

## SOLVING THE HOUSING CRISIS SERIES

# How Modern Methods of Construction can deliver ‘more’ through the planning system





# The cusp of a revolution

Modern methods of construction (MMC) offer the opportunity to rethink how we conceptualise, design and build much-needed housing, promising up to 265,000 additional homes in the next ten years if a third of new homes used MMC. They can speed up the process, make challenging sites viable, and provide varied and adaptable homes that respond to local character and needs.

Although MMC has tantalised the industry for decades, currently under 10% of housing in the UK is built this way – even though we need to build millions more homes in the coming years. Why? While research to date has focused mainly on the financial and technical barriers, there is evidence that the planning system is considered too rigid and unaccommodating for MMC.

Our research has identified opportunities, actions and benefits that would help local planning authorities and other users of the planning system initiate an MMC revolution. It covers the following themes:



Smoothing the development management process



Elevating the role of design and responding to place



Harnessing digital innovation



Opportunities for partnerships to implement MMC at scale.

Using interviews, case study research and evidence from advocates, we have identified practical ways the planning system can get behind MMC and unlock its benefits.

Contributors include: Future Cities Catapult; Greater London Authority; Homes England; Lord Nat Wei; Mark Farmer; Ministry of Housing, Communities and Local Government; Royal Town Planning Institute; and Swan Housing Association. Other contributors include Arup's own specialists who are working on behalf of MMC frontrunners across the country.

## *What are modern methods of construction?*

A vast number of different terms are used to describe innovation in the housing industry that uses manufacturing methods to speed up construction: 'modular', 'modern methods of construction', 'off-and-on-site manufacturing', 'volumetric housing manufacture' and 'design for manufacture and assembly'. Signals from UK Government indicate that it has settled on the term 'modern methods of construction' or MMC, so this is the term we have used here.

The UK Government's cross industry working group on MMC has recently announced a new categorised definition framework which sets out seven MMC categories. The term encompasses a range of technologies – from timber frame systems such as those commonly used in Scotland for years and the prefabricated 'pods' used within traditional builds, to 'volumetric' systems where fully-constructed modules are transported to site for rapid installation. MMC is about better products and processes, which aim to improve efficiency, quality, customer satisfaction, environmental performance, sustainability and programme.



# Planning benefits of MMC

MMC can help achieve a range of planning policy objectives for housing.

- **Faster construction** than traditional ‘bricks and mortar’ methods is the most obvious benefit. As components and systems are made in a factory they are not affected by delays on site.
- **An increase in the overall number of homes** can be achieved because MMC is well-suited to the traditional market, custom and self-built homes, much-needed social housing, built-to-rent and meanwhile uses.
- **Market absorption rates are maintained** because MMC can offer alternative products to the market, complementing the traditional offer rather than competing. MMC brings increased choice and the opportunity for more innovative designs. A common frustration of local authorities and potential purchasers alike is the cyclical nature of the existing residential sales-led housebuilder model, which means that homes are drip fed to the market to help maintain price.
- **Local authorities are under pressure** to achieve annual targets but the long lead-in time for housing schemes makes it increasingly difficult to meet five-year land supply requirements. Local authorities are therefore facing the penalty of the National Planning Policy Framework’s (NPPF) ‘presumption in favour of sustainable development’ and loss of control. The faster rate of construction and absorption of MMC homes can help resolve this.
- **There is a solution for almost every site and scale of project** since the variety of systems and materials available and the interchangeability of many components means much greater diversity of form and typology is possible. The broad range of design options available means that materials, massing and design details can all be tailored to the site and the local vernacular.
- **MMC can also reduce construction impacts** for surrounding residents. It offers particular advantages for small, restricted sites, infill sites and estate intensification.
- **MMC offers consistently high build quality** since homes are precision-engineered and produced in a controlled factory environment, offering reassurance to the public as well as the opportunity to be more sustainable for example by using sustainable materials and reducing waste.





On-site construction time can be **REDUCED BY OVER HALF.**<sup>1</sup>



**265,000 EXTRA HOMES** could be built in the next ten years if 1/3 of new homes used MMC<sup>2</sup>



MMC is a key **PERFORMANCE INDICATOR** for Homes England<sup>3</sup>



**NEARLY 40% OF HOMES** currently under construction are build-to-rent for which MMC is ideally suited<sup>4</sup>



Enables up to **FOUR TIMES AS MANY HOMES** to be built with the same on-site labour.



