

National Housing Taskforce – Skills, Materials and New Technology

Chartered Institute of Building (CIOB) call for evidence

Introduction and purpose of this paper

The National Housing Taskforce is a sectoral and political coalition convened by the Royal Institution of Chartered Surveyors (RICS) and the All Party Parliamentary Group (APPG) for Housing and Planning. It was established to develop clear, workable proposals for both Government and industry to address the UK's chronic shortage of housing.

A fundamental principle of the APPG for Housing and Planning is inclusivity and, in common with the officers of the group, the aim is to avoid piecemeal pronouncements and really get to the heart of the housing challenges faced by the UK.

To this end, the National Housing Taskforce is operating across 12 distinct areas of work, covering everything from planning reform to housing associations, and construction skills to mortgage finance. Furthermore, each stream is being organised by a relevant partner organisation with the credibility to convene a wide coalition of organisations in pursuit of their recommendations. This cross-sectoral approach mirrors the cross-party composition of the APPG itself. The Taskforce will conduct its work throughout 2016 and will produce reports toward the end of the year.

Skills, materials and new technology work-stream

The Chartered Institute of Building (CIOB)¹ is leading on the *Skills, Materials and New Technology* work-stream.

We cannot achieve either the desired quality or quantity of new housing without addressing the skills gap that currently exists across the construction sector. Furthermore, there are unprecedented opportunities for improving productivity and driving down costs through the use of new construction techniques, such as off-site manufacture (OSM).

This work-stream is charged with addressing the main issues in the construction labour market, including availability, productivity and diversity. Additionally, it will look at materials and new technology, primarily off-site manufacture and modern methods of construction (MMC), and the issues surrounding these, including how they link to skills. Ultimately, the work-stream will develop ideas for action for both government and industry, aimed at ensuring we have the capacity to deliver the homes we need. As with other work-

¹ The CIOB is at the heart of a management career in construction. We are the world's largest and most influential professional body for construction management and leadership. We have a Royal Charter to promote the science and practice of building and construction for the benefit of society, which we have been doing since 1834. Our members work worldwide in the development, conservation and improvement of the built environment. We accredit university degrees, educational courses and training. Our professional and vocational qualifications are a mark of the highest levels of competence and professionalism, providing assurance to clients and authorities who procure built assets www.ciob.org

streams on the National Housing Taskforce, it will also consider the implications of the UK's vote to leave the EU.

Call for evidence

To help inform the work-stream, the CIOB is launching a call for evidence to gather views, data and substantiation from industry, government, professionals and other interested stakeholders. This will remain open for 6 weeks, closing at 17:00 on Friday 9 September 2016. Please do not feel obliged to answer all questions; partial submissions focusing on a particular topic will be welcomed. Guidelines to help you with your submission can be found at the end of the document.

Please send your response to policy@ciob.org.uk

For general queries on the National Housing Taskforce and all the themes being covered please contact Lewis Johnston at the RICS (ljohnston@rics.org)

Background and context

It is rare that all resources needed to deliver a programme – the people, the money and the materials – are readily available at the same time. A report, *People & Money: fundamental to unlocking the housing crisis*, from construction consultancy Arcadis illustrates that over the past 15 years, labour has been seen as the biggest source of capacity constraint for the construction industry.² This was only relieved by high levels of migration from Eastern Europe from 2004 onwards; a CIOB report, *CIOB Perspectives: An analysis of migration in the construction sector*, provides more context in this respect.³ Now in 2016, a strong recovery from the construction industry is placing an even greater strain on resources than seen in previous upturns.

Forecasts from 2015 published by the Construction Products Association (CPA) anticipate that overall new build output will be up 26% by 2017 from 2012, with private housing activity forecast to grow by 55% over this period. These figures may yet be revised following the impact of the vote to leave the EU, but there is little reason in the short-term to see why they might change. With construction's well-documented skills shortage, labour availability can therefore be expected as the biggest constraint on expansion over the next five years.

Management professions, particularly site managers and construction managers, are also commonly seen to be a source of constraint. Management capabilities are critical to ensure increased levels of productivity and improved quality control. The UK Commission for Employment and Skills (UKCES) in its *Future of Work: Jobs and skills in 2030* report projects that the construction industry in 2022 will employ more people than at any time since 1990, with the biggest growth rates in management and technical occupations rather than in more 'traditional' site skills.⁴ If the industry is to make this shift in job roles, it must seek to attract young people from higher education backgrounds as well as upskill and progress those from trade backgrounds.

² Arcadis, [People & Money: fundamental to unlocking the housing crisis](#), June 2015

³ CIOB, [An analysis of migration in the construction sector](#), March 2015

⁴ UKCES, [Future of Work: Jobs and skills in 2030](#), February 2014

Arcadis puts the scale of the skills challenge into tangible statistics. Construction's labour productivity has not hugely improved in the past 20 years and, while many industries have invested in labour-saving technologies or methods in that time, construction – and house building in particular – is typically as dependent on labour now as it was then. Historically, the house building industry has employed 1.5 full time equivalent (FTE) workers for a year to build a typical dwelling.⁵ Of this, 1.1 FTE is associated with actual construction and 0.4 with management and administration. Based on this data, Arcadis estimates that the house building industry currently employs approximately 165,000 site workers, as well as a further 50,000 supervisors, managers, technical staff and administrators. If the industry were to deliver 80,000 more housing units per year, taking it to a total of 230,000 homes per year (widely agreed as the annual number necessary to build to address the housing shortage), it will therefore require a further 120,000 workers.

