

MANUFACTURED CONSTRUCTION ROUNDTABLE: SUMMARY OF DISCUSSION



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About the CSJ and Make UK



The Centre for Social Justice is an independent think tank, established to put social justice at the heart of British politics. Moved by shocking levels of disadvantage across the nation, it studies the root causes of Britain's acute social problems in partnership with its Alliance of over 750 grassroots charities and people affected by poverty. This enables the CSJ to find and promote evidence-based, experience-led solutions to change lives and transform communities. The CSJ believes that the surest way to reverse social breakdown – and the poverty it creates – is to build resilience within individuals, families, and the innovative organisations able to help them.



Make UK, The Manufacturers' Organisation, is the representative voice of UK manufacturing.

Collectively we represent 20,000 companies of all sizes, from start-ups to multinationals, across engineering, manufacturing, construction, technology and the wider industrial sector. We directly represent over 5,000 businesses who are members of Make UK. Everything we do – from providing essential business support and training to championing manufacturing industry in the UK and the EU – is designed to help British manufacturers compete, innovate and grow.

From HR and employment law, health and safety to environmental and productivity improvement, our advice, expertise and influence enables businesses to remain safe, compliant and future-focused.

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Harnessing the Potential of Manufactured Construction

Background and context.

- The CSJ's landmark *Two Nations* report which assessed the state of poverty across the UK found that housing was ranked as the second most significant factor holding people back from living the life they wanted to.¹
- It also found that nearly three quarters of the most deprived worry about the cost, security and quality of their housing.²
- At the same time, the housing sector offers tremendous opportunities for skills development, good jobs, investment, and regional economic development.
- Manufactured construction has the potential to contribute to housebuilding targets, economic growth and good work. Off-site projects have faster timelines, sustainable materials, and less disruption than traditional methods of construction.

What is manufactured construction?

- Manufactured construction is the pre-manufacturing of entire sections of buildings panels offsite. The two main categories of manufactured construction are included in the seven categories of Modern Methods of Construction:
- Category 1: Pre-manufactured (3D volumetric) Construction: This method involves building entire sections of building offsite.
- Category 2: Pre-manufactured (2D panelised) Construction: This method involves building panels or frame that are assembled on the construction site.
- This technology has improved considerably over time. HTA Design and developer, Tide, completed Europe's tallest manufactured tower in Croydon.
- Manufactured construction creates efficiencies in the production process that enable economies of scale, strong quality control, and minimal wastage in comparison to traditional on-site housebuilding. As a result, manufactured homes are built 50 per cent faster to make from start to finish than bricks and mortar homes.³
- Furthermore, building off-site can halve emissions when building a home, cutting the amount of Co2 produced as a result of construction by up to 83 per cent.⁴

Manufactured construction presents an opportunity to turbo-charge skills and improve the quality of work in the construction sector.

- The decarbonisation of homes in the social housing sector (and beyond) presents an opportunity to bring quality, skilled work opportunities to places where unemployment and economic inactivity is an issue. This would spread growth and opportunity to regions of the UK that have suffered from historic under-investment.
- Traditional on-site construction requires workers to travel to building sites, often across considerable distances. This creates inherent limitations to the conditions of employment. Commute times can be long and inconsistent, and this can be challenging for those with childcare responsibilities.
- In addition, on-site construction typically means working outdoors which can be cold and wet in the winter months, impacting on health and productivity.
- By contrast, off-site factories can provide better conditions for workers – which are warm, dry and with consistent shift patterns – enabling a greater pool of employees to join the housebuilding workforce, including women, who are typically under-represented in construction roles, and an increase in productivity.
- Building on this, there are opportunities for government to identify how manufactured construction can widen opportunities for upskilling and employment in the housebuilding sector.

Manufactured construction has an important part to play in reaching the government target of 1.5 million more homes over the next parliament.

- We do not have enough homes. Over 1.2 million households are on waiting lists for social housing.⁵ Over 130,000 children are living in temporary accommodation.⁶ In addition, we have failed to meet our national housebuilding target of 300,000 homes per year since the late 1960s.⁷
- Manufactured construction can deliver housing that is less expensive due to the considerable economies of scale that can be achieved compared to conventional housebuilding. This can help social housing providers to extend their housing development pipelines at lower cost.
- The manufactured construction sector offers an opportunity for extending the supply of social and affordable housing.
- In addition, manufactured homes that have better fabric values and lower running costs can be delivered at a lower cost differential than traditionally built homes — a factor that can deliver for many on modest incomes. Manufactured homes can cost 55 per cent less to heat than the average UK home and 32 per cent less than traditional new builds, delivering savings of up to £800 a year for a three-bedroomed family home.⁸

Manufactured construction can promote regional economic development.

- At the heart of the government's agenda is the mission to bring economic growth to all regions of the UK. House building is also at the centre of the government's economic mission.⁹
- Opportunities to grow local economies through traditional methods of construction are limited. This is because demand for housing is especially high in the South of England and, more broadly, in areas where there is demand for labour like London.
- Manufactured construction turns this on its head. Homes for the South can be built, in entirety, by workers and communities in the North. As such, manufactured housebuilding can be an extremely effective tool for spreading opportunity and economic growth.
- However, two major off-site factories in Yorkshire closed last year. The government must understand why manufacturers have closed down in order to support sustainable growth in the sector over the coming years. Initial costs are higher than traditional methods of construction, the regulatory landscape is changing and there is still a lack of understanding among major developers.

Manufactured construction can improve energy security and support the UK to reach net zero goals.

- Manufactured construction is both more efficient and kinder to the environment with substantially less waste, producing 90 per cent less materials wastage than traditional builds.¹⁰
- Off-site construction heavily reduces the amount of transport access needed for building sites, with 80 per cent fewer vehicle movements to sites and therefore far less local disruption and pollution of the environment.¹¹

Discussion Summary

Note: The roundtable discussion was held under Chatham House Rules meaning that all contributions were anonymous.

The roundtable discussion highlighted the potential of manufactured construction to deliver affordable, sustainable and high-quality homes, whilst addressing skills and capacity challenges in the UK construction sector. Participants emphasised that while manufactured construction can expedite projects, sometimes up to 35 per cent faster compared to traditional construction, adoption of off-site methods is hindered by limited incentives.

Economic benefits of manufactured construction were noted, including lower long-term operational costs, good job creation, and opportunities for upskilling the workforce. Employment challenges, such as creating a stable skills pipeline, were discussed.

Participants underscored the importance of aligning government strategy with industry efforts to foster collaboration and meet the goal of 1.5 million new homes. The need for social value was emphasised, with examples of positive impacts such as working with ex-offenders.

Key themes included the need for greater incentives, addressing the tension between capital and revenue spending, social value, government and industry collaboration, and public perception of new housing.

Incentives and regulations.

Participants highlighted the need for incentives and regulatory changes to drive greater adoption of manufactured construction. One speaker emphasised the importance of incentives, drawing a comparison to the electric vehicle market:

"We talk about MMC being like the car market when electric vehicle incentives came in. There is nothing of that sort for MMC. This could be anything from building an environmentally friendly home that could be exempt from stamp duty, or getting a certain type of rebate for delivering really high energy efficiency, because in terms of price, if you're trying to build as cheaply as possible, MMC is probably not for you. But if you are trying to deliver high quality homes that are energy efficient and not going to require huge retrofit, you want to go MMC."

Another speaker discussed the potential for the Building Safety Regulator (BSR) to provide incentives and fast-track processes for manufactured construction projects:

"It feels like there could be low hanging fruit, for instance, mechanisms within the BSR to get through a registered system within six weeks, that doesn't cost money but could make a significant difference to building above 18 meters."

Speakers suggested this type of regulatory support could help offset the delays and increased financing costs caused by the BSR's current focus on planning remediation. One speaker raised concerns that high rise submissions to the BSR are taking almost twice as long as they should be. Delays are leading to viability issues, particularly for affordable housing. As manufactured construction schemes can deliver sites at 25 per cent to 35 per cent faster, the sector can help with viability problems and deliver housing much faster than traditional methods.

One speaker also emphasised the need for government to provide clear direction on the priorities for the housing sector, whether that is maximising supply, delivering net-zero homes, or other objectives. They stated:

"What is the brief for the sector? Because it's very difficult to be all things to all people, and everything has its place. In terms of an overall strategy, it's very difficult to deliver."

