



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](http://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:

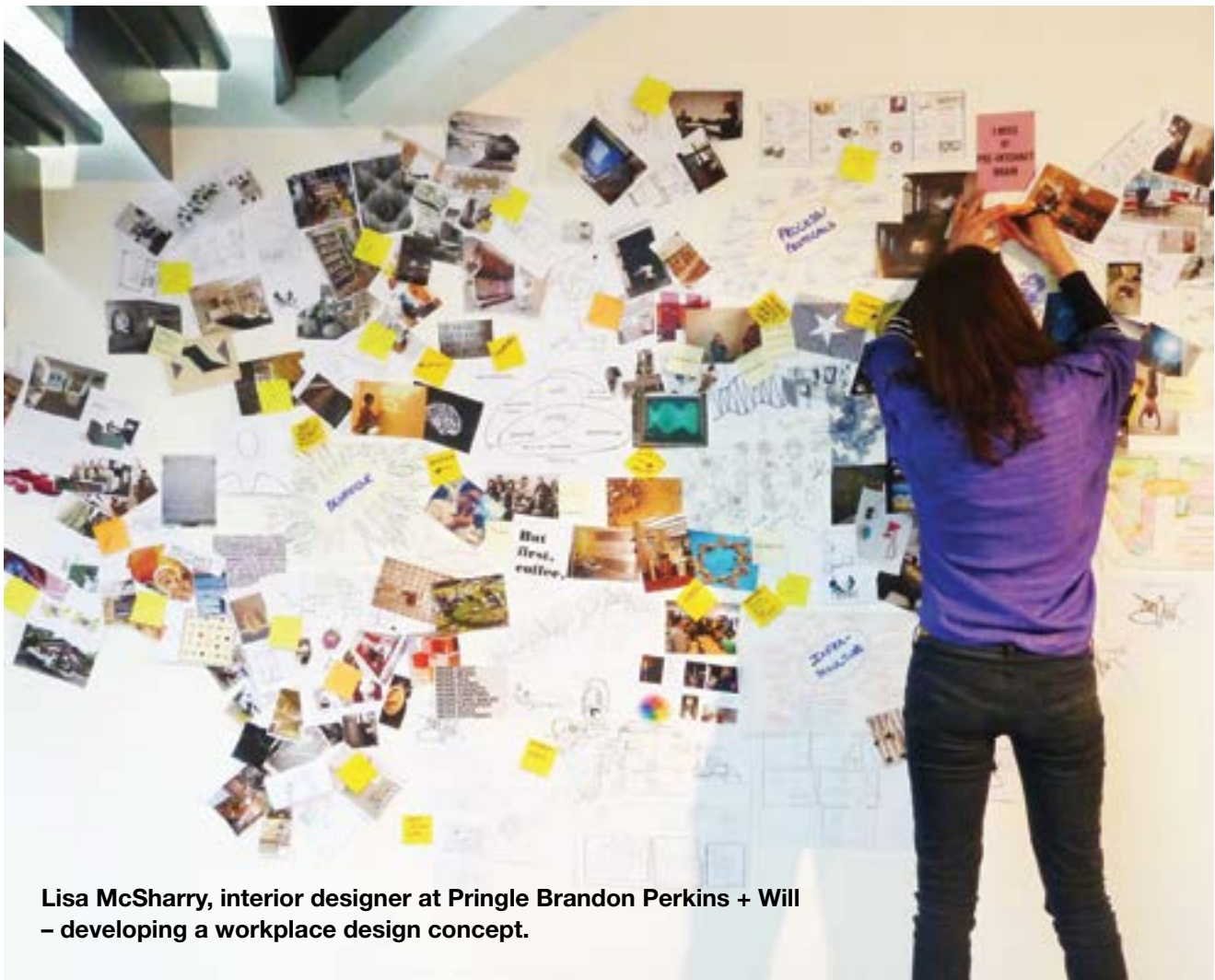
### Reinvigorate the image of the industry

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.





“ 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

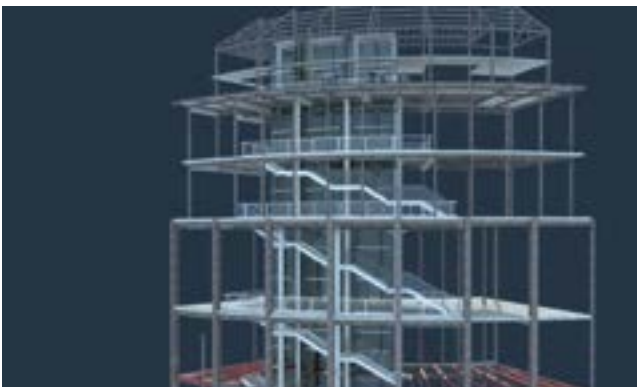
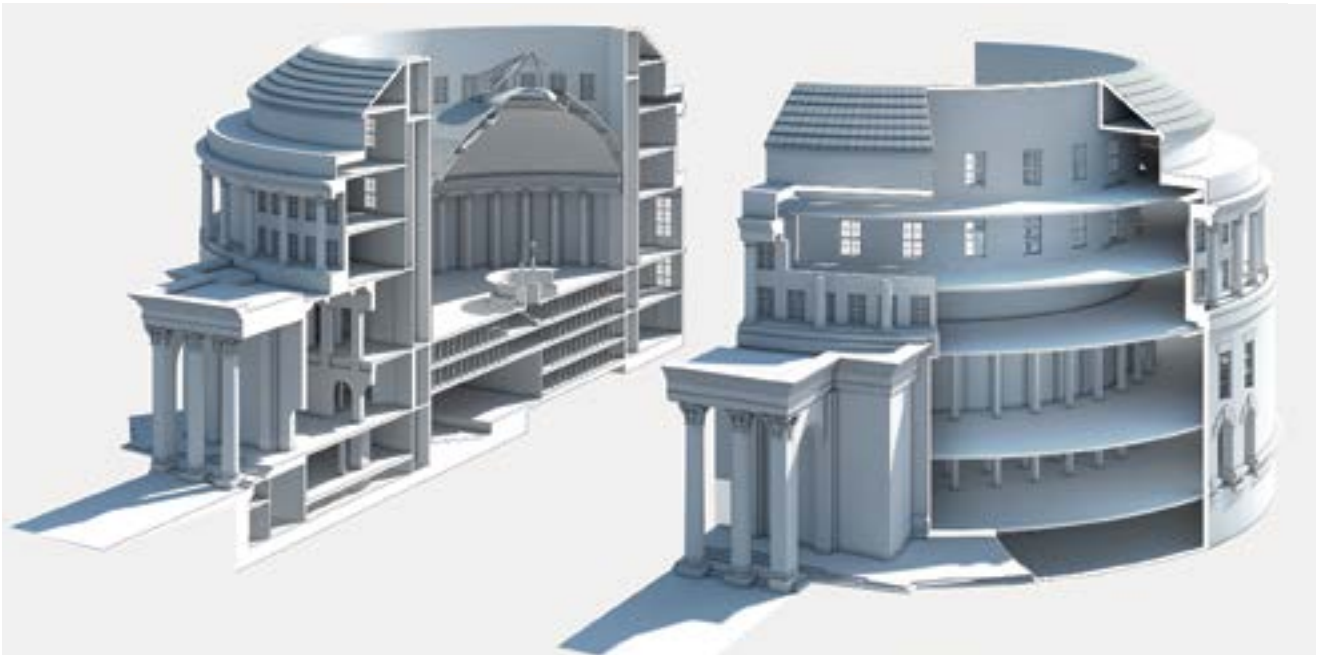
However, the challenge is significant and opportunity vast.

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**

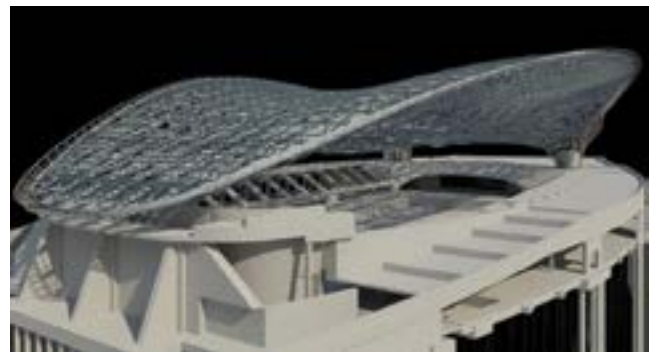


Image courtesy of UKTI

#### 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 clearly legible and the last name written in a flowing script.

Michael Fallon



A cursive signature of David Higgins, featuring a prominent '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 assets<sup>1</sup>
2. A 50% reduction in the overall time from inception to completion for new build and refurbished assets<sup>2</sup>
3. A 50% reduction in greenhouse gas emissions in the built environment<sup>3</sup>
4. A 50% reduction in the trade gap between total exports and total imports for construction products and materials<sup>4</sup>