MMC is well suited to using Local Development Orders which can be determined in **28 DAYS.**

<sup>1</sup> <https://www.nao.org.uk/wp-content/uploads/2005/11/mmc.pdf>

<sup>2</sup> Arup calculation

<sup>3</sup> <https://www.gov.uk/government/publications/homes-england-strategic-plan-201819-to-202223/homes-england-strategic-plan-2018-to-2023#achieving-our-plan>

<sup>4</sup> <https://www.bpf.org.uk/media-listing/press-releases/building-boom-uk-build-rent-housing>



## SOLVING THE HOUSING CRISIS

# Smoothing the development management process

OPPORTUNITY	ACTION	BENEFIT
<b>A DESIGN CODE COMBINED WITH A LOCAL DEVELOPMENT ORDER (LDO) CAN REDUCE PLANNING RISK</b>	Local planning authorities should consider a pattern-book approach embedded within a design code, which could establish parameters for style, daylighting/ fenestration and space standards and implemented using a LDO, which could indicate the scale of development and site layout.	Reduce risk for developers and provide more certainty over planning timescales.
	Local planning authorities should encourage the use of LDOs for MMC sites.	Front-load the planning process, through a product-led rather than a project-led approach. Provide certainty to developers and speed up the planning process.
	Local planning authorities should turn around applications where an LDO is in place within 28 days.	Reduce the burden on already constrained planning departments.
<b>ENCOURAGE USE OF MMC THROUGH PLANNING POLICY</b>	Local planning policies should support the use of MMC and require developers to demonstrate how they have considered MMC in proposals.	Raise awareness of MMC and encourage it to become more mainstream.
<b>A SHIFT IN ATTITUDES IS NEEDED</b>	Local authority planners and members should minimise design 'tweaks' at the planning application stage to maximise the value of MMC.	Agreeing parameters enables amendments in response to changing market conditions or consumer preference to be made without non-material amendments or Section 73 applications.
	Local planning authorities should Provide training to familiarise officers and members with MMC and an accompanying new planning approach.	MMC can reduce the local environmental impact of construction disruption, reducing the time this needs to be considered during determination.
	Local planning authorities should be pragmatic in applying construction and local labour conditions to MMC developments – they might not be needed.	Create readily implementable and effective planning permissions.



Image: © Paul McMullin

### **A DESIGN CODE COMBINED WITH A LOCAL DEVELOPMENT ORDER CAN REDUCE PLANNING RISK**

The potential development management benefits of MMC are currently underestimated. Planning delays and planning risk are consistently cited as some of the biggest challenges faced by developers. MMC homes, using pre-agreed design specifications, could speed up decisions, streamline the rest of the process and reduce risk. In reality much traditionally constructed housing has been built to relatively standard designs – from the Victorian terrace to the interwar semi-detached. There is therefore little to fear from standardising design approaches.

Securing planning consent is a major milestone in realising the value of a site but too often permission is sought with limited consideration for how homes are going to be constructed. This can result in sub-optimal or unviable permissions, or costly amendments.

### *Return of a pattern book?*

During the eighteenth and nineteenth centuries, architectural pattern books were instrumental in spreading the Georgian ideal across the English-speaking world. Pattern books were printed volumes that allowed architects, builders and homebuyers to share and popularise designs. While early books were aimed at the nobility and landowners, by 1780, hundreds of books were targeted at aspirational home buyers and skilled tradesmen, illustrating modest houses, villas and cottages. MMC fits well with the pattern book approach because it involves establishing design elements and principles, then repeating them.

Design codes can be used to set out a suite of design options which are all acceptable in planning terms. This would enable the local planning authority to identify the external parameters relevant to a particular site or group of sites within which MMC units could be assembled in different combinations. This approach creates the opportunity to maintain quality across a diverse portfolio of development and contribute to a coherent clarity of place.

Design codes could include a limited and pre-agreed range of possible custom options available to the customer either at construction stage or as extensions. If done at scale, this would speed up development by gaining up-front buy-in from planning authorities and relieve an already stretched planning resource. It would remove the burden of repeated debate on a case-by-case basis about what constitutes good design. Amendments in response to changing market conditions or consumer preference can be accommodated so long as they are within the mutually acceptable and interchangeable parameters on different plots – avoiding resource-heavy non-material amendments or S73 applications.

