

Make Modular – Written evidence (UKH0090)

Introduction

1. Make Modular is the voice of the UK's largest and most advanced manufacturers of 'volumetric' modular homes. Our members are owned and funded by investors, such as Goldman Sachs, Laing O'Rourke, Legal & General, Sekisui House, and TDR Capital, with support also provided by Homes England.
2. Advanced volumetric harnesses technology to address challenges faced in traditional construction, enabling the building of quality housing at scale, creating worthwhile "future economy" jobs where they are needed and delivering net zero housing.
3. Volumetric presents an opportunity to revolutionise housebuilding in the UK and create leading-edge, smart-home capability that can be exported around the world. Currently, just 8% of UK homes are built using modern methods of construction.
4. Using cutting-edge, safe and sustainable technology, volumetric housing enables inspiring designs and features to create homes we want to live in. It is widely recognised that the housing supply in the United Kingdom has reached crisis levels with serious policy commitment required to increase volumes.
5. Advanced volumetric construction can deliver:
 - Capacity for 50,000-75,000 additional new homes by the end of 2029
 - Up to six houses installed each day by a single crane and factories produces each house in just two hours
 - Homes that cost 20% less cost to heat, and use 30% less energy through sustainable design
 - Create 50,000 flexible future economy jobs where they are needed across the UK
 - Production factories are in areas where jobs are needed and homes are easily delivered for assembly to areas of the country where they are most required

Demand for new housing

Question 1: What is the current composition of the UK's housing sector? How is the sector structured in terms of private ownership, privately rented accommodation and social housing?

6. The current UK construction sector is failing to serve those who need a place to live at every level. Housing supply of all types is outdated and reliant on traditional methods that have not responded to housing need, not made significant updates to construction methods in many decades and are incapable of delivering homes to the sustainability and technological standards that modern residents should be able to expect.

7. This has been compounded by a collapse in the number of smaller builders and new entrants to the sector over the past 20 years.
8. Advanced modular construction offers a stark contrast to this, with modern sustainable homes and apartments, that can be delivered at scale, modular is the best option for increasing competition and the number of builders in the UK housing market.
9. Crucially, the speed of build out in modular is far faster than in traditional meaning sites do not stall once factory based construction commences.
10. Make Modular is supportive of the recommendations made in the 2018 independent review by Sir Oliver Letwin. These recommendations would see sites developed for rented housing, including the private rented sector, and mixed-tenure sites. Both of these would accelerate delivery and create affordable housing.
11. Legal & General Modular Homes will be constructing 185 homes at Bonnington Walk, Bristol. This development will consist of 51% affordable homes with a mixture of both council housing and shared ownership.
12. Central to this approach is the need to ensure a mix of housing types and densities. The value of modular construction is its applicability to all of these challenges, across low, medium and high-rise dwellings.
13. This enables the creation of communities and places that appeal to housing associations looking for affordable homes, younger buyers looking for shared ownership or a starter homes, families and retired people, where a mixed typology of dwellings and a variety of density models is required.

Question 2: What social and demographic factors shape housing demand in the UK? What are the expected future trends in housing demand?

14. The rise of single person households across all age groups is now a well established trend coupled with the recently accelerated need for home working spaces and technologies to be incorporated into modern design.
15. Growing public and political demand for energy efficient, low and no-carbon homes is now both inevitable and essential.
16. Delivering homes that are affordable should be top priority for all national and local decision makers. A commitment to invest in the most advanced modular construction is essential if we are to realise new homes that are modern, affordable and great places to live..

Question 3: Does the Government's target of 300,000 new homes per year accurately reflect housing demand? Is this target achievable?

17. The need to scale up the delivery of new homes and apartments in the UK is urgent but the target to deliver such high volumes of new homes will be unachievable if we continue to rely solely upon traditional methods of construction.
18. We can only meet the twin-challenges of volume delivery with high-quality homes through serious investment in volumetric modern methods of construction.
19. Modular is already leading the way in developing some of the best design, using cutting edge technology to produce the most sustainable homes and developments, crucially, and this can be achieved in half the time of traditional building techniques
20. It is estimated that advanced modular construction could provide capacity for construction of 50,000 – 75,000 additional new homes by the end of the decade.

Private ownership, privately rented homes and social housing

Question 4: What is the balance of demand for new housing between homes for private ownership, privately rented homes, and social housing? How does this affect the type and tenure required of new homes?

