including the hybrid models involving non-bank actors; • supporting the availability of complementary sources of financing for housing and commercial projects, e.g. mezzanine finance and equity finance, on viable terms and facilitate the provision of financing by specialist funds, NAMA, and ISIF; and • exploring the scope for attracting more foreign capital into the development finance area. <p>The Cabinet Committee will receive an initial report in Q2 2014 and a final report in Q4 2014.</p>
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	Timeline	Q2 2014 and Q4 2014
	Responsible Body	D/Finance; NAMA; NPRF; other key stakeholders

46	<p>NAMA will advance up to €2 billion in development funding over the next three years, in addition to the €500 million that has been already advanced, to complete or commence new development on property held as security for its loans, subject to commercial viability. This funding will be advanced directly by NAMA or through appropriate commercial partnerships.</p>
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	Timeline	Ongoing
	Responsible Body	NAMA

47	<p>NAMA will focus on projects that address particular supply shortages, e.g. it will facilitate the construction of 4,500 new houses or apartments in the Greater Dublin Area, office space in the Dublin Central Business District and projects in other key urban areas, subject to commercial viability. A core focus will be development in the Dublin docklands, subject to the delivery of a commercially viable Strategic Development Zone.</p>
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	Timeline	Ongoing
	Responsible Body	NAMA

EUROPEAN FUNDING

48	We will increase our engagement with the EIB and EIF in developing and implementing mechanisms designed to maximise the provision of financing to SMEs, including in the construction sector.	
	Timeline	Ongoing
	Responsible Body	D/Finance; D/JEI; EI; NPRF; ISIF

PERFORMANCE BONDS

49	As part of the work with the EIB and NPRF on trade finance, we will look at, amongst other matters, the issue of accessing performance bonds, including in the construction sector.	
	Timeline	Ongoing
	Responsible Body	D/Finance; DPER; DJEI; EI

MORTGAGE LENDING

50	We will work with mortgage providers and other relevant parties to ensure transparent and sustainable mortgage lending, including volumes of lending; greater clarity on the application and approval process; loan-to-value ratios; and loan to disposable income ratios. This work will be reported quarterly to the Cabinet Committee on Mortgage Arrears and Credit Availability.	
	Timeline	Q2 2014 and Ongoing
	Responsible Body	D/Finance; CBI

51	We will examine international best practice and develop proposals for additional models of mortgage financing in Ireland, including the concept of a mortgage insurance scheme, to ensure sustainable levels of mortgage lending in the medium term, and report to the Cabinet Committee on Mortgage Arrears and Credit Availability in November 2014.	
	Timeline	Q4 2014
	Responsible Body	D/Finance; DECLG; The Housing Agency

ENSURING AN APPROPRIATE TAX CODE

52	As part of the Budget 2015 process we will examine the tax code as it applies to the construction and property sectors, including a broad consideration of the rules applying to the sector. If these are not fit for purpose they should be refined, improved, abolished or replaced as appropriate.	
	Timeline	Q3 2014
	Responsible Body	D/Finance; Revenue Commissioners

8. Standards, Regulation and Enforcement

Given recent experience, it is particularly important that we ensure that the construction sector operates to the highest standard. This is vital if the sector is to regain and retain public trust.

We cannot tolerate the type of past practices that resulted in so much misery for so many people.

We have already taken steps to ensure enhanced accountability and we will continue to build on these.

Appropriate regulation, with consistent application by relevant Government Departments and Agencies and across the local authority areas, is fundamental to the development of a sustainable industry.

We envisage a competitive industry which puts consumer interests and protection to the fore. An industry which builds to a very high standard, is compliant with all regulations, and is tax compliant.

Industry has a significant part to play in avoiding a recurrence of past mistakes and must contribute appropriately to ensure a renewed and optimal sector fit for the future.

We will continue to work to eliminate fatalities and serious injury to workers in this sector. It is important that as economic activity and employment improves in the sector that worker safety standards are maintained. Planning for a return to employment growth in construction needs to be accompanied by vigilance and adherence to best practice to avoid workplace accidents.

We will continue to work to ensure there is co-ordination and co-operation between Government Departments and Agencies with enforcement responsibility within the sector to ensure projects are delivered to a high standard of quality, with due care for the safety and health of workers.

Building Regulations

New Building Control (Amendment) Regulations came into effect on 1 March 2014, which strengthen the current arrangements in place for the control of building activity.

Requirements include:

- drawings to be submitted to the local building control authority;
- design to be undertaken and certified by competent professionals prior to works commencing;
- owners to formally assign a competent builder to undertake and certify the works;
- owners to formally assign a registered professional as an Assigned Certifier; and
- statutory certificates of compliance from designers, builders and assigned certifiers to confirm compliance with the requirements of the Building Regulations.

Other key aspects of the building control reform measures that are underway include:

- an electronic administration system, for which the initial phase of development went live in March 2014, is advancing with a view to using on a pilot basis by year end; and
- implementation of a report on independent review of arrangements for registration of architects, published on 24 September 2013.

While ensuring improved standards and quality, it will continue to be possible for those who choose to do so to self-build or engage in direct labour.

In relation to enforcement and inspection, work is underway on the agreement of common protocols and consistent approaches to Building Control activity across the local government sector and preparations for the transition to service delivery models, incorporating regional and shared services structures. These will have regard to workplace safety and health compliance.

Statutory Register of Builders, Contractors and Construction Trades

Statutory registration has the potential to contribute significantly to the quality of the built environment while providing public contracting authorities with an objective means of assessing compliance with legal obligations.