This front-loaded approach requires MMC providers to be engaged early and integrated into the design team. Factory specifications can be directly translated into the planning permission and planners can grant permission knowing the quality of the finished product, avoiding disappointment if glossy visualisations do not translate into high-quality developments on the ground.

Local Development Orders could be used to establish development rights for MMC designs. This would enable local authorities to set design parameters, and for developments to benefit from deemed permission if they are compliant.





## *Graven Hill, Bicester*

*Graven Hill is the UK's largest self-build and custom build site developed as part of a new garden community initiative*

The first-of-its-kind site is based in Bicester and will house up to 1,900 beautiful and unique homes which are due to be built over the next 10 years. The development is set to revolutionise the way in which properties are designed and built by offering a flexible alternative to the usual routes including MMC. The plots will be surrounded by open, green spaces including woodland, allotments and a network of cycle and footpaths connecting to the town centre and local transport links.

The pioneering project is the vision of Cherwell District Council and spans 188 hectares of former Ministry of Defence land. Cherwell District Council is leading the way with its approach to housing provisions and is the fastest provider of new homes in the UK.

Plots benefit from pre-approved outline planning permission in the form of a Local Development Order. Each plot has a specific Plot Passport setting out the parameters, for example information on the range of external finishes available for the character area. Once planning applications have been submitted and registered by the Council, planning permission can be achieved in as little as 28 days.



## ENCOURAGE USE OF MMC THROUGH PLANNING POLICY

There are some good examples of planning policy being used to encourage the use of MMC.

*Stratford-on-Avon District Council (2019)* has prepared a development requirement supplementary planning document (SPD). Currently subject to public consultation, this sets out requirements for modular development – including how it should comply with wider design principles. The SPD encourages careful consideration of the external appearance and cladding to ensure this harmonises with the surrounding area. The SPD encourages early, pre-application engagement with case officers.

*Wakefield District Residential Design Guide SPD (2018)* sets out the different types of MMC and encourages applicants to ‘take advantage of the latest technologies to improve building quality; and amenity of residents during construction (for example, off-site or modular systems)’. Modular units will be appraised against all residential design principles within the SPD.

*Central Bedfordshire Council Local Plan 2035 (Pre-Submission January 2018)* sets out support for MMC within its Draft Policy HQ11. The council hopes 20% of all new development over the period of the plan will use MMC, and developers will be specifically asked to demonstrate how they have considered the use of MMC in their proposal.

## A SHIFT IN ATTITUDES IS NEEDED

However, this streamlined, risk-minimising approach will only be possible with a shift in the attitudes of some local planning departments. The advantages of a new MMC planning model will be eroded by planning officers and members seeking to ‘tweak’ designs. Design decisions need to be made early and carried through to construction. The resulting products do not all have to be identical, but MMC does rely on a replicable process and bespoke minor amendments are not easy. The value of pre-application engagement to front-load designs is therefore more important than ever. Training would help to familiarise officers and members with MMC and an accompanying new planning approach.

A pragmatic approach is also needed when applying planning conditions to MMC developments. It’s likely that the impact of construction will be less than traditional house-building. Planners will need to work closely with transport consultees on a case-by-case basis to understand if traditional planning conditions imposed on construction, such as extensive construction environment management plans, are necessary. Where they are, they will need to establish how the use of MMC can help reduce the local environmental impact of construction.

Local labour conditions applied to planning permissions are also likely to pose a challenge to MMC developments. The efficiency of MMC is based on a centralised system of construction which might not take place in the same area as the site. While some on-site labour is still required, MMC providers often prefer to deploy their own on-site teams who are familiar with the product and can ensure all the quality assurance requirements are achieved. Local labour conditions will therefore need to be applied pragmatically.