21. To address the current housing challenge, the focus must be on a mix of low rise, mid-rise and high-rise houses and apartments which can deliver the volume, density, size and type mix, placemaking and quality standards required. Modular housing provides solutions to all of these challenges
22. The volumetric modular sector has already provided evidence of our ability to deliver this through the construction of four hundred homes in Selby, Bristol and Kent during 2021.
23. These homes, over 60% of which are affordable also achieve zero carbon or EPC A through the use of solar panels, air source heat pumps using volumetric modular construction techniques.
24. While modular provides a crucial opportunity to build at scale, our members also welcome the increasing levels of interest in the 'self-build' and 'custom housebuilding' market in the UK.
25. Volumetric construction companies are already planning to enter this market and considering products that will offer the customer opportunities to buy off plan, with the ability to customise their home.
26. This will be enabled by end-to-end technology solutions that will enable customers to configure their homes online, in much the same way as they might configure a new car.

Question 5: What can be done to ensure there is a good balance of new homes where they are needed across the UK?

27. Much is made of the pressure to provide homes in certain areas, particularly, but not exclusively, in the South East of the country. One crucial aspect of this debate that is often overlooked is the demand for labour and the interaction with the 'levelling up' agenda.
28. Uniquely in the construction sector, modular provides the opportunity to construct offsite, in regions where labour is available and transport homes to the areas where demand is highest.
29. This enables the building of quality housing at scale while creating "future economy" jobs, with new skills, where they are needed.
30. Policy at a national and local level must now respond to this type of construction and better facilitate it.

Barriers facing the sector

Question 6: Is the construction sector able to deliver the UK's housing demand? What barriers are facing the sector?

31. The volumetric modular construction sector is poised to deliver a revolution in the construction sector with the delivery of high quality, sustainable homes at scale.
32. There are a number of constraints that stand in the way of this being realised and we are calling upon policy makers at all levels to address these:
- i) **Land:** Equal access to land for modular housing providers. Too many site conditions still favour traditional modes of construction
 - ii) **Speed:** Increased focus on speed of build out on sites at the procurement stage. Too many still stall due developers under-estimating material and cashflow shortages
 - iii) **Scale:** Using the full weight of Government procurement via a joined-up approach including education, defense, and housing to build scale in the UK's modular industry
 - iv) **Planning:** A system which gives the same weight to modular as traditional building methods
 - v) **Sustainability:** tougher sustainability targets on house building with a clear commitment to deliver net zero and accelerating the development of building regulations to match a new, more ambitious normal when it comes to quality and energy
33. Countries such as Japan, Germany and the Netherlands have demonstrated how government and industry can work together, through legislation and investment,

to ensure desirable housing for all citizens. This can easily be replicated in the UK with the right policy levers in place.

Planning system reforms

Question 7: The Government has published its proposals for reform of the planning system. How can the planning system be shaped to meet housing demand?

- **What role should permitted development rights play in this?**
- **How might changes to Section 106 agreements shape the provision of social housing?**
- **How should communities be engaged in the planning process?**

34. In responding to the Government's proposals for a new Planning Framework and Model Design code, we welcomed the focus on design and beauty, but central government and local planning authorities must ensure that in creating these new plans, we expedite rather than delay the planning process

35. Clarity and the ability to make long-term plans for pattern, scale and design quality will be find much support in the volumetric construction sector.

36. It is however essential that the development of these plans does not in itself create delays in the planning process for building the homes we need.

37. Government and local authorities must make provision for streamlined decision making in the next 6-12 months, while setting these longer-term plans, to avoid a hiatus becoming the unintended consequences of review.

38. Amongst housebuilders, the volumetric sector is well placed to respond to these plans, delivering long-term consistency and quality for modern developments. If these plans are coupled with reform to procurement policy, with a total project-life assessment of metrics such as affordability and sustainability, then volumetric construction can unlock the twin challenges of volume delivery with high-quality design.

39. The Planning Framework must also build on the work already undertaken by Government and others to define categories of modular housing developments. We know that there is wide range of building specifications described as modular and including this typology in designs will better inform procurement decisions and build consumer confidence.

40. Engagement with local communities is essential and modular construction firms welcome the opportunity improve these processes. Clarity at an early stage, followed by a consistent approach will provide for the best relationship between developers, local authorities and their communities. Highways and planning Authorities policies must though be aligned as part of this.

Improving the quality of new homes

Question 8: What can be done to improve the quality of new homes? How can the design and aesthetics of new homes be improved?

41. Volumetric modular construction firms welcome the focus on beauty and high-quality design, noting the support from Building Better, Building Beautiful Commission for the role that modular can play in driving high quality design.

