Response:

HCLG Committee consultation on Modern Methods of Construction – Federation response

Executive summary

29 January 2019

We’ve responded to the Housing, Communities and Local Government’s consultation on Modern Methods of Construction (MMC).

Our response outlines:

- How housing associations have been exploring new ways to build, including the use of Modern Methods of Construction
- The barriers preventing widespread take-up of MMC
- How the Government can incentivise the development of MMC by supporting housing associations and manufacturers to deliver more MMC homes
1. Introduction

The National Housing Federation is the voice of housing associations in England. Our members own over 99% of housing associations homes in England, providing 2.7 million homes to around six million people. We are united in our ambition to ensure everyone can live in a good quality home they can afford.

As major developers of new affordable homes, housing associations have been actively exploring the potential for using Modern Methods of Construction (MMC) to support delivery. For example:

- Two housing associations – Swan and Accord – have set up their own offsite factories to build homes for their own stock and for others.
- A large number of housing associations have procured or partnered with offsite manufacturers on scheme delivery of all sizes, including testing innovative new approaches. We have given some examples at the end of this submission.
- Groups of housing associations have explored pooling their pipelines to aggregate demand and achieve economies of scale. The Building Better project, developed from within the Federation’s Creating our Future programme, is one example of this. Similar efforts are underway across the country.
- Housing associations have worked closely with construction bodies driving this agenda, including Build Offsite, the Construction Leadership Council’s work on MMC, and the GLA’s work with Mark Farmer on standardisation in MMC delivery.

However, take-up of MMC for housing in England lags behind other countries. Real and perceived barriers have prevented substantial uptake to date. Many of these stem from the relative immaturity of the MMC industry, which still mostly comprises small firms with limited track record of delivery. Housing associations are committed to MMC and the potential benefits it brings, and keen to work with the Government and the construction sector to overcome the barriers which still hold back delivery.

We think there is an important role for the Government to support the development of MMC by:

- supporting MMC manufacturers to grow and develop the evidence base for their products
- supporting housing associations and local authorities to collaborate and aggregate their demand for homes, to give the surety of demand necessary for offsite manufacturers to develop
- incentivising and supporting standardisation across the sector to provide a framework around which it can grow
- promoting MMC as a career path and planning for it in the design of apprenticeships and T-Levels
- continuing to use grant programmes to support MMC rollout, including by accommodating the additional upfront costs often encountered at present.

The National Housing Federation would be happy to provide further evidence to the Committee. We would welcome the opportunity to provide oral evidence. And we are happy to facilitate visits to MMC factories or developments that the Committee might find helpful during the course of their inquiry.
2. What are the benefits of MMC, and how can they sustainably boost the housing supply?

The potential benefits of MMC, and particularly offsite manufacture, are significant and well covered. They include:

**Improved quality and whole-life performance:** Factory-based manufacturing, with appropriate training, manufacturing techniques and quality assurance mechanisms should consistently deliver higher quality products than on-site construction. As long-term asset holders, housing associations have a particular interest in quality and whole-life performance of homes.

**Faster build times:** Offsite construction has the potential to deliver faster build times as much of the work is done away from the site through more efficient manufacturing processes. This is particularly useful for housing associations where faster build-out means rent collection can begin more quickly.

**Reduced upfront cost:** MMC has the potential to deliver cost savings through economies of scale in the manufacturing process. This relies on large, steady throughput to achieve maximum capacity in factories.

**Overcoming skills shortages:** Construction skills shortages will hold back housing delivery in future years unless alternative solutions are found. The construction workforce is ageing and likely to be impacted by post-Brexit immigration reform. Recruitment to construction jobs has been difficult in recent years. MMC delivery has the potential to solve these issues in two ways:

- reduced demand for traditional trades (bricklayers, carpenters, etc) compared to traditional construction, since much of the work previously carried out on site is completed more efficiently in a factory
- increased demand for more flexible, skilled, technology-based roles in design, project management, and delivery which should be more appealing to new entrants than traditional construction jobs.

**Reduced site waste and environmental impact:** MMC should reduce waste through more efficient factory-based manufacturing techniques, and facilitate more environmental manufacturing methods and materials.

**Reduced impact on surrounding area:** Offsite manufacturing reduces construction time on site, and reduces the noise and disruption to communities around the site of new homes.

**Improved health and safety:** controlled factory environments should be safer for employees than onsite construction, reducing health and safety incidents. And more broadly, the use of higher quality manufactured products, more traceable construction processes and Building Information Management (BIM) should deliver safer homes for residents.
3. What are the primary risks of increasing the use of MMC?