The Construction Industry Register Ireland or CIRI is up and running since early March 2014 on a voluntary basis, and will be placed on a statutory footing by 2015.

Prior to the establishment of the Construction Industry Register Ireland (CIRI) there was no way for consumers to distinguish construction companies, sole traders and builders who met the required obligations from those who did not.

The register accommodates the full spectrum of building construction and is designed for construction practitioners including of all company sizes, partnerships and sole traders. An Industry Code of Ethics applies together with defined obligations for registered members to adhere to. An ongoing Continuing Professional Development obligation for members also applies.

The registration scheme will accord with competition law, including strong quality assurance checks and provide strong consumer protection.

Consumers have every right to expect that the buildings they buy - or the professional services they pay for - will comply with statutory requirements.

The register will provide consumers with an assurance that all listed builders, contractors and tradespersons have met all registration requirements.

In addition, to further protect consumers, we will consider and report on potential forms of redress for consumers, including the potential for latent defects insurance.

Tackling the Shadow Economy

Revenue and other relevant State agencies will continue their work combating shadow economy activity, including in the construction sector. Tackling the shadow economy is a corporate priority for the Revenue Commissioners, with some 25% of compliance resources dedicated to this area. During 2013, Revenue conducted 1,078 audits of the construction sector yielding in excess of €36 million to the Exchequer.

The Hidden Economy Monitoring Group (HEMG), chaired by Revenue, as a non-statutory group, and including State agencies, business representative bodies and trade unions, identifies initiatives to tackle the shadow economy. The HEMG has decided that one of its areas of focus in 2014 will be the construction sector. It is vitally important that industry play an active role in tackling shadow activity right across the sector, through supporting the work of the HEMG and in a wider context.

The new Department of Social Protection Compliance and Anti-Fraud Strategy 2014-2018, launched in April, aims to stop fraud from entering the system in the first place; increase the likelihood of finding incorrect or fraudulent claims and quickly correcting these; and strengthen the sanctions for

those who are caught. To inform the development of the strategy an external and internal consultation process was undertaken, which involved among others, members of the Hidden Economy Monitoring Group, including those representing the construction sector. In line with key messages arising from the consultation, a focus of the strategy is the targeting of the shadow economy and the sectors and individuals who have potential to operate in it. In particular, the Department will work collaboratively with the other key statutory compliance and enforcement agencies and the sectoral representative bodies in respect of the construction sector. In conjunction with Revenue and other compliance agencies, it is proposed to undertake high visibility site visits and inspections on construction sites where such projects are being publicly funded. Specific risk criteria will be applied to those individuals and companies targeted for reviews. Inspections will also be conducted on once-off builds, using data from new building regulations to be operated by Local Authorities for planning permissions.

The Government has been proactive in ensuring compliance with clauses in the Public Works Contracts used for all major school building projects. In April 2013, the Department of Education and Skills appointed contractors to conduct audits on school/college builds to verify compliance. Reviews of educational construction sites are undertaken and any irregularities uncovered forwarded to the relevant authorities for follow up action. The Department also provided an on-line complaint system. Some 13 audits are completed with a further audit ongoing. Arising from these audits, five projects have been referred to the Revenue Commissioners, one to the Department of Social Protection and one to the National Employment Rights Authority.

During 2013 the Health and Safety Authority carried out 3,000 inspections in the construction sector to ensure compliance with workplace safety and health requirements. This also helps to reduce the shadow economy.

Budget 2014 also includes a focus on combating the shadow economy by requiring those availing of the Home Renovation Incentive to use tax compliant contractors. Revenue launched a dedicated online system in April 2014, that will record details of the work done by the contractor and payments made by the property owner and will ensure that the latter receives tax relief for works carried out as quickly and seamlessly as possible. Incentivising the use of compliant contractors to carry out construction contracts helps to reduce the competitive disadvantage that legitimate businesses face versus those contractors who operate in the shadow economy.

STRENGTHENING PUBLIC CONFIDENCE THROUGH ROBUST REGULATION		
53	We will ensure effective implementation of Building Control (Amendment) Regulations 2013, and introduce a wider package of building control reforms to accompany the new regulations to ensure stronger consumer protection.	
	Timeline	Ongoing
	Responsible Body	DECLG; Local Authorities

54	We will develop an Agreed Operational Framework for Building Control Authorities to standardise work practices, systems, procedures and decision-making in relation to oversight of building control activity across the local authority sector and to move towards a risk-based approach to inspections by building control authorities by September 2014.	
	Timeline	Q3 2014
	Responsible Body	DECLG; Local Authorities

55	We will bring forward Heads of a Bill by end 2014 to enable the Construction Industry Register, Ireland's register of contractors, builders and tradespersons, to operate on a statutory footing by 2015.	
	Timeline	Q4 2014
	Responsible Body	DECLG; DPER

56	In collaboration with key stakeholders in the public and private sector, we will consider and report on potential forms of redress for consumers and homeowners, including the potential for latent defects insurance.	
	Timeline	Q4 2014
	Responsible Body	DECLG

57	Complete implementation of the Construction Contracts Act	
	Timeline	Q2 2014
	Responsible Body	DPER

SHADOW ECONOMY

58	Revenue and other relevant State agencies will continue their work combating shadow economy activity, including in the construction sector, and, as part of that work, will continue to engage, as appropriate, with business representative groups through the work of the Hidden Economy Monitoring Group and through bilateral meetings. Representative bodies will be asked to support the work of State agencies by engaging through the HEMG and other fora, and by providing intelligence.	
	Timeline	Ongoing
	Responsible Body	Revenue; DSP; NERA; HSA

9. Improving Education and Skills – Helping Create Jobs and Reduce Unemployment

It is essential that the construction industry is fit for purpose, and is supported by highly skilled and well qualified workers.