42. In developments with 'pastiche' design, volumetric offers a particular opportunity to deliver some of the best rated design, at scale and value.
43. Make Modular supported the framework set out in the National Model Design Code, the focus on quality design and local engagement.
44. The need to scale up the delivery of new homes and apartments in the UK is urgent but we can only meet the challenges of volume delivery with high-quality design through serious investment in modern methods of construction
45. Modular is already leading the way in developing some of the best design, using cutting edge technology to produce the most sustainable homes and developments.
46. In 2019 construction firm, TopHat won the Sunday Times Readers' Choice Award at the British Homes Awards for its Family of Four home, a diverse group of high-quality home types and flats constructed from a simple set of four modules. Each home type can be configured with a variety of roof forms, internal layouts and façade designs allowing them to adapt to local vernacular and user preference.
47. The advanced manufacturing platform integrates design and production to enable flexibility, and facade technology allows for precise replication of natural materials at an affordable price.
48. In a controlled factory setting, strict overall quality assurance procedures can be more easily achieved, resulting in improved quality of construction, including reduced numbers of errors and fewer snagging issues - homes will come off the production line 97% defect-free, delivering levels of certainty to buyers and renters.
49. These construction processes ensure that the highest sustainability standard are also central to our high quality design. Volumetric producers are already leading the way in demonstration that sustainability does not come at cost in terms of quality design or affordability.
50. In 2018 the design for a volumetric modular construction by ilke Homes was chosen by readers of the Sunday Times as the Terrace of the Future in the British Homes Awards.
51. The 'Hundred House' design cost £100k to build, could be built in less than 100 hours on site, and to last hundreds of years. The design was inspired by homes of Georgian and Victorian periods yet with all the features required for modern life.
52. The volumetric modular developers are also addressing quality of placemaking with a number of sites of over 100 homes now in delivery, achieving a net biodiversity gain and creating great places for residents with community engagement through the planning phase.

Skills shortages

Question 9: Is the workforce equipped with the professional, digital and other skills required to meet housing demand, for example in the construction, planning and design sectors? What can be done to overcome skills shortages?

53. A chronic shortage of construction skills and the failure to train the next generation of workers has left the sector in a precarious position, with some 47% of UK construction workers now over the age of 45 and around 500,000 UK born construction workers expected to retire in the next 10-15 years. Upscaling volumetric would create 50,000 new jobs across the country supporting the Government's plan to level up.
54. Training and apprenticeship schemes to develop "future economy" skills are a critical area of investment for volumetric manufacturers to grow. However, investing in apprenticeships and wider training is not always easy.
55. Companies within construction must pay the CITB levy. This applies to all employers 'engaged wholly or mainly in construction industry activities'. In other words, when construction activities take up more than half of your total employees' time (including subcontractors). The Levy was introduced to support construction employers to make sure the industry has the skilled workforce it needs.
56. However since then the Government has introduced the Apprenticeship Levy, which requires employers with a pay bill of over £3million to pay 0.5% of their pay bill that towards the Apprenticeship Levy. While a Levy-paying employer can then access these funds via a digital account to pay for apprenticeship provision this is not always easy. There are limitations as to what the funds can be spent on, who the funds can be spent on as well as a cap on how much of those funds can be spent on each apprenticeship standard. For this reason, many employers find themselves with unspent Levy funds despite demand for apprenticeships and wider training.
57. Volumetric homes are manufactured in factories making use of technology to automate repetitive processes and improve working conditions. This increases demand for digital skills as well as traditional construction related skills. Increase use of automation and digital adoption will often mean that a higher level of skill is required. Often this training is done on site and tailored to the needs of the business. Legal & General have an on-site Training Academy to ensure their employees are equipped with the skills their business needs for the future.
58. Volumetric manufacturers are creating new, high quality jobs that people want to do, located where they are needed in the UK.

Government and Local Authorities

Question 10: How does the Government interact with Local Authorities to deliver more homes? How can this relationship be improved?

59. In relation to working with local authorities, we would highlight two key areas concerning the planning process and building regulations.
60. We have already highlighted in some detail above the role that Government at a national and local level can play by making land available for the development of new modular homes, and the need to ensure that changes to the planning process expedites planning decisions and creates greater certainty for both developers and local communities.
61. The current introduction of new building standards, with higher sustainability standards for new homes is welcome. Volumetric modular construction has demonstrated that it is willing and able to deliver against these higher standards now, as demonstrated in developments from Yorkshire, to the West of England and the South East.
62. Taking into account existing technology and the traditionally long timescales that operate within the traