

Rapporteur review: The potential of modular housing to help solve London's housing crisis

Summary

London is delivering less than half (and maybe only a quarter) of the new homes needed annually. Numerous studies have sought to identify the reasons for barriers to housing production with two of the prominent factors being the capacity of the housebuilding industry, which prevents a step-change in delivery, and developers' marketing strategies, which seek to 'ration' supply to maintain sales prices.

This rapporteur review will seek to: assess the potential of offsite-produced housing (prefabrication, or modular housing) using Modern Methods of Construction (MMC) to bridge the gap between housing need and supply; understand the factors that have prevented the adoption of this type of housing more widely; and; identify the potential role of the Mayor in removing barriers to the increased use of MMC in London's new homes. It will also address the suitability of this type of housing for the Mayor's new London Living Rent product that could be delivered by housing associations, local authorities, and potentially as part of 'Build to Rent' schemes.

London's housing need

London's population is projected to grow by a million in the coming decade. Estimates of the need for additional housebuilding in London fall within a range of 49,000-80,000 per year. Housing completions are well below this level – averaging around 20,000 per year in the past decade. London is delivering less than half (and maybe only a quarter) of the new homes needed annually.

The Mayor's Barriers to Housing Delivery Report¹ in 2012 sought to identify the factors which lie behind slow build out rates and stalled developments. It suggested that a range of factors were potentially impeding housing completions, including:

- The number of approved sites owned by firms that do not actually build houses;
- Challenges developers faced in obtaining development finance following the recession;
- The capacity of the housebuilding industry; and,
- The speed and consistency of the public sector involvement, including the planning system.

The Outer London Commission² noted a more fundamental concern that even when development commences developer sales practices may mean that few large sites are unlikely to build out more than 500 private sale units over any 5 year period (e.g. 100 units a year). Even in a buoyant market, there is a tendency for developers to manage the delivery of private sale units in order to maintain sales values and address concerns about 'market absorption'.³

¹ https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Barriers%20to%20Housing%20Delivery%202012.pdf

² The previous Mayor established the Outer London Commission, a small, highly experienced and focused independent body, to advise how outer London can play its full part in the city's economic success. The OLC is chaired by William McKee CBE. The Commission has produced a series of reports that fed into the previous Mayor's London Plan reviews. <https://www.london.gov.uk/about-us/organisations-we-work/outer-london-commission-olc>

³ Removing Barriers to Housing Delivery, Outer London Commission, June 2015
https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/OLC%20background%20paper%20-%20issue%203%20barriers%20to%20delivery%20-%20June%202015.pdf

As a result of the failure of ‘traditional’ construction to deliver, momentum has been growing for a renewed role for modular housing using MMC to bridge the gap between demand and supply.

What is modular housing and modern methods of construction?

Non-traditional homes have played an important part in the response to the nation’s biggest housing challenges in the past 70 years:

- The Emergency Factory Made Homes programme assured that 156,623 “temporary” prefabricated buildings were erected all over the UK between 1946-9.
- Permanent non-traditional homes⁴ outside this programme delivered a further 450,000 new homes in the decade following the war.
- “System built” tower blocks, encouraged by higher grants for taller buildings, helped to propel house building in the 1960s and 1970s to the highest level ever: over 425,000 homes were built in 1968 alone.

In the following decades prefabricated housing fell out of use and favour – the term “prefab” bringing with it an idea of temporary, poorly built and unsustainable form of housing.

However, the debate has continued. Over the last 20 years there has been a degree of support and advocacy in Government for a larger contribution from “offsite” manufactured homes using “Modern Methods of Construction”(MMC).⁵

Generally there are five main categories used to classify MMC construction systems:

1. Off-site manufactured – volumetric (three-dimensional units produced in a factory, fully fitted out before being transported to site and stacked onto prepared foundations to form dwellings).
2. Off-site manufactured – panellised (flat panel units built in a factory and transported to site for assembly into a three-dimensional structure or to fit within an existing structure).
3. Off-site manufactured – hybrid (volumetric units integrated with panellised systems).
4. Off-site manufactured - sub-assemblies and components (larger components that can be incorporated into either conventionally built or MMC dwellings).
5. Non-off-site manufactured MMC (innovative methods of construction used on-site and the use of conventional components in an innovative way).