It is also important that any new jobs created are available and accessible to those who are unemployed, and that their wealth of experience and talent can contribute to our recovery. A key focus of this strategy is to facilitate moving ex-construction workers off the live register, back to the workplace.

According to the most recent CSO data (Q4 2013) some 43,600 persons unemployed were previously employed in Construction (17% of the total), of which 34,000 have been unemployed for more than 12 months.

These figures may not give the full effect of the unemployment problem for former construction workers – any former construction worker who later engaged in short-term employment in another sector would now not be classified as a former construction worker.

We cannot allow economic recovery to bypass those on the live register. Getting the unemployed back to work is a key Government priority. *'Pathways to Work'* sets out a new vision for our welfare and employment services. Unemployed people can now avail of client profiling, early group engagements, one-on-one interviews, skills and experience assessments, and training and work placements, as we continue to roll out one-stop-shop Intreo offices nationwide.

We need to ensure that those on the live register engage in education and training and that their skills are aligned to the sectors evolving needs. The Department of Education and Skills is providing funding through SOLAS, the new Further Education and Training Authority, and the Higher Education Authority for a number of targeted training and education interventions to support unemployed people building on their skills and experience with new qualifications in areas where employment opportunities are expanding.

MOMENTUM was rolled out by the Department of Education in 2013. MOMENTUM supports the provision of free education and training projects to allow up to 6,500 long term jobseekers to gain skills and to access work opportunities in identified growing sectors. It is intended to provide a minimum of 2,000 places for young people in 2014 under a new iteration of the MOMENTUM Programme.

The Springboard initiative launched in 2011 as part of the Government's Jobs Initiative was introduced in recognition of the fact that many of the jobs which were being lost in sectors such as construction, would not return even as the economy recovered, and that people previously employed in these sectors would find that their qualifications and skill sets did not match the skill requirements of emerging growth sectors. To date some 15,500 people have enrolled on Springboard programmes.

The tender for the 2014 round of Springboard, in February sought proposals for programmes in a number of construction areas such as: management and non-wet trades with specific reference to operating and competing internationally, engaging the potential of ICT, Building Information Modelling (BIM), 'greening' of construction, management capability and chartered surveying. While there is at present an excess of labour supply, these areas are examples of certain niche skills which

are in short supply. The new Springboard call provides an immediate opportunity for professional associations and firms from the construction sector to partner with education and training providers to submit programme proposals for funding to fill skills gaps.

There needs to be a positive disposition on the part of industry to supporting the return of the unemployed to work. Every effort should be made to encourage this – and to ensure that employers are aware of incentives, such as JobsPlus (under which they can receive €7,500 - €10,000 for recruiting a person unemployed for more than 12 months). Employer engagement is paramount in getting people back to work. We must ensure that potential employers view the live register as a valuable resource providing a pool of well qualified and highly skilled potential workers.

There is a need to ensure appropriate skills and expertises are available to facilitate a competitive construction sector now and into the future. There is also a need to increase the attractiveness of the sector, ensuring it appeals to young talent. We need to ensure skills are aligned to the increasing need for ICT within the sector, for example clean room industry and productivity enhancing Building Information Modelling (BIM) systems, which are of particular importance in providing suitable infrastructure for IDA supported industries.

In the medium-long term, a sustainable, competitive and innovative sector will require a close partnership between education and training providers and industry in which both are prepared to shoulder responsibility. There are well established links between industry associations in the construction sector such as Engineers Ireland and the Society of Chartered Surveyors and third level institutions in the development and accreditation of undergraduate and postgraduate programmes. Such relationships are the key to ensuring the continuous alignment of programmes with changing skills needs.

A review of the system of apprenticeships in Ireland, in line with best international practice, has been undertaken. Recommendations of particular relevance to the construction sector include:

- a move away from a generic placement at Level 6 of the national framework of qualifications for all apprenticeship programmes;
- that the curriculum for each family of trades, as a group, is reviewed and updated as a matter of urgency;
- that an upper and lower ceiling on recruitment levels should be examined, so that programmes are tailored to labour market needs, while avoiding future skill shortages; and
- that opportunities for progression should be strengthened and a master craftsman qualification considered.

The Apprenticeship Review Group's report was submitted in December 2013 and published on the Department of Education and Skills website in January 2014.

The implementation of the report's recommendations is being considered in the context of establishing a framework for a future expanded apprenticeship system. Initially, this involves Departmental engagement with SOLAS, the Higher Education Authority, Quality and Qualifications Ireland, representatives of business and trade unions and representatives of providers of further and higher education. Stakeholders are being consulted and arrangements are being developed for implementation of the recommendations. An implementation plan, which will cover how existing apprenticeships will be further developed and how progress will be made on developing apprenticeships in new sectors, will be finalised by mid year.

We will advance appropriate recommendations for the construction sector early this year to ensure that our young people have the best possible apprenticeship programmes as demand for skilled labour increases.