Some of the factors which make housing associations wary of greater investment in MMC at present include:

**Fears over supply chain robustness and lack of interchangeability of products** should a manufacturing firm collapse. The MMC industry is mostly still comprised of young, small firms with capital-intensive setup costs and small order books, which makes them financially vulnerable. And unlike in traditional construction, manufacturers cannot easily be switched halfway through a project if one collapses, because MMC products are not often standardised or interchangeable. This also makes the longer-term maintenance of stock more difficult, if replacement components cannot easily be sourced.

**The lack of robust evidence for many of the benefits outlined above**, particularly given the wide variety of types of MMC, with the need for an evidence base specific to each approach. While many housing associations report high quality products, others have had negative experiences of the quality of offsite-manufactured components or homes. And while some of the technologies have been extensively used and tested, others are relatively new and potentially have undiscovered longer-term safety or quality issues.

**The lack of evidence for cost savings, either upfront or in the long term.** The majority of housing associations currently find MMC to be as or more expensive than traditional construction, given the scale of project they're seeking to deliver. Given the focus on delivering value for money, this is a significant disincentive to investment in offsite. In part this is because economies of scale in manufacture are not yet being realised. It is also because the evidence is still weak for the claims of lower whole-life costs, which might offset higher upfront cost. This is likely exacerbated by the lack of standardisation referenced above, if difficulty accessing non-standard or bespoke components for repairs and maintenance adds to the projected cost.

**Perceived and real incompatibility with the planning system.** The flexibility of traditional construction means that construction contracts are usually tendered only after planning permission is granted, with the contractors able to deliver whatever has been agreed in planning. In contrast, with MMC the technology used constrains the design options, and therefore planning permission must be sought in close collaboration with the manufacturer who will deliver the homes. This requires a new approach to contracting and management of the development process, and increases the risks referred to above (for example if a manufacturer collapses after planning permission has been achieved, then planning might need to be re-sought with a new manufacturer). This barrier is a particular problem for housing associations who often buy land with planning permission already in place, as this heavily constrains the use of MMC. Finally, MMC is not well understood by planners and planning committees, who can associate it with standardised designs and poor or uncertain quality, although this perception is increasingly untrue.

**Difficulty in accessing warranties, insurance and lending for MMC-built homes.** A lack of understanding and evidence around MMC homes on the part of financial institutions has held back MMC development in the past. Housing associations need to be able to use MMC built homes as
security to borrow for future investment, and buyers or shared owners need to be able to secure a mortgage against them.

**Lack of skills, training and accreditation to deliver offsite manufacturing**, both in the factory and for on-site assembly. MMC is often considered a potential solution to the construction skills crisis, but it will require new and different skills to deliver. As an industry in its infancy the training and accreditation routes are not yet established either for people at the start of their careers (via apprenticeships and entry-level graduate jobs) or switching from more traditional construction sector.

### 4. How could the Government, Homes England and local authorities a) increase demand for MMC to meet its homebuilding targets and b) support the construction industry in increasing the use of MMC?

Housing associations are keen to deliver more homes via MMC and the potential benefits are well understood. Therefore to increase demand, the Government, Homes England and local authorities can help remove the barriers which currently stand in the way of greater take-up:

**Support offsite manufacturing firms to grow and develop the evidence base** for their products, including through better use of Building Information Management (BIM) and data collection. This could be through revenue support, or support for data management and collection systems which allow an evidence base to be developed.

**Incentivise and support standardisation across the sector** to increase the robustness of the MMC market overall. Greater standardisation of key parameters, processes and top-level layouts and designs would reduce risks for clients and give manufacturers more certainty over costs and programme. Standardisation at this level does not equate to visual standardisation, which often puts off designers and planners. Several pieces of work are underway, including by the British Standards Institute to develop a Publicly Available Specification, the Building Research Establishment in its development of the BPS 7014 standard, and work by the GLA and Cast Consultancy to develop a set of common design parameters. Work to support these, and use funding and other incentives to drive take-up amongst manufacturers will be important.

**Provide support to efforts to bring housing associations and local authorities together** to aggregate demand for offsite products. This would allow groups of housing associations to jointly procure, ensuring a sufficient order book to deliver economies of scale and maintain surety of demand across small and medium-sized sites. Examples of this are underway across the country, and include the Building Better project which was developed as part of the National Housing Federation’s Futures programme\(^1\). The project will create a set of ready to use designs used by eight housing associations in the first year and a further 53 in three years’ time. As the designs are digital by default, this process will provide housing associations much greater access to the performance of their homes, enabling significant savings on maintenance costs. Government backing via Homes England would help these initiatives achieve the scale necessary to unlock MMC delivery.

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\(^1\) [http://future.housing.org.uk/the-greenhouse/building-better/](http://future.housing.org.uk/the-greenhouse/building-better/)
Consider providing a level of guarantee to housing associations contracting with MMC manufacturers, to give housing associations greater confidence to invest without financial risk in the event of a manufacturer collapse. This would not affect the delay and possible costs involved in finding a new supplier and adapting the development accordingly, but would provide at least a level of additional confidence to developers and planners.