Off-site manufactured housing is far more common in continental Europe. For example, last year, around 20 per cent of new homes in Germany were modular homes

What are the potential benefits?

Supporters of this type of housing production point to the fact that it has evolved dramatically since the era of post-war prefabs. Today’s designs are of exceptional quality, highly sustainable and meet the same (or

⁴ Using a variety of construction techniques such as steel frame, precast concrete, in situ concrete and timber frame.

⁵ For example the Eagan report, ODPM Sustainable Communities report and various, National Audit Office reports

exceed) standards of traditional housing. Moreover, design is flexible and can complement any housing style,⁶ energy costs are low and certification systems exist that guarantee a life of at least 60 years for this type of product.

For London, the two most attractive features of modular housing are the speed of construction and the reduced cost of development. Another advantage is the particular suitability of this type of housing for 'infill' sites,⁷ of which London has capacity for at least 100,000 units. Furthermore, this type of construction might attract investors which are not traditionally involved in the housing sector. Modular construction might be particularly suitable for market renting as the speed of construction means rental revenue is delivered quickly and investments can pay for themselves within a relatively short period.

What guidance does the Mayor give?

In terms of 'traditional' housing, the Mayor currently specifies numbers, types, tenures, design and energy characteristics in great detail. The most important documents relating to housing include:

- The London Plan
- The Housing Strategy
- Housing Supplementary Planning Guidance
- The London Housing Design Guide

In all of these documents there is only one reference to modular housing, and this relates to its suitability for self-build housing.

Terms of reference

1. What is the potential for modular housing, using MMC, to: help solve London's housing crisis; contribute to the new London Living Rent product; and meet wider Mayoral objectives such as affordability and the low carbon agenda?
2. What are the factors that have prevented, and are still preventing, the adoption of this type of housing more widely?
3. What role can the Mayor play in removing barriers and accelerating the use of modular housing for London's new homes?

Key issues to explore

- What are the specific advantages of modular housing using MMC in terms of quantifiable costs, reductions in construction time and demands on labour?
- Are there particular housing sectors that might be more receptive to using modular housing and how can they be helped to deliver?

⁶ Appendix 1 shows six different modular housing developments in London

⁷ Infill refers to the development of vacant or underutilised sites that are often small in scale,

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- What barriers are there to delivering such housing more widely – including guaranteeing demand, establishing production facilities, overcoming any negative image, planning barriers and securing funding?
 - What financial models are needed to support modular housing and how resilient are they likely to be in the post-EU exit environment?
 - How might the Mayor support and stimulate the use of modular housing in London through specific planning policies, design guidance and use of housing grant?
 - Under what conditions can modular housing represent an attractive solution – particularly in relation to different types of sites, densities, types of housing need and meeting the need for affordable homes?
 - How might the Mayor act strategically to enable a critical mass of demand to give more certainty to offsite manufacturers to invest in production facilities
 - How might the Mayor ensure the skills exist to utilise any increased production?

Approach

This review will utilise a range of research, evidence gathering and expert opinion in establishing answers to the questions above. Desk research will establish much of the technical detail of using modular housing through MMC as well as adding historical context and international experience.

- A call for evidence to stakeholders nationally should establish industry opinion and client concerns in relation to barriers.
- A roundtable discussion with selected stakeholders might usefully ‘reality check’ a draft report and recommendations.
- A site visit might helpfully provide an opportunity for media interest as well as involving other Members who have previously demonstrated an active interest in the issue. The visit might allow interviews with residents and be complemented by a survey on wider public attitudes toward this type of housing.

Appendix 1 – Modular housing developments in London

“Today’s designs are of exceptional quality... the design is flexible and can be altered to complement any housing style – from modern contemporary to classic traditional designs”. Pop-Up Housing: A London Solution. GLA Conservatives, February 2016.



Passive house, Rainham	Peabody, Shepherdess Walk, Islington
Ladywell Pop-up village, Lewisham	Timber frame, Murray Grove, Islington
Y:Cube for the YMCA, Mitcham	Northwold Road, Hackney