64	Through the preparation and gradual implementation of the Further Education and Training strategy we will work to ensure the alignment of provision to the needs of enterprises for vocational type training in the construction sector.
	Timeline Q2 and Ongoing 2014
	Responsible Body DES

SUPPORTING LONG-TERM UNEMPLOYED

65	We will work with the construction industry to ensure employers are aware of incentives to recruit long-term unemployed, and work with industry to develop proposals to support the return of long-term unemployed construction workers to the workforce.
	Timeline Q3 2014 and Ongoing
	Responsible Body DSP; Industry

APPRENTICESHIP REVIEW

66	We will consider the recommendations of the Apprenticeship Review Group and consult with relevant stakeholders on how particular recommendations could be implemented and seek expressions of interest from sector and industry groups that wish to support and have critical mass to participate early in the commencement of the new apprenticeship model. We will advance appropriate recommendations for the construction sector this year to ensure that our young people have the best possible apprenticeship programmes as demand for skilled labour increases.
	Timeline Q2 2014 and Ongoing
	Responsible Body DES

10. Competitiveness, Innovation and Internationalisation

The Action Plan for Jobs is a mechanism to drive competitiveness. The 2014 plan commits to an increased focus on competitiveness in all parts of the economy in 2014. Many firms are still confronted by high costs. Others are dealing with legacy issues that make accessing funding for investment extremely challenging. Still others lack the capabilities to take advantage of growth opportunities. Through the Cabinet Committee system, notably the Cabinet Committee on Economic Recovery and Jobs, the Government will monitor progress on competitiveness issues identified by the National Competitiveness Council and others, and will consider further actions to improve Ireland's international competitiveness and examine initiatives to make it easier to do business in Ireland. This work will include actions to: review the key competitiveness issues for business, including in particular cost competitiveness, and take action on key challenges identified; review key challenges in terms of the ease of doing business in Ireland and take action on issues identified; and ensure that for each quarter, Government considers a report on competitiveness issues and progress in addressing them.

Our vision is for a competitive construction industry based on best practice. We need a competitive, innovative, dynamic and sustainable construction sector serving domestic needs and also gaining traction in overseas markets. We will continue to explore ways to drive internationalisation and exports in the sector. For example, ISIF will in time consider investing in Irish construction companies that are seeking to expand into international markets.

Enterprise Ireland (EI) works intensively with prospective construction sector exporters in areas such as market research, management training, partnering, and exposure to peer client experience and in-market supports. Enterprise Ireland supports include long and short-term Client Management Development Programmes, including a *Management4Growth* programme and *Business Accelerator* programme and Strategic Consultancy; a 'Marketing Sales Strategy Review' process; and a Lean Start programme.

Technology advances in materials, construction methods, ICT, and global communications are transforming the sector. Building Information Modelling (BIM) has become a powerful tool in driving efficiencies and increased productivity in construction and is rapidly becoming a standard requirement internationally. EI has recently commenced a BIM Start programme, which is the first stage of a three part programme that will support companies to develop a strategic roadmap with the aim of successfully integrating their products and services into the information needs of designers and contractors. Improvements in innovation and efficiency also include the optimisation of the use of e-planning systems. Adoption of new technologies, modern methods of construction and delivery processes will be crucial for sustainable competitive construction enterprises.

Increased productivity through improved training and skills and through the adoption of technology can make significant cost, building performance and project delivery differences. Construction costs are a key issue for a competitive industry. It is important that increased cost competitiveness represents a structural rather than a cyclical shift. Measures to reduce the costs of professional services, for example The Legal Services Regulation Bill 2011, which increases competition in the legal services market by removing unnecessary restrictions on the way legal services can be delivered, supports the reduction of costs for all sectors of the economy, including the construction

sector. This is particularly important for the construction sector given requirements for works such as conveyancing and work on leases by the legal industry.

E-Conveyancing

A key component of the property market involves the processes that are used to secure the transfer of title between a purchaser and a vendor more commonly referred to as conveyancing. Since the Law Reform Commission first highlighted the importance of moving towards a system of e-Conveyancing in 2005, the Property Registration Authority (PRA) has significantly advanced its range of online eRegistration services following its transition to a fully electronic national register of property ownership (e.g. 4,000 online fee-paying business transactions per day and 60% of all discharges of mortgages being lodged electronically and completed within 2 days of lodgement). The PRA continues to work on the roll out of electronic registration initiatives. Despite this the process of conveyancing, taking into account time taken by all players in the process to secure a change in ownership in property, remains largely paper based and takes a disproportionate amount of time for the title to transfer to the new owner once the terms of a transaction have been agreed. Significant delays can arise from requisitions on title which the purchaser’s legal representative is required to make before the sale is closed – this can involve up to 60 separate headings.

Therefore, a system of eConveyancing which harnesses modern technology to assist in the timely transfer of property ownership would provide a more modern, efficient, cost effective and secure system to support transactions in the property market in the future. Moving to a full eConveyancing system will require a number of further elements over and above existing and planned developments to be put in place to provide for the secure transmission of communications, the management and disbursement of funds between parties and the creation and management of digital signatures. It is recognised that such work will require representatives of the legal profession, the banking sector and the relevant statutory agencies to work together closely, and could build on work already completed on this issue under the aegis of the Law Society.