Overall, the participants highlighted the critical role that incentives and regulatory changes could play in accelerating the adoption of MMC to address the UK's housing challenges. Key areas of focus included energy efficiency, planning processes, and a coherent government strategy to guide the sector.

Economic benefits and employment challenges.

Speakers explored the potential economic benefits of manufactured construction, as well as the employment challenges it presents compared to traditional construction. On the economic benefits, one speaker emphasised the need to occupy the entire site rather than partial projects:

"To realise the economic benefits of building we need to be able to occupy the entire site, rather than partial units on a site, so not just 10 or 20 MMC units on a site of 500 units. There is lost efficiency otherwise. Developers still like to experiment with MMC rather than seeing it's been around for a very long time."

One participant spoke about the need for a stable pipeline of orders for the sector to be able to grow sustainably. A different speaker explained how factories needed to be operating at a certain scale to be profitable in the long-term.

Another noted that the employment model of manufactured construction challenged the employment model of traditional construction. The skills agenda needs refocusing on people who are able to work in the manufactured construction sector not just traditional construction.

One comment highlighted the importance of a long-term vision for housing, stating that if people are looking for long-term value, then the benefits of manufactured construction become more apparent. While the initial capital spending is usually higher for manufactured construction projects, the operational costs in the long term are usually lower.

"If people are thinking of a long-term vision, for example, 'I'm going to have to look after this home for a long period of time, and I want it to be energy efficient for my users', then people will look more at MMC."

However, there was a discussion around the assertion that people would be willing to pay more for housing built using manufactured construction. One speaker acknowledged the challenges of competing with traditional construction costs, stating:

"So, if you were looking at a two up, two down, regular house in a green field, probably what we're delivering round the table is 10 per cent to 15 per cent more expensive than traditional cost, which is where you struggle with the private sector...the harsh reality is that if it costs more money, the private house building sector will not naturally do it. There are other instances where there are very strong incentives for MMC, for example when you go higher."

This indicates that for higher-density or more complex building types, the advantages of manufactured construction become more apparent and can outweigh the initial capital cost. However, the speaker also noted that there is significant demand from developers for all types of housing and that the manufactured construction sector needed to get housebuilders to buy into what they do. The challenges many participants raised was that if there is no regulatory or financial incentive, then private housebuilders would not change their construction model for general sites.

Overall, this part of the discussion highlighted the challenge of convincing private sector developers to pay more for manufactured construction, while also acknowledging that the economic case can be stronger in certain applications where the benefits of speed, quality and efficiency outweigh the upfront cost differential.

Other policy areas raised by participants included the lack of research and development funding from government to the manufactured construction sector, the benefits of standardising certain types of homes to lower costs and opening up more sites to SME developers to give them a competitive advantage.

One speaker mentioned that the manufactured construction sector has been focused on delivering difficult sites and social benefit, but that there could be wisdom in primarily focusing on delivering homes, with some social benefit, and that the sector would then build momentum.

Discussion was held on the potential of manufactured construction to drive up standards in construction employment:

"How do we create a construction sector that attracts people in, the number of people working in construction just keeps dropping and it's not an attractive sector. So how do we attract that next generation and new entrants. I think MMC really opens up that opportunity."

Another contributor spoke about how the construction sector needs to consider the needs of "the people that are behind the buildings". In construction work, workers are often let go at short notice and struggle to find secure work. Manufactured construction offers higher paying jobs for many workers.

Social value and manufactured construction.

Participants highlighted the potential social value and benefits that manufactured construction can deliver, beyond just the economic considerations. One speaker emphasised the importance of looking at manufactured construction from a "household finance point of view in terms of sustainability", not just from an upfront cost perspective.

One participant stated that manufactured construction can deliver good social value and can upskill people who have limited employment prospects. This speaker shared how they were working with former prisoners who were on remand to upskill and train them. Another participant spoke about the positive story that the manufactured construction sector had to tell:

"There are massive opportunities about skills. You can open up the industry, deal with the problems with skills, health and safety at work, with all of these issues we have a positive story to tell."