Hence it is abundantly clear that we will not achieve the desired quantity of new build housing without first curtailing the skills gap that exists across the sector.

Key questions

1. Are current government policies and initiatives supporting investment in skills for the house building sector? If yes, please provide examples. If no, what more can be done?
2. Is the industry itself doing enough to attract and train people? If yes, please provide examples. If no, what more can be done?
3. What can be done to improve labour productivity in the house building sector?
4. One way to alleviate skills shortages is to have a diverse and inclusive workforce. How can the industry improve its diversity to fill the skills demand?
5. The UK construction industry generally, and house building in particular, is reliant on a migrant workforce. In terms of skills, do you believe the house building sector will be affected by the vote to leave the EU? Please explain why.

Materials and new technology

A rapid rise in construction activity in 2014 helped the UK construction sector add jobs at a record pace, but also saw the price of building materials, primarily bricks, rise sharply as a result of scarcity. While this was a relatively short-lived incident and has since seen a return to the status quo, the impact of materials shortages and price hikes on the house building sector is an important issue to address.

Since the 1930s, masonry construction has remained the most popular method of building homes for a number of reasons. But as land prices increase and labour costs rise, alongside the obvious need to increase housing supply, the traditional house building model is becoming less economical and prone to incidences like the brick shortage in 2014, providing an opportunity for the rise in off-site manufacture (OSM) and modern methods of construction (MMC).

⁵ Home Builders Federation, [The Economic Footprint of UK House Building](#), March 2015

Evidence has shown that there are no national regulatory barriers to increased use of OSM in house building. Constraints are often based on commercial or supply-side challenges, as well as an aversion to risk. We need to bear in mind that the cost of materials used in the construction of new homes represents only a small proportion of the overall cost; savings from the implementation of new solutions or processes are likely to be modest in most cases, meaning there is no real financial incentive to introduce them.

Against this backdrop, though, is evidence from house builders themselves that they would not be able to build more than 150,000 units a year via conventional means, assuming they have the resources available immediately.⁶ This constraint in capacity, coupled with the need to build at least 230,000 homes a year, clearly means there is a market opportunity for OSM and MMC. So how can it be done?

Key questions

6. What can be done to effectively upscale and encourage the use of OSM and MMC solutions for the house building sector?
7. Are current government policies supporting investment in new technology for house building? If yes, please provide examples. If no, what more can be done?
8. 60% of all construction material imports in 2015 were from the EU, equivalent to £8.37bn in value.⁷ In terms of materials, do you believe the house building sector will be affected by the vote to leave the EU? Please explain why.

Skills, materials and new technology – is the business model the link?

There are inherent links between skills, materials and new technology in the house building sector. An increased use of OSM, for example, involves fewer people being employed on site, but may well create new roles in manufacturing plants or in the integration of off-site components with traditionally crafted elements. Separately, adoption of a new technology may well increase demand and price for certain materials, restricting capacity and curtailing the sector's ability to expand.

Alongside this is the role of the house building business model. Volume house builders provide a vital function in delivering the current level of new homes. However, the typical volume house builder business model does not necessarily align either with the need to employ and train thousands of new employees or with the benefits seen from increased adoption of OSM and MMC. In terms of skills, this may mean that long-term incentives to invest in training are weak, both with the house builder itself and throughout its supply chain. In terms of materials, the current business model's priority of valuing the ability to phase production with sales, rather than with the manufacturing process associated with OSM/MMC, means adoption of new technology is likely to be low.

Therefore it is valid to ask the question: is the current house building business model fit-for-purpose if we are to build the requisite number of homes?

⁶ Krug, D. and Miles, J. (2013) Offsite Construction: Sustainability Characteristics. Buildoffsite, June 2013, London.

⁷ Source: [Monthly Statistics of Building Materials and Components](#), Department for Business, Innovation and Skills & ONS, 2015

Key questions

- 9.** What barriers are there to long-term training and skills development? What incentives can be used?
- 10.** What barriers are there to investment in innovation and technology? What incentives can be used?
- 11.** What is the role for small and medium-sized house builders in addressing skills gaps? Do you have examples of any successful business models in smaller companies that have the capacity to be upscaled?
- 12.** What difference do technological innovations make to our needs for skills and materials?

Concluding remarks

In the space of a few pages, this paper has tried to cover the copious issues associated with skills, materials and new technology in a house building context. It cannot claim to be comprehensive and respondents are welcome to raise other issues that have not featured – for example, we have chosen to focus almost exclusively on the private house building perspective as it is the largest sector for housing supply, but there are likely to be solutions found outside of this narrow view. Because this is such a wide-ranging inquiry by the APPG, it is only likely to be able to cover one or two of the most important recommendations per theme. Some of the issues may see consultees’ opinions split, while others may have a consensus view.

- 13.** What therefore would you consider the absolute key priorities for the house building sector with regards to skills, materials and new technology? If you were limited to one or two recommendations what would they be?

Guidelines for submission

- Evidence should be presented in Word or PDF form and be sent by email to policy@ciob.org.uk
- It should include a brief introduction about yourself/your organisation and the reason for submitting evidence.
- The evidence must clearly state who the submission is from (i.e. whether from yourself in a personal capacity or sent on behalf of an organisation) and must include contact details.
- Be concise – we recommend keeping submissions at 4 pages or below. If your evidence is unable to fit these parameters, for example if it includes any case studies or data, these should be included as annexes or appendices in the same document.
- Upon submitting evidence, you agree for the CIOB and/or the RICS to contact you to follow-up on your submission for the purposes of the National Housing Taskforce. Your data will not be used for any other purpose.