## SOLVING THE HOUSING CRISIS

# Elevating the role of design and responding to place

OPPORTUNITY	ACTION	BENEFIT
<b>PLANNING HAS A ROLE IN ENSURING AND MAINTAINING HIGH STANDARDS</b>	Designers, manufacturers and local planning authorities all need to take responsibility for driving and maintaining high-quality design.	MMC can produce well-designed buildings consistently.
<b>MMC OFFERS FLEXIBILITY TO RESPOND TO LOCAL CHARACTER AND NEED</b>	Applicants and local authorities should explore the design options available to ensure designs respond to their location.  Where appropriate to local context, local authority planners and the public should embrace MMC designs which might not look the same as traditionally constructed homes.  Developers and applicants should use MMC to build in adaptability.	Developments which respond to local circumstances.  Greater variety in the housing stock.  Homes which can adapt as circumstances and needs change.
<b>USE MMC FOR TEMPORARY USES BUT PRESERVE ITS IMAGE FOR LONG-TERM USE</b>	Local authorities should use local guidance to distinguish the difference between 'temporary' units and MMC homes.	MMC can address meanwhile and temporary uses without eroding its image as a long-term, high-quality solution.
<b>AN MMC DESIGN CHAMPION COULD PROMOTE A POSITIVE IMAGE FOR MMC</b>	Homes England should appoint an MMC design champion to drive the agenda.  The Building Better Building Beautiful Commission should work with developers, applicants and local authorities to showcase design excellence in MMC.	Raise the bar for design quality.

### PLANNING HAS A ROLE IN ENSURING AND MAINTAINING HIGH STANDARDS

The principles of MMC are not new. Off-site construction techniques have been used to efficiently manufacture performance-led dwellings since the late 1940s. However, the perception has not always been one of quality. Historic examples of MMC are often synonymous with poor-quality, low-aspiration or temporary structures which all too often reinforced longer-term social mobility problems for residents. As a result of this perception, and other fundamental challenges, MMC has only recently gained renewed interest as an alternative way to build high-quality, long-term homes.

The successful roll-out of MMC depends on the resulting homes being both desirable to potential residents and attractive to existing communities. In general, the public accept that more new homes need to be built – but on the condition of high-quality design. Local authorities, designers and manufacturers have a responsibility to ensure this.





Image: © Graven Hill

### **MMC OFFERS FLEXIBILITY TO RESPOND TO LOCAL CHARACTER AND NEED**

Local members often focus on the design of proposals – including matters such as the variety of design within and between sites, roof articulation and use of natural materials. The broad range of MMC options mean that the materials, massing, layout and detailed design can all be tailored to local context. Local authorities should explore the available options early in the process to ensure the right type of homes for their area and the site. High-quality and varied designs will help attract people to live in these new homes and help the authorities achieve housing targets.

However, to maximise the value of MMC, it needs to be recognised that homes constructed in this way may not look like traditional housing. Economies of scale and efficiencies will not always be achieved if the aim is to replicate traditional houses. One example of this is the NU build factory in Basildon. This currently produces housing modules every four days, but it takes 16 weeks on site to clad the homes in brick.

New MMC entrants are placing greater emphasis on adaptability to ensure that as household composition and needs change, homes and neighbourhoods can evolve. With clever modular designs, a house can be installed in days and can be replaced, adapted or reconfigured equally efficiently. This means that homes and neighbourhoods can be adapted to

respond to specialist needs for the elderly or those with disabilities as well responding to changes in technology.

Giants like Amazon are already investing in technology-enabled, prefabricated modular housing, and companies like Tata Steel are developing housing systems that could provide quality, adaptable modular designs. These could enable us to upgrade our homes in much the same way that we upgrade cars and technology. With MMC designs, housing can be easily upgraded, reprocessed and ultimately recycled in line with the principles of the circular economy.

## *Neighbourhoods of the Future*

### *Agile Ageing Alliance*

The research produced by the Agile Ageing Alliance, supported by Tata Steel captures the thoughts and predictions across the sector for the opportunities associated with MMC, assistive technology and big data in relation to providing better homes for older people. The research calls for housing stock to be adapted and 'right-sizing' of properties to meet individual or family needs as they change and to provide reflect need, with contributors predominantly called for modern methods of construction to transform products and supply chains.

## *Pan-London temporary modular accommodation*

### *High-quality housing for homeless people*

The Pan-London Accommodation Collaborative Enterprise (PLACE) not-for-profit special purpose vehicle was set up by 16 London boroughs, chaired by Tower Hamlets, in early 2018 to tackle homelessness in London. It will use modular housing to provide high-quality, temporary accommodation for those in need. Modular homes will be placed on vacant sites which would otherwise not be used in the short/medium term. The key to the success of the project will be the movability of the units; homes can be relocated four times over a 40-year lifespan. The scheme is supported by the Greater London Authority, which has invested £11m to create 200 modular homes around the city.

### **USE MMC FOR TEMPORARY USES BUT PRESERVE ITS IMAGE FOR LONG-TERM USE**

MMC has a role in creative, land-efficient and affordable meanwhile uses – as well as in upward extensions in London, as advocated in the new National Planning Policy Framework (NPPF). MMC homes can be lightweight, constructed with less disruption and designed to work with the local vernacular.

For both of these uses, the same high design and build-quality standards need to be maintained to avoid eroding public opinion. MMC needs to establish itself as a long-term solution and aspire to becoming as trusted and desired as homes built using bricks and mortar.

Planners must ensure that the newly emerging perception of MMC as a mass-customisable, precision-engineered product is retained. Local guidance may be necessary to distinguish between temporary units and MMC homes. This could include, for example, providing locally specific definitions and enforcing temporary occupancy through management schemes.

## *Container Conversions – Bordars Walk/ Marston Court, Ealing*

### *Pioneering temporary tiny houses*

The 34 separate studio, one- and two-bed units in the London Borough of Ealing are considered the first of their kind. Manufactured by ISO Spaces for QED Property, CargoTek and Ealing Council, they are on a site previously occupied by disused council garages. The units took 14 weeks to build – from manufacture to final fitting.

Planning consent was subject to bespoke temporary-use conditions, including:

- 1 Permission expires ten years from the date of the first occupation. This was to protect social infrastructure and the special character and appearance of the conservation area.
- 2 The permission is restricted to accommodating tenants housed by the council – so that the local planning authority can retain strict control over the use of the site.

Specific conditions were also applied to the insulation and ventilation, and requirements for the kitchens – which had to meet the standard of interim SPG 16 hostels.



### **A DESIGN CHAMPION COULD PROMOTE A POSITIVE IMAGE FOR MMC**

The MMC industry needs to embrace the requirement for products to be consistently high quality. Tools such as design codes and pattern books, combined with a stronger link between product design and the planning stage will help. However, to really drive high-quality design, MMC needs a national design champion – a role that could be supported by a series of local champions.

The champion's role is not only to insist on high-quality design but to promote an image of MMC which reflects innovation, quality and beauty. The design champion could raise awareness of successful MMC schemes. It could work with the Royal Institute of British

Architects and other award bodies to establish a new category of awards recognising MMC developments making a significant contribution to architecture. It could establish a forum through which users and suppliers can share experiences to improve standards.

The design champion would help MMC homes to meet the s new design quality expectations established in the National Planning Policy Framework (NPPF). The role could align with the Building Better, Building Beautiful commission recently announced by James Brokenshire (Secretary of State for Housing, Communities and Local Government). This seeks to develop a vision and practical measures to ensure new developments meet the needs and expectations of communities, making them more likely to be welcomed than resisted.

## *Savoy Circus, White City*

*Heritage-led, sensitively designed  
modular construction*

Savoy Circus comprises a 306 room mixed use and student accommodation development within the heart of White City. Using volumetric construction provided by Vision Modular Systems, the scheme has been developed to reflect the history of the a former cinema on the site. It comprises brick pillars set-back with stone-style framing and glazing bricks which reflect the history of the site and the characteristics of the conservation area.

The scheme represents an excellent example of where modular construction can be used to demonstrate a sensitive heritage approach whilst delivering benefits associated of modular scheme.

## *Transforming perceptions - the German experience*

Modular housing in Germany has a good image and is often associated with high-quality construction. However, this was not the case in the 1980s. The modular construction industry overturned widespread negative perceptions by ensuring it produced consistently high-quality houses, as well as using quality standards and certification schemes to promote the merits of MMC.

The quality certificates available for MMC homes in Germany include the Golden Cube and the Hausbau Design Award. These allow successful modular schemes to be recognised and praised – encouraging future clients, homeowners and construction workers to use these construction techniques.

Germany has training schemes that teach modular construction techniques at undergraduate and Master's levels, which include wider engineering processes for modular factory environments.



# Harnessing digital innovation

OPPORTUNITY	ACTION	BENEFIT
<b>SHOWCASE QUALITY DESIGN TO GARNER SUPPORT</b>	Developers and applicants should use digital technology, such as virtual reality, BIM and digital pattern books to display MMC products.	Shift the historic perception of MMC and encourage more widespread public support.
<b>MASS CUSTOMISATION OF HOMES</b>	Developers to give buyers options to customise their homes and local planning authorities to support this approach through design codes and LDOs.	Greater diversity and ownership of local housing.  Utilising BIM for visualising design quality could also provide a record of construction drawings and materials, which would help facilitate recyclability and later adaptations
<b>DIGITISE THE PLANNING PROCESS USING MMC DIGITAL DESIGNS</b>	Local planning authorities should look for opportunities to streamline decision making using digital technology and MMC digital design.	Reduce burden on constrained planning departments.  Speed up planning decisions.
<b>USE DIGITAL TECHNOLOGY TO AID DECISION MAKING FOR PRODUCT AND SITE SUITABILITY</b>	Local authorities and developers should develop a benchmark assessment tool to rapidly assess opportunities for MMC and aid decision making.	Rapidly review the benefits of MMC for a site and identify where it could be used.





Image: Swan / NU living ©  
Agnese Sarvito

### SHOWCASE QUALITY DESIGN TO GARNER SUPPORT

To change minds about the value and potential of MMC, the industry needs to embrace digital technology and multimedia platforms, such as virtual reality, BIM and digital pattern books, to showcase the quality of today's MMC products. Technology can be used to invite customers to go behind factory doors and into completed homes to see for themselves that today's MMC homes are a world away from 1960s 'prefabs'.

### MASS CUSTOMISATION OF HOMES

The digital approach to MMC design enables mass customisation, which allows manufacturers to develop a wide range of products using common components such as panels or frames. It has the potential to revolutionise the future of housebuilding and avoid the repetitive blandness of many modern housing estates. Buyers can use online configurators to design their own homes – from internal layouts to external appearance. Indeed, there can be millions of different design options even while approximately 80% of the carcass remains the same.<sup>1</sup> Digital technology could help each customer visualise and select options.

Experience at custom-build sites, such as Graven Hill in Oxfordshire, show that modern designs including flat roofs, large glazing and modern construction materials, are popular. There is clearly an appetite for both more ownership of design and for modern designs well suited to MMC.

## *Beechwood, Basildon*

*Mass customisation gives people  
ownership of home design*

With 407 new homes, community facilities and commercial units already built, the Beechwood West development will use modular construction for over 900 new homes. Using Homes England funding and working jointly with Basildon Borough Council and Essex County Council, the scheme successfully demonstrates mass-customisation. Occupiers are offered a range of millions of combinations of designs for terraces, semi-detached and detached homes through an online configurator – resulting in a unique and diverse landscape.

This scheme forms part of the Swan Housing Association and NU Living group. Swan has secured a development pipeline of 6,500 homes and has ambitious plans for many more units – the majority of which will be constructed using NU living off-site construction methods at its factory in Basildon.

<sup>1</sup> <http://www.constructionmanagemagazine.com/insight/has-offsites-time-finally-arrived/>

### **DIGITISE THE PLANNING PROCESS USING MMC DIGITAL DESIGNS**

The combination of digital infrastructure innovations and MMC could completely transform the planning system – accelerating the rate at which paper applications are replaced with designs direct from digital platforms. Design evolution could be made more transparent by using digital platforms to demonstrate massing and cladding options and planning consent could be secured through semi-automatically generated reserved matter applications sent straight to the production line. This transformation could take place across the built-environment, with modular construction overcoming the complexities and uncertainty of traditional build sites and enabling transparency.

### **USE DIGITAL TECHNOLOGY TO IDENTIFY SUITABLE PRODUCTS AND SITES**

Digital technology and MMC could also be used as a spatial tool to identify site opportunities by compiling several factors. This would enable local authorities or housing associations to rapidly review the benefits of an MMC product for a site. To aid decision making, the tool could assess factors such as price, track record, design flexibility and build quality.

## *Toolkit for off-site homes*

### *Precision-manufactured homes for London*

In March 2018, the Mayor of London committed to support and promote the modernisation of London's construction industry through more precision-manufactured homes.

A team led by Mark Farmer's Cast Consultancy supported by Bryden Wood will create a digital platform to make building these homes increasingly straightforward. This will include a digital toolkit capable of integrating BIM.

The platform will help accelerate the standardisation of precision-manufactured homes in London by making the process more efficient and creating the favourable conditions needed for demand to aggregate.



