

## Written evidence submitted by Buildoffsite [MMC 034]

### Submission Overview

Buildoffsite is a membership organisation which has representation across the value chain of construction and housing. We are in a unique position to comment; having members from public and private sector clients, contractors, manufacturers and consultants; as well as working closely with Government Departments, the Construction Leadership Council and other Housing bodies including the National Housing Federation and Housing Forum. The responses in this submission are based on Buildoffsite's insight gained from our members and internal industry expertise.

### 1. Executive Summary

#### **The benefits of MMC, and how can they sustainably boost the housing supply.**

Offsite solutions add value in a controlled factory environment. This has the major benefits in each of the following areas:

- **Quality:** Repeatable processes in factory environments enable higher quality on site. This helps mitigate the skills shortage and an ageing workforce in the coming years.
- **Safety:** Reduced work on hazardous sites to minimise the risk of accidents. Also fewer vehicle movements to improve safety and disruption in the locality.
- **Programme:** Construction time on site typically reduced by 50% with potential for shortened pre-construction time with integrated digital design and planning.
- **Cost:** Improved whole life cost from high performing offsite solutions. Dramatically reduced material waste and potential to at least double labour productivity.
- **Risk:** Reducing project cost and programme uncertainty with reliable, repeatable factory and on site assembly processes.
- **Employment:** MMC gives an opportunity to recruit new people to the construction workforce without current unattractive working conditions and irregular travel.
- **Environmental:** Less material waste and more efficient logistics, for materials people and plant to reduce CO2. Improved energy performance of MMC homes.

The above benefits will be achieved with a collaborative client / consultant / supply chain; rather than the often adversarial approach to procurement currently.

#### **The primary risks to increasing the use of MMC.**

- That well-intended but under-funded / resourced suppliers risk over-promising their capability to deliver a quality product and capacity to meet client programmes.
- That an isolated high-profile failure will undermine confidence in all MMC suppliers.
- That too wide a diversity of solutions confuses the market and restricts uptake.

#### **How Government, Homes England and local authorities can:**

##### **(a) increase demand for MMC to meet its homebuilding targets**

- Develop a mechanism for a consistent pipeline of demand.
- Set challenging metrics for housing energy performance, quality and speed of build.
- Avoid the promotion of a single solution (e.g. Volumetric systems)
- Set annually increasing quality, cost and performance requirements.

##### **(b) support the construction industry in increasing the use of MMC**

- Include a presumption in favour of Offsite / MMC where it delivers best value.
- Underwrite approved providers supply to eliminate the need for costly bonds or financial guarantees which add cost and make some solutions unviable as a result.

### **Small and medium sized housebuilders can better utilise MMC by:**

- Joining collaborative organisations, like Buildoffsite and National Housing Federation,
- Accessing short and local offsite solution training to understand MMC potential.

### **Challenges related to access to finance are not the core area of expertise for Buildoffsite, but they may be overcome by:**

- Homebuyer finance may be mitigated by retaining public land ownership rather than sale; thus creating a more affordable public leasehold model.
- Not for profit developer finance would be improved by enabling LAs / HAs to borrow against the market value of the land, plus the future rental revenue, without its sale.
- For manufacturers a government backed 'Business Investment Guarantee' to underwrite the finance of approved suppliers.

## **2. MMC in Context**

The term MMC can sometimes be unhelpful as it implies increased housing supply needs new technologies and approaches; rather than better executed current solutions. Buildoffsite finds that the term 'modern' causes confusion and debate whether, for example, prefabricated panels or structural elements fit the definition. Our contention is that any offsite approach, that adds value away from the construction site, supports the benefits outlined below. We suggest that there should be no hierarchy of solutions and simple timber frames and large format blocks can be just as effective as volumetric and panelised systems in delivering additional, high quality housing supply. Buildoffsite encourages government and the wider industry to be completely agnostic to the system, material or the history of the solution.

## **3. What are the benefits of MMC, and how can they sustainably boost the housing supply?**

It should be emphasised that the following benefits of MMC are not guaranteed: A poor offsite manufacturer and their delivery partners can negate potential improvements with a badly designed or executed approach. Clients can have a major impact on the delivery of the benefits. If they are inconsistent in their technical, design, volume and procurement approach: they add complexity and cost to the supply chain. Complexity and variability are two key obstacles to an optimised industrial solution that delivers best value.

MMC with increasing work carried out in a controlled factory environment has major benefits in each of the following areas:

- **Safety:** Reducing labour in often hazardous and weather affected sites to minimise the risk of site accidents and transfer value to a safer manufacturing environment. In addition well-planned offsite logistics dramatically reduces the number of vehicle movements for staff and material; improving safety in the site locality.
- **Quality:** A key benefit of Offsite solutions is the repeatability of process achievable in a factory environment; this leads to higher quality on site. Even with the most diligent site teams weather conditions on site make delivering a quality outcome more difficult than in a factory environment. With the additional factor of the growing skills shortage there will be increasing challenges of capability and cost in the coming years. In factory environments it is faster to recruit and train staff to deliver repeatable tasks.
- **Programme:** With MMC solutions construction time on site typically reduced by 50% and more and this is hugely valuable for rental markets; both private and not for profit. With further supply chain investment in integrated digital design and planning there is

also potential for greatly shortened predesign and construction time. With pre-approved pattern book planning end to end housing delivery can be transformed.

- **Risk:** The two key concerns of housing clients are predictability of outturn cost and programme. Both have a major impact on development viability. An industrialised MMC process reduces variability of both programme and cost by moving to reliable, repeatable factory processes unaffected by weather and less susceptible to skills and management availability. With reduced activity and 'plug and play' on site assembly processes, the assembly of MMC elements, panels or volumetric modules attracts less risk and uncertainty than traditional site processes.
- **Cost:** In traditional construction productivity has plateaued and there is still significant waste of materials on site. BSRIA has identified the potential to double productivity of site staff by eliminating avoidable delays but it is proving difficult to deliver. A factory process should be inherently more productive than a site task and there is potential to take productivity from 30% to 80% in a well-managed offsite factory. This can deliver a cost saving to the end client with a consistent pipeline of work and healthy competition in the supply chain.
- **Employment / Skills:** An industrialised MMC supply chain can be designed and engineered to be more attractive to a younger and more diverse workforce. By minimising activity in 'all weathers' and utilising technology to reduce physical and administrative tasks; there is an opportunity to recruit new people to join the construction workforce. A well designed and managed factory environment provides more attractive working conditions (safer, warmer, drier and better facilities) and eliminates the need for lengthy and irregular travel to site of traditional construction.
- **Environmental:** Factories can be optimised to minimise material waste below 1% of total, whereas traditional construction has been shown to vary typically between 18% and 22%. MMC should provide substantially more efficient logistics as deliveries to traditional construction sites are seldom well planned. There is also an environmental burden of multiple vehicles to get site teams to work which is greatly reduced with MMC. Site plant is also less CO2 efficient than factory processes so that a shift of activity to a factory reduces the impact of site machinery, site accommodation and welfare facilities.

#### **4. What are the primary risks to increasing the use of MMC?**

With many new start-up businesses Offsite solutions risk over-promising on capability to deliver a quality product and capacity to meet client delivery expectations. There have been examples of suppliers failing mid-project; which gives clients a concern that MMC is a risky option per se. As a result suppliers are asked to provide bonds or financial guarantees which add cost and so make some solutions unviable.

**In summary the risks are:**

- That well-intended but under-funded / resourced suppliers risk over-promising their capability to deliver a quality product and capacity to meet client programmes.
- That an isolated high-profile failure will undermine confidence in the MMC market.
- That too wide a diversity of suppliers and solutions with competing performance claims may confuse the market and restrict uptake.

#### **5. How could the Government, Homes England and local authorities**

##### **(a) increase demand for MMC to meet its homebuilding targets ?**

- Buildoffsite encourages Homes England to develop a mechanism to create and reward those that deliver a consistent pipeline of demand by region. In addition to encourage long-term partnerships between LA / HA / private developers and their

supply chains: This will support and enable a process of continuous improvement that will enhance quality, cost and programme performance.

- There should be challenging outcome metrics for housing energy performance, quality and speed of build. These will encourage investment in highly capable offsite solutions rather than selecting suppliers based lowest quoted cost (which is unlikely to be the outturn cost). These metrics can be different by region and geography and can be (gradually) adjusted over time to drive superior performance.
- To drive further improvement: quality, cost and performance requirements should increase annually, with a consistent and clear trajectory (as with the Code for Sustainable Homes). Preferential grant rates or access to additional Homes England land for developers that meet or exceed target metrics would be a significant incentive for improvement.

**(b) support the construction industry in increasing the use of MMC?**

- Include a presumption in favour of Offsite / MMC where it delivers best value on an individual Homes England land disposal. This would in line with the five other departments adopting the Construction Sector Deal and should not undermine or reduce capacity in traditional construction.
- Launch a Business Investment Guarantee commitment for Housing that could operate in a similar way to Export Finance Credit Guarantees to eliminate the need for costly bonds or onerous parent company guarantees which add cost and make some solutions unviable as a result.

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

- Work with collaborative organisations, like Buildoffsite the National Housing Federation and the Housing Forum to engage with regional builders and support them to trial and then adopt offsite and MMC solutions.
- Accessing short and local offsite solution training to build a greater understand of the potential of MMC solutions and connecting with suppliers to develop the design and technical skills to make MMC solutions mainstream.

Subsidising the activity of such industry organisations and training will accelerate the understanding and adoption of MMC from medium sized builders, clients and professionals alike. All three organisations have the potential to deliver additional industry engagement and knowledge transfer, but are limited by their membership funding models.

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

This area is not a particular area of expertise for Buildoffsite, but we offer the following as ideas rather than full solutions.

- Homebuyer finance can be mitigated by retaining public land ownership rather than sale; thus creating a more affordable public leasehold model. With land inflation taken out of the affordability model there can be a solution for first time buyers and lower income families to own. Creating a two-tier ownership model may have challenges to overcome.
- Not for profit developer finance would be improved by enabling LAs / HAs to borrow against the market value of the land and avoiding the necessity to sell the land to fund development capital. If the future rental revenue can also be leveraged in a similar way to Student Loans the impact on government borrowing may be mitigated.

- Private developer and Build to Rent (BTR) developers do not currently seem to have an issue with access to investment finance with a buoyant housing market.
- For manufacturers a government backed 'Business Investment Guarantee', as above, to underwrite the finance of approved suppliers will reduce the burden of a project bond or the necessity of a significant Parent Company Guarantee.

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