SUPPORTING INTERNATIONAL EXPANSION AND TECHNOLOGY ADVANCEMENTS		
67	Continue to support the expansion of construction firms into international markets, in particular through measures supporting capacity building in management and training and through the overseas support of Embassies and Enterprise Ireland offices.	
	Timeline	Ongoing
	Responsible Body	EI
68	Continue promotion of the Enterprise Ireland Lean Start Programme and advance construction companies onto the following stages, Plus and Transform. Implement a BIM staged development programme to support companies advancing to Level 2 BIM capability.	
	Timeline	Ongoing
	Responsible Body	EI

69	Work with industry organisations to promote the use of BIM and develop the appropriate technical skills amongst Irish construction firms so that they can successfully compete in markets where BIM is widely adopted or a requirement.
	Timeline Ongoing
	Responsible Body EI / Industry Representatives

SUPPORTING COLLABORATION, RESEARCH AND INNOVATION

70	Develop a public sector pilot Market-Led Clustering Programme to stimulate collaboration between Irish based construction sector firms, other relevant industry sectors and the research community, which would act as a demonstrator internationally of Ireland’s capabilities in pre-commercial product and service development, servicing national level policy goals particularly in the context of the Current National Reform Programme (especially climate change targets). Such a project should encompass activities from applied research to pilot production (e.g. smart infrastructures or smart homes).
	Timeline Ongoing
	Responsible Body DJEI and other Government Departments

71	Accelerate engagement by construction sector firms with third level institutes and continue to promote available programmes including Innovation Partnerships, Innovation Vouchers, Industry Fellowships, and Strategic Partnerships to support R&D projects in collaboration with the third level sector.
	Timeline Ongoing
	Responsible Body EI / Industry Representative Bodies / DES / HEIs

72	Science Foundation Ireland to promote relevant research themes, collaborative between researchers in Irish HEIs and relevant industries, in thematic research funding calls: Energy Efficiency and environmental sustainability; water and waste.
	Timeline Q2 2014
	Responsible Body SFI

73	In collaboration with key stakeholders (the legal profession and the banking sector) we will review and report on the steps required to deliver a system of eConveyancing in Ireland, including the resource implications and timeframes for delivery.
	Timeline Ongoing
	Responsible Body DJ&E, Property Registration Authority and other relevant Government Departments and stakeholders (including D/Finance, DECLG; and Local Authorities)

11. Implementation and Oversight

This strategy will not succeed without steadfast implementation of each of the 75 actions. Through the Action Plan for Jobs process and through the Cabinet Committee system, most notably the Cabinet Committee on Economic Recovery and Jobs, we will ensure that a whole of Government approach is taken to implementation.

The Cabinet Committees on Economic Infrastructure and on Mortgage Arrears and Credit Availability will deal with issues specific to their remit.

Many of the actions we have outlined here are of necessity focused on the immediate challenge of driving recovery in a sector that has real potential to create sustainable employment. Aligned with these are actions to ensure that the sector remains on a sustainable growth path, delivering our housing and infrastructural needs efficiently, competitively and at the highest standards of innovation, quality and professionalism.

To this end, we will establish a Construction Sector Group, chaired by the Secretary General of the Department of the Taoiseach, to support delivery of this strategy, and to engage with industry in relation to specific developmental issues for the sector.

IMPLEMENTATION AND OVERSIGHT		
74	The Cabinet Committee on Economic Recovery and Jobs will consider construction and property related issues once a quarter, and other Cabinet Committees will consider issues relevant to their remit on a regular basis.	
	Timeline	Ongoing
	Responsible Body	D/Taoiseach
75	Launch a Construction Sector Group to support the implementation of this strategy, with a focus on near term actions. The work of this group will feed into the Cabinet Committee on Economic Recovery and Jobs. The group will be established for one year at which time it will be reviewed.	
	Timeline	Q2 2014
	Responsible Body	D/Taoiseach

Summary of Actions by Quarter

Quarter 2 2014

Action Point	Responsible Body	Timeline
Put in place a National Framework for Housing Supply, ensuring a balanced approach in which the supply of housing is matched with projected demand, and in which emerging imbalances can be identified and rectified at an early stage. This will be placed on a statutory footing and will require the publication of an annual National Statement of Projected Housing Supply and Demand to be published each June.	DECLG; Local Authorities; CSO; DES; The Housing Agency; other stakeholders	Q2 2014; Ongoing
Establish a Housing Supply Coordination Task Force for Dublin with an immediate focus on addressing supply-related issues. It will work closely with industry and other parties, including those responsible for key infrastructure such as schools, to identify and address any obstacles to viable and appropriate development.	DECLG; Dublin Local Authorities; DES; The Housing Agency; other relevant agencies	Q2 2014; Ongoing
Examine the key barriers to housing mobility and make recommendations to Government.	DECLG; D/Finance	Q2 2014
In line with our commitment in the Programme for Government, we will legislate for a fair and transparent tenancy deposit protection scheme.	DECLG	Q2 2014
We will conclude our review of Part V requirements, ensuring that it is delivering as intended, and will bring forward any necessary legislative change on foot of the review.	DECLG; Local Authorities	Q2 2014
The Homelessness Implementation Plan will be published in Q2 2014, and we will implement the key recommendations of the Homelessness Oversight Group's First Report in Q2 2016.	DECLG; DSP; HSE; Local Authorities	Q2 2014 and Q4 2016
We will bring proposals to Government on the development of a national planning framework and publish a policy statement on planning.	DECLG	Q2 2014
Publish a general scheme of a Planning Bill to implement the planning provisions of the Mahon Tribunal, to enable the establishment of an independent Planning Regulator and to make provision for other planning-related measures identified in this Strategy.	DECLG	Q2 2014 and Ongoing
Ensure that developers can avail of reduced development contributions for existing planning permissions that have yet to be activated and legislate to this effect.	DECLG	Q2 2014 and Ongoing 2014