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.<sup>5</sup> 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](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><b>KEY SECTOR TO UK ECONOMY</b> 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%.<sup>5</sup></p> <p>Some 3 million jobs are based in construction; 10% of total UK's employment.<sup>6</sup></p> <p><b>WIDER ECONOMIC SIGNIFICANCE</b> 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><b>LARGE SUPPLY CHAIN</b> accounting for around £124 billion of intermediate consumption,<sup>7</sup> almost all sourced within the UK. In other words, construction spend tends to stay within UK supply chain.</p> <p><b>WORLD CLASS DESIGN SKILLS</b> particularly in architectural design, civil engineering and sustainable construction with BREEAM as an internationally recognised standard.</p> <p><b>LOW ENTRY COST AND LOW CAPITAL</b> required enables small firms to access the market and promotes competition in the sector.</p>	<p><b>SECTOR INTEGRATION</b> 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><b>LOW LEVELS OF INNOVATION</b> investment in R&amp;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><b>LACK OF COLLABORATION AND LIMITED KNOWLEDGE SHARING</b> learning points from projects are often team-based and lost when the team breaks up and project ends. Low technology transfer.</p> <p><b>HIGH CONSTRUCTION COSTS</b> 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.

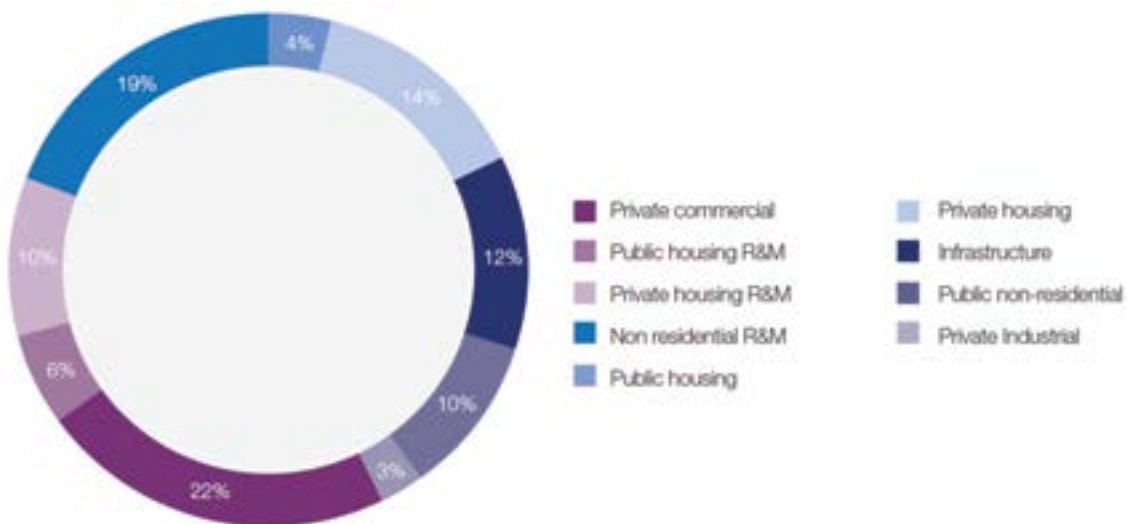
8 BIS analysis of ONS supply use tables. Construction contracting data only.

OPPORTUNITIES	THREATS
<p><b>LARGE GROWTH OPPORTUNITIES IN EMERGING MARKETS</b> with expected annual growth of 6% in construction output until 2021<sup>8</sup> which creates opportunities for UK companies to expand their exports, both in products and high value services.</p> <p><b>LOW CARBON CONSTRUCTION</b> 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><b>WIDE IMPLEMENTATION OF BIM TECHNOLOGIES</b> both domestically and abroad which could improve sector productivity and lower costs due to improved information flow and greater collaboration.</p> <p><b>COST REDUCTION</b> 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><b>ACCESS TO FINANCE</b> 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><b>SKILLS</b> 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><b>LACK OF CAREER ATTRACTION</b> 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><b>INTERNATIONAL TRADE</b> 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><b>HIGH DEGREE OF FRAGMENTATION</b> 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 Latham<sup>10</sup> and Egan<sup>11</sup> initiatives and the Wolstenholme<sup>12</sup> 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.<sup>13</sup> This is equivalent to about 10% of total UK employment.<sup>14</sup>

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.<sup>15</sup>

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.<sup>16</sup>

## 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.<sup>17</sup> 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.<sup>18</sup>

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.