Concerns were also raised about the social value of some new housing built using traditional methods of construction:

"One thing that really worries me is that we're building things now that in three or four years time will need retrofitting. Our registered providers and housing associations can't afford that. So how do we push up the standards of home as that would really help the manufactured sector that does lean into better quality, airtight homes that are good and that people want to live in."

One speaker addressed the difficulty of breaking into the business models of large developers. They said while their business model was delivering large profits for shareholders, it was not securing positive outcomes for the nation. They went on to say how an expansion of the manufactured construction sector was also a challenge for small builders and that this needs to be considered:

"So, it does need a push from government, it does need far more collaboration between developers, housing associations and councils, because otherwise we will see more shut downs and that would be really sad and an absolute move backwards."

Overall, the discussion went beyond just the economic case for manufactured construction, with participants recognising its potential to deliver broader social value and benefits - from household affordability to employment opportunities and community impacts. Ensuring quality and affordability was seen as crucial to realising this social value.

Government and industry collaboration.

A recurring theme throughout the discussion was the need for greater collaboration between government and the industry to support the adoption of manufactured construction. One speaker highlighted the lack of a coherent government strategy, stating:

"We had a chance to lean in with [MMC] and we didn't. Government couldn't tell you how many MMC homes are built currently. The standardisation work, the incentives in the Affordable Housing Programme 2021-2026 have been underutilised, they may have helped some schemes, but it has not helped anywhere near as much as it could have done. It made a couple of big bets on two big startups which failed. It's ignored many other funding decisions. This government has a real opportunity to re-write the first draft of MMC housing policy. But there needs to be some serious changes."

This suggests that government initiatives to support manufactured construction have so far been fragmented and underutilised, pointing to the need for a more coordinated and effective strategy.

One speaker also emphasised the importance of collaboration between developers, housing associations and councils to achieve the necessary scale and standardisation for manufactured construction:

"You need collaboration as well. And this is a real problem between housing associations, councils and, dare I say it, developers as well. They've all got to be prepared to collaborate to get that scale and standardisation."

Discussion was held on the government's target for 1.5 million homes and ambitions for a new generation of social and affordable housing. The number of homes being built a year will need to double to meet the government's target. One speaker said that the sector needs to start building capacity now for the affordable homes target the government has set.

Participants raised concerns about the government's ability to meet its target to build 1.5 million new homes without an expansion of the manufactured construction sector. One speaker said:

"I do see MMC coming to the rescue, even if things do go to smaller players, but the bigger players will have to play a bigger part and if they want to get over the line they will need to use MMC."

Underpinning these collaboration needs is the call for greater alignment between government and industry on the priorities and objectives for MMC adoption. Overall, the discussion emphasised that unlocking the full potential of MMC will require a concerted, collaborative effort between government, policymakers and the diverse range of industry stakeholders.

Public perception and infrastructure concerns.

Participants highlighted several issues around public perception of new housing developments and the importance of supporting infrastructure in communities. Issues regarding infrastructure were raised as reasons why people object to new developments in their area.

“There aren’t GPs, there aren’t dentists, there aren’t schools, there isn’t anything. The irony is if they [developers] could get the infrastructure built, they could build loads of housing.”

This suggests that the availability of key infrastructure like transport links, schools, GP and other NHS facilities etc. is a major factor in enabling and supporting new housing supply. Without this infrastructure, or with delays to promised new infrastructure, new developments may be viewed negatively by the public.

Furthermore, one speaker highlighted that in some areas, all that is on offer from developers are high-rise flats that local people do not want:

“In our area, the offer is sadly high-rise flats, and it’s not what the public wants. But they also can’t afford the houses outright. Although we have seen people come in and build beautiful homes, some are private, many social housing, some on different tenures and it is much loved. Every time a developer comes and recommends another high-rise, local people look to the former and say this is what can be achieved.”

This suggests that the public has a negative perception of high-rise, high-density housing developments, and a preference for more traditional housing types.

Overall, the discussion underscored the significant influence of public perception and infrastructure provision on the success and acceptance of new housing developments, including those utilising manufactured construction methods. Addressing these concerns was seen as crucial to unlocking greater support for more housing.

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