<p>Irish Water will submit a draft Connections Policy to the Commission for Energy Regulation for approval (involving public consultation) that will replace funding of water and waste capital infrastructure works through development contributions.</p>	<p>Irish Water and the Commission for Energy Regulation</p>	<p>Q2 2014</p>
<p>Work with Dublin local authorities in supporting a 'kick start' initiative for prime development areas where extensive infrastructure investment has taken place. This will include flexibility around early phase densities in new larger-scale developments subject to the achievement of higher densities in later phases to underpin sustainable development.</p>	<p>DECLG</p>	<p>Q2 2014 and Ongoing</p>
<p>Examine the scope for more streamlined planning and appeal processes for the amendment of existing planning permissions and provide for any new arrangements in the new Planning Bill.</p>	<p>DECLG</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Enable local authorities to require applicants for planning permission for housing projects of scale to indicate the development schedule and where the development is not commenced in line with the schedule, without reasonable justification, to modify the duration of the permission.</p>	<p>DECLG</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Introduce and develop an enhanced customer service approach for all participants at all stages in the planning process, including by: providing for greater emphasis on e-planning and acceptance of e-fees; developing new shared service approaches in relation to specialist skills requirements; and drawing on experience of the Strategic Infrastructure Act, ensuring that planning authorities engage actively on proposed developments of scale and that they enter into pre-planning discussions in a timely manner where these are sought, detailing required documentation.</p>	<p>DECLG; Local Authorities</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Consider removing incentives that existing arrangements for commercial rates may offer to owners to keep or render properties empty.</p>	<p>DECLG; DPER; Local Authorities</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Examine the possibility of enabling local authorities, should they wish to do so, to adopt new measures to incentivise the use and development of vacant sites.</p>	<p>DECLG</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Undertake a short review of existing arrangements for Strategic Development Zones with input from stakeholders, and make any necessary improvements as quickly as possible. This will include exploring ways to streamline processes and considering allowing the use of the provisions of the Strategic Investment Act in parallel with a SDZ.</p>	<p>DECLG; NAMA, Irish Water, New Era and other interested parties</p>	<p>Q2 2014 and Ongoing 2014</p>
<p>Drawing on international best practice legislate for and introduce a registry of options on land for development purposes to ensure market transparency.</p>	<p>Property Registration Authority; DJ&E; DECLG; OPW</p>	<p>Q2 2014 and Ongoing 2014</p>

Complete a review of public works contracts and arising from the review bring proposals to Government and implement any agreed changes.	DPER; Office of Government Procurement	Q2 2014 and Q3 2014
Provide for a major new on-farm investment support measure in the Rural Development Programme 2014-2020 to be submitted to the European Commission by mid-year.	DAFM	Q2 2014
A High Level Working Group chaired by the Department of Finance, bringing together the banks, NAMA and other key stakeholders, will be established to explore the issue of sustainable bank financing for the construction sector. In the first instance, this Group will bring an interim report in Quarter 2 to the Cabinet Committee on Mortgage Arrears and Credit Availability and a final report in Q3 that will: establish current level of development finance provision; identify obstacles to increasing development finance provision, and means to remove them; and explore how best to facilitate the resolution of disputes over the availability and terms of development finance. The Cabinet Committee will receive updates and discuss the availability of finance on a quarterly basis, and will, if necessary, determine further steps to be taken to ensure a properly functioning market.	D/Finance; NAMA; NPRF; CBI; other key stakeholders	Q2 2014, Q3 2014 and Ongoing
The High Level Working Group will also specifically examine non-bank financing options including: addressing gaps between the amount of development finance being offered by banks, and the amount required to execute a project; drawing on international best practice in relation to new and innovative financing structures, including the hybrid models involving non-bank actors; supporting the availability of complementary sources of financing for housing and commercial projects, e.g. mezzanine finance and equity, on viable terms and facilitate the provision of financing by specialist funds, NAMA and ISIF; and the scope for attracting more foreign capital into the development finance area. The Cabinet Committee will receive an initial report in Q2 2014 and a final report in Q4 2014.	D/Finance; NAMA; NPRF; other key stakeholders	Q2 2014 and Q4 2014
Work with mortgage providers and other relevant parties to ensure transparent and sustainable mortgage lending, including volumes of lending; greater clarity on the application and approval process; loan-to-value ratios; and loan to disposable income ratios. This work will be reported quarterly to the Cabinet Committee on Mortgage Arrears and Credit Availability.	D/Finance; CBI	Q2 2014 and Ongoing
Complete implementation of the Construction Contracts Act.	DPER	Q2 2014
Through the preparation and gradual implementation of the Further Education and Training strategy work to ensure the alignment of provision to the needs of enterprises for vocational type training in the construction sector.	DES	Q2 and Ongoing 2014
Consider the recommendations of the Apprenticeship Review Group and consult with relevant stakeholders on how particular recommendations could be implemented and seek expressions of interest from sector and industry groups that wish to support and have critical mass to participate early in the commencement of the new apprenticeship model. We will advance appropriate recommendations for the construction sector this year to ensure that our young people have the best possible apprenticeship programmes as demand for skilled labour increases.	DES	Q2 2014 and Ongoing
Science Foundation Ireland to promote relevant research themes, collaborative between researchers in Irish HEIs and relevant industries, in thematic research funding calls: energy efficiency and environmental sustainability; water and waste.	SFI	Q2 2014

Launch a Construction Sector Group to support implementation of this strategy, with a focus on near term actions. The work of this group will feed into the Cabinet Committee on Economic Recovery and Jobs. The group will be established for one year at which time it will be reviewed.	D/Taoiseach	Q2 2014
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Quarter 3 2014

Action Point	Responsible Body	Timeline
Assess existing construction and property data sources for appropriateness including identifying any gaps and quality shortcomings and how they might be addressed.	DECLG; The Housing Agency; CSO	Q3 2014
We will publish a Social Housing Strategy setting out a vision for the sector, and we will introduce legislation to regulate the Approved Housing Body sector.	DECLG; Local Authorities; The Housing Agency	Q3 2014 and Ongoing
Planning authorities will identify and address crucial infrastructural capacity issues required to deliver development plan objectives.	Local Authorities; Irish Water	Q3 2014
Through Pathways to Work the Department of Social Protection will report on the success of social clause provisions with a view to supporting the implementation of social clauses where appropriate.	DSP; DPER; DES; NDFA	Q3 2014
As part of the Budget 2015 process we will examine the tax code as it applies to the construction and property sectors, including a broad consideration of the rules applying to the sector. If these are not fit for purpose they should be refined, improved, abolished or replaced as appropriate.	D/Finance; Revenue Commissioners	Q3 2014
Develop an Agreed Operational Framework for Building Control Authorities to standardise work practices, systems, procedures and decision-making in relation to oversight of building control activity across the local authority sector and to move towards a risk-based approach to inspections by building control authorities by September 2014.	DECLG; Local Authorities	Q3 2014
Work with the construction industry to ensure employers are aware of incentives to recruit long-term unemployed, and work with industry to develop proposals to support the return of long-term unemployed construction workers to the workforce.	DSP; Industry	Q3 2014 and Ongoing

Quarter 4 2014

Action Point	Responsible Body	Timeline
Develop a national policy towards professionalising the private rental sector, to include issues such as investment, standards and regulation.	DECLG; The Housing Agency	Q4 2014
Continue to implement the Government Action Programme on Unfinished Housing Developments and specifically the Budget 2014 Special Resolution Fund.	DECLG; DSP; Local Authorities	Q4 2014

Establish new Regional Assemblies which will have responsibility for preparing new Regional Spatial and Economic Strategies, with input from key infrastructure and economic development agencies, replacing the previous Regional Planning Guidelines.	DECLG	Q4 2014
IDA will build new advanced manufacturing facilities in Waterford and Athlone, and office space in Letterkenny. The organisation is also monitoring the available property stock in other urban locations, where the private sector is not active.	IDA	Q4 2014
Explore ways to further enhance the availability of data in the commercial sector, including by giving consideration to the preparation of a census of commercial property to be conducted by local authorities.	DECLG; CSO; Local Authorities; IDA	Q4 2014
Review the National Energy Services Framework and update as required.	DCENR	Q4 2014
Publish report on public sector energy usage.	SEAI	Q4 2014
Oversee implementation by local authorities of a programme of works to improve the quality and enhance the energy efficiency of the existing local authorities housing stock.	DECLG; Local Authorities with relevant Departments and Agencies	Q4 2014 and Ongoing
Examine international best practice and develop proposals for additional models of mortgage financing in Ireland, including the concept of a mortgage insurance scheme, to ensure sustainable levels of mortgage lending in the medium term, and report to the Cabinet Committee on Mortgage Arrears and Credit Availability in November 2014	D/Finance; DECLG; The Housing Agency	Q4 2014
Bring forward Heads of a Bill by end 2014 to enable the Construction Industry Register, Ireland's register of contractors, builders and tradespersons, to operate on a statutory footing by 2015.	DECLG; DPER	Q4 2014
In collaboration with key stakeholders in the public and private sector, consider and report on potential forms of redress for consumers and homeowners, including the potential for latent defects insurance.	DECLG	Q4 2014
The Expert Group on Future Skills Needs (EGFSN) to identify future skills needs in the sector and implement targeted measures to ensure we can meet demand. Priority will be given to addressing skills gaps identified.	EGFSN; SOLAS, HEA	Q4 2014 and Ongoing
Develop and publish investment plans for 2015-2019	DPER	Q4 2014
The national planning framework and the proposed Regional Spatial and Economic Strategies will be developed to include a robust infrastructure investment and delivery programme linked to the public spending review cycles of Department of Public Expenditure and Reform and the investment programmes of all relevant infrastructure agencies including, inter alia, Irish Water, National Transport Authority, National Roads Authority, ESB, Bord Gáis, Eirgrid, and the Departments of Education and Skills and Health.	DPER; DECLG; Local Authority	Q4 2014

Quarter 1 2015

Action Point	Responsible Body	Timeline
Establish a working group and invite public comment on the feasibility and impact of setting minimum thermal efficiency performance standards in properties offered for rent or lease in the residential and commercial sectors.	DECLG; DCENR; SEAI	Q1 2015

Quarter 2 2015

Action Point	Responsible Body	Timeline
Working with key stakeholders examine the feasibility and impact of introducing consequential improvement regulations that would require homeowners undertaking major renovation work to improve the thermal efficiency of their homes.	DECLG; DCENR; SEAI	Q2 2015

Ongoing

Action Point	Responsible Body	Timeline
Provide a report to the Cabinet Committee on Economic Infrastructure on a quarterly basis on key infrastructural projects, provided by Departments, including their status, and put in place a mechanism for publishing the information by the end of 2014.	DPER	Ongoing
Ensure effective implementation of Building Control (Amendment) Regulations 2013, and introduce a wider package of building control reforms to accompany the new regulations to ensure stronger consumer protection.	DECLG; Local Authorities	Ongoing
As fiscal circumstances improve we will relax restrictions on local authorities' use of development contribution funds in local authority possession to invest in essential infrastructure, in line with overall fiscal rules.	D/Finance	Ongoing
NAMA will continue to facilitate engagement between its debtors and the IDA in order to increase the availability of property suitable for FDI needs, specifically focusing on the availability of office property in Dublin and, where commercially viable, providing development funding for new stock.	NAMA; IDA	Ongoing
Continue to support the Exemplar Projects on energy efficiency as they move through the Framework procurement steps to progress the ambition of transforming Ireland into one of the most energy efficient economies in Europe.	DCENR	Ongoing
Provide €57 million in Exchequer supports to further stimulate energy saving activity in the residential sector and implement a publicity campaign so that those who can avail of this are aware of the supports.	DCENR	Ongoing
Explore mechanisms for private financing and greater use of Public Private Partnership models for infrastructure procurement while continuing to meet VfM criteria, and report quarterly to the Cabinet Committee on Economic Infrastructure.	DPER; D/Finance	Ongoing
The Government is committed to the use of social clauses and as a priority will extend the use of social clauses in public works contracts and will keep their operation under review to ensure their on-going effectiveness.	DPER and Procuring Authorities	Ongoing

NAMA will advance up to €2 billion in development funding over the next three years, in addition to the €500 million that has been already advanced, to complete or commence new development on property held as security for its loans, subject to commercial viability. This funding will be advanced directly by NAMA or through appropriate commercial partnerships.	NAMA	Ongoing
NAMA will focus on projects that address particular supply shortages, e.g. it will facilitate the construction of 4,500 new houses or apartments in the Greater Dublin Area, office space in the Dublin Central Business District and projects in other key urban areas, subject to commercial viability. A core focus will be development in the Dublin docklands, subject to the delivery of a commercially viable Strategic Development Zone.	NAMA	Ongoing
Increase our engagement with the EIB and EIF in developing and implementing mechanisms designed to maximise the provision of financing to SMEs, including in the construction sector.	D/Finance; DJEI; EI; NPRF; ISIF	Ongoing
As part of the work with the EIB and NPRF on trade finance, we will look at, amongst other matters, the issue of accessing performance bonds, including in the construction sector.	D/Finance; DPER; DJEI; EI	Ongoing
Revenue and other relevant State agencies will continue their work combating shadow economy activity, including in the construction sector, and, as part of that work, will continue to engage, as appropriate, with business representative groups through the work of the Hidden Economy Monitoring Group and through bilateral meetings. Representative bodies will be asked to support the work of State agencies by engaging through the HEMG and other fora, and by providing intelligence.	Revenue; DSP; NERA; HSA	Ongoing
Address skills gaps relating to the ‘greening’ of construction by ensuring the implementation of the Build-Up Skills Ireland roadmap actions including the piloting of training initiatives.	DES; DECLG; DCENR; Third Level Institutes; Industry representative bodies	Ongoing
Undertake targeted promotion of the Skillnets pilot ManagementWorks management development training initiative for SMEs to the construction sector to maximise take-up from the sector which is currently low.	DES; Industry representative bodies	Ongoing
Links between construction sector firms, professional bodies and education and training providers should be further enhanced to ensure programmes are continuously aligned with emerging skills needs.	Industry; Third Level Institutions; SOLAS; HEA	Ongoing
Continue international graduate placement programmes that have received a strong industry endorsement including the Enterprise Ireland Graduates for International Growth programme, IBEC Export Orientation Programme and Farmleigh Fellowships, and actively promote to the construction sector.	EI	Ongoing
Continue to support the expansion of construction firms into international markets, in particular through measures supporting capacity building in management and training and through the overseas support of Embassies and Enterprise Ireland offices.	EI	Ongoing
Continue promotion of the Enterprise Ireland Lean Start Programme and advance construction companies onto the following stages, Plus and Transform. Implement a BIM staged development programme to support companies advancing to Level 2 BIM capability.	EI	Ongoing

<p>Work with industry organisations to promote the use of BIM and develop the appropriate technical skills amongst Irish construction firms so that they can successfully compete in markets where BIM is widely adopted or a requirement.</p>	<p>EI / Industry Representatives</p>	<p>Ongoing</p>
<p>Develop a public sector pilot Market-Led Clustering Programme to stimulate collaboration between Irish based construction sector firms, other relevant industry sectors and the research community, which would act as a demonstrator internationally of Ireland’s capabilities in pre-commercial product and service development, servicing national level policy goals particularly in the context of the Current National Reform Programme (especially climate change targets). Such a project should encompass activities from applied research to pilot production (e.g. smart infrastructures or smart homes).</p>	<p>DJEI and other Government Departments</p>	<p>Ongoing</p>
<p>Accelerate engagement by construction sector firms with third level institutes and continue to promote available programmes including Innovation Partnerships, Innovation Vouchers, Industry Fellowships, and Strategic Partnerships to support R&D projects in collaboration with the third level sector.</p>	<p>EI / Industry Representative Bodies / DES / HEIs</p>	<p>Ongoing</p>
<p>The Cabinet Committee on Economic Recovery and Jobs will consider construction and property related issues once a quarter, and other Cabinet Committees will consider issues relevant to their remit on a regular basis.</p>	<p>D/Taoiseach</p>	<p>Ongoing</p>
<p>In collaboration with key stakeholders (the legal profession and the banking sector) we will review and report on the steps required to deliver a system of eConveyancing in Ireland, including the resource implications and timeframes for delivery.</p>	<p>DJ&E, Property Registration Authority & other relevant Government Departments & stakeholders</p>	<p>Ongoing</p>

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