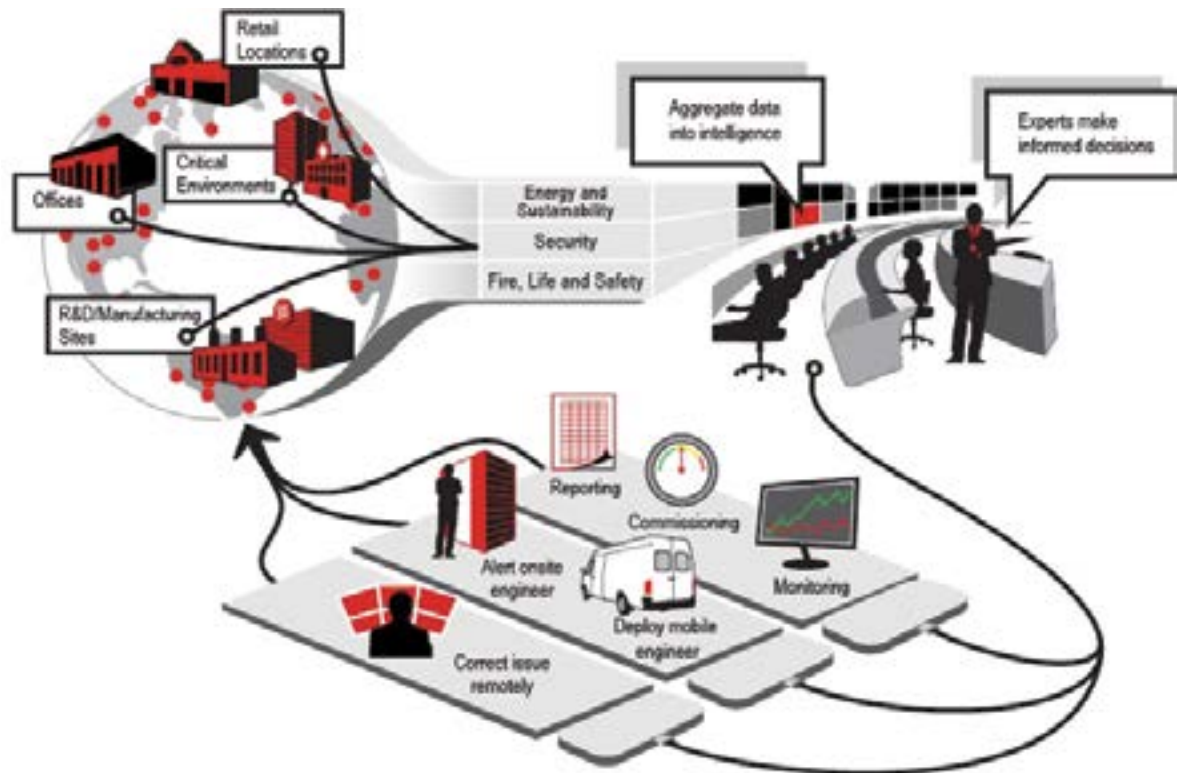
Applying new technology will be a key part of the burgeoning Smart City agenda, where the global market for integrated city systems is set to be worth £200 billion per annum by 2030.<sup>19</sup>

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](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.<sup>20</sup>

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.<sup>21</sup> 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,<sup>22</sup> 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.<sup>23</sup> 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 Scheme<sup>24</sup> and Climate Change Agreements.<sup>25</sup>



*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.<sup>26</sup>

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](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.<sup>26</sup> 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.<sup>28</sup> We are similarly strong in architecture and surveying services, where we have a net trade surplus of about £530 million.<sup>29</sup> In construction products the picture is less positive, with almost £6 billion of exports vastly outweighed by the £12 billion we import annually.<sup>30</sup> Overall, construction accounts for less than 2% of all UK exports.<sup>31</sup>

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](http://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.<sup>32</sup> 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.<sup>33</sup>

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.

<sup>32</sup> UK Employer Skills Survey 2011 (UKCES, 2012).

<sup>33</sup> 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.<sup>34</sup> 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.<sup>35</sup> 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 2011<sup>36</sup> – more than any other sector. This is thought to cost the UK economy £1.5 billion each year.<sup>37</sup> 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.<sup>38</sup> These shortages are evident mainly in skilled trades and professional occupations.<sup>39</sup> 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.<sup>40</sup> 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.<sup>41</sup> 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.<sup>42</sup>

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.<sup>43</sup> 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.<sup>44</sup>



*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.<sup>45</sup>

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](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.<sup>46</sup> 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.<sup>47</sup>

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.<sup>48</sup> 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.<sup>49</sup> 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 Report<sup>50</sup> (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.<sup>51</sup>

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;<sup>52</sup>
- if they do apply for an overdraft or loan, they are more likely to be turned down;<sup>53</sup>

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;<sup>54</sup> and
- late payment is more of an issue in construction than in other sectors.<sup>55</sup>

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.<sup>56</sup> 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.<sup>57</sup>

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.<sup>58</sup> 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

<sup>58</sup> 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.<sup>59</sup>

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.<sup>60</sup> 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
<b>Smart construction and digital design</b>	<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
<b>Low Carbon and sustainable construction</b>	<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
<b>Global trade</b>	<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
<b>The image of the industry</b>	<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
<b>Capability in the workforce</b>	<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
<b>Future Work Opportunities</b>	<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
<b>Client capability and procurement</b>	<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
<b>A strong and resilient supply chain</b>	<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
<b>Research and innovation</b>	<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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