Influence the planning system so that it is more conducive to MMC delivery, for example by supporting training for planners and planning committees on the nature of MMC delivery, the design possibilities with MMC, and the evidence on quality and long-term value.

Promote modern manufacturing as a career path and ensure a comprehensive apprenticeship and training approach is in place to ensure the skills needed to deliver MMC at scale are available. This should include developing appropriate apprenticeship standards, incorporating MMC into the relevant T-levels as they are rolled out, and working with adult education providers to ensure routes to retraining for existing construction workers where necessary.

Continue to support MMC rollout in grant programmes. Homes England already provides grant to deliver innovative MMC projects (for example Home Group’s work on the Innovation Village in Gateshead2) and encourages housing associations to deliver a proportion of their affordable housing starts via MMC. We believe that incentivising and supporting housing associations with the additional upfront costs of MMC, and providing backing in other innovative ways, is the right role for Homes England to play via its Affordable Homes Programme. This approach avoids the risk that housing associations are forced in to delivering homes via MMC in a way that is unsustainable, or delivers worse quality products with long-term impacts.

5. How can small and medium-sized housebuilders better utilise MMC, including to support innovation and competition in the construction industry?

Collaboration is vital for small and medium-sized housing associations accessing MMC, because individually they are often unable to provide the scale and surety of demand necessary to deliver the economies of scale and long-term order book which manufacturers need to make MMC viable. By aggregating their pipeline, a collaboration of small and medium housing associations has the market power to drive innovation in MMC, work with a range of factories to stimulate competition, and secure sustainable supply.

Access to land is one of the biggest barriers to small and medium-sized housing associations building, including via MMC. Supporting small and medium-sized housing associations to develop the skills necessary to engage in the land market, and making land more easily available, will be vital to enable them to use MMC in delivery.

6. **How can challenges related to access to finance (for both homebuyers and developers) be overcome?**

Considerable work has been undertaken over the last few years to improve access to mortgages for individuals buying MMC-built homes, and for housing associations seeking to use MMC-built homes as security for subsequent loans. In particular, the Buildoffsite Property Assurance Scheme (BOPAS) has made a significant difference by accrediting MMC-built homes and giving confidence to financial providers.

This work has seen some success, with housing associations reporting fewer problems securing finance against MMC-built homes. However, there are still issues to overcome where MMC overlaps with other non-standard products, for example some housing associations have reported difficulties sourcing mortgages for MMC-built shared ownership homes.

Success so far has been achieved through working closely with financial institutions and others to educate them about MMC, and careful design of products like BOPAS which meet their need for additional surety and assurance. Future work should follow similar lines, and we’d point particularly to the work of MHLCG’s MMC Working Group for Assurance, Insurance and Finance, led by Mark Farmer, which is actively addressing many of these questions.

7. **Case studies**

A significant number of housing associations have adopted the use of MMC. The following case studies provide some examples from across the country where housing associations have set up their own offsite factories, are participating in pilot studies and are investing in MMC research and digital modelling.³ We are happy to facilitate visits for the committee to housing associations delivering MMC.

**Accord** is a housing association operating through the Midlands. They have set up an offsite manufacturing arm, LoCalHomes, which delivers homes for Accord as well as other housing associations and developing councils. LoCalHomes has been operating for six years producing closed-panel timber frame systems. The panels are delivered to site with completed windows and cladding, ready for assembly. The business recently moved into a new 56,000 sq.ft factory which has the capacity produce up to 1,000 homes per year and will allow LoCalHomes to start to manufacture integrated kitchen and bathroom volumetric pods.

**Home Group** is a housing association operating across the UK managing over 55,000 homes and with development plans to deliver more than 12,000 new homes. The association is undertaking a pilot study (supported by Homes England) to compare several different offsite manufacturing systems with traditional construction at their ‘Innovation Village’ in Gateshead. Following the completion of the study Home Group intend to significantly increase the percentage of their development pipeline

³ These and other case studies are available in more detail in Modern Methods of Construction: who’s doing what (NHBC Foundation) https://www.nhbcfoundation.org/publication/modern-methods-of-construction-whos-doing-what/
delivered using offsite manufacturing technology. The association have recently announced further plans to deliver 49 new affordable modular properties in Kent as they look to build on the success of the pilot.

**Orbit Group** is a housing association operating across the Midlands, East and South East of England and currently manages over 39,000 homes. Orbit is investing in offsite research and development including creating a series of offsite design standards and volumetric housing types and focusing on the role that digitalisation can play through creating a Building Information Modelling (BIM) library for future developments to be built from. Orbit’s private sale housing all utilise MMC systems and Orbit intends to continue to maximise the offsite manufactured content of their private sale products.

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