## SOLVING THE HOUSING CRISIS

# Opportunity for partnerships to implement MMC at scale

OPPORTUNITY	ACTION	BENEFIT
<b>LOCAL AUTHORITIES CAN DRIVE THE MMC REVOLUTION</b>	Local Authorities should look for opportunities to lead pilot MMC projects on their sites and support MMC at the highest level.	Local Authority sites can provide high-quality homes efficiently.  Raise awareness and support for MMC.
<b>ALLIANCE ACROSS THE MMC SECTOR</b>	Homes England should consider a partnership-style platform to share knowledge and build an alliance across the MMC sector.	Acceleration of take-up by realising the benefits of MMC at scale.

### LOCAL AUTHORITIES CAN DRIVE THE MMC REVOLUTION

Partnerships are fundamental if the MMC movement is to gain enough momentum to disrupt the traditional housing market. MMC needs a critical mass and everyone working in the built environment – local authorities, developers, planners, public bodies – should look for opportunities to achieve this.

Many MMC manufacturers are already in well-established partnerships or are exploring this space. The Housing White Paper (2017) Fixing Our Broken Housing Market called for local planning authorities to act entrepreneurially and take on a bigger role in proactive land assembly. Local authorities are well placed to lead pilot schemes on their own land. As relatively new entrants to the housing market they are not constrained by existing supply chains, so they can flex their buying power to promote MMC. The success of such partnerships depends on tangible support for the concept from the local authority, councillors, MPs and political leaders.

## *Belle Vale, Liverpool*

### *Housing association getting homes built faster*

Developed approximately six months faster than traditional housing, Liverpool Mutual Homes' scheme at Belle Vale consists of 33 semi-detached social houses built off site. The modular homes were built in a specialist factory and delivered to site in stages – with ground floors, upper floors and roofs craned into place. Acknowledged benefits of the scheme include reduced wastage and a streamlined supply chain that produced high-quality houses quickly, enabling the housing association to house tenants and secure rents sooner.



## *West of England Community Homes Hub*

### *Knowledge-sharing platform*

Ecomotive is managing a project funded by Power to Change to establish a hub for the West of England area that supports knowledge-sharing across people-led housing projects. Although the format of the hub is emerging, the group are currently looking to develop a partnership arrangement between Bristol & Bath Regional Capital (BBRC), Bristol City Council and the Hub to provide a support package involving finance, land and technical support.

### **ALLIANCE ACROSS THE MMC SECTOR**

If MMC is going to make a substantial contribution to housebuilding, the sector needs to be aligned. This could include a wider, partnership-style platform for sharing knowledge and good practice, drawing on experiences from manufacturers, educational partners and local authorities. Homes England could champion this.

## *The role of Homes England*

The Homes England Strategic Plan 2018/19–2022/23 sets out the organisation's commitment to facilitating MMC take-up. One of its key performance indicators is 'share of supported completions using MMC', although targets for this are not yet published.

*"Improving construction productivity is another of our key aims, so we will encourage developers to use MMC and increase the capacity of the off-site manufacturing industry, including through our provision of development finance."*

Homes England Strategic Plan  
2018/18- 2022/23

Homes England's accelerated construction programme requires local authorities to build out quickly and use MMC. In its first deal, the body awarded £10.6m to Welwyn Hatfield Borough Council to prepare three sites for the development of 670 homes. Overall, Homes England will support the development of around 30,000 homes across the country in this way.

Homes England wants to establish more partnerships with local authorities and housing associations and is looking to use the full range of tenure options to establish long-term demand for MMC products.



Image: © Paul McMullin

## Summary

MMC should play a vital role in tackling the housing crisis. It can also help meet planning policy objectives such as increasing the variety of homes and speed of development, enabling homes to be built on brownfield and awkward sites, improving build quality and reducing disruption from construction.

But there is even more potential for MMC to align with wider digital transformation of the planning system and revolutionise the way homes are planned for and built. Furthermore, local authorities themselves are well placed to use MMC on their own sites.

How can the industry move to this streamlined system, which not only benefits developers and manufacturers but could greatly reduce the burden on an already constrained planning system? There needs to be a change in both attitudes and approach.

The MMC revolution is already underway. Now, to enable it to become widely used, all parts of the housing system need to align – and planning is a vital component of this.

Developers, local authorities and Homes England must now work together to change attitudes and introduce a streamlined planning process to provide the boost the industry needs.

# We shape a better world

## **CONTACT**

Vicky Evans

e: [vicky.evans@arup.com](mailto:vicky.evans@arup.com)

t: +44 115 827 1171

Katie Kerr

e: [Katie.kerr@arup.com](mailto:Katie.kerr@arup.com)

t: +44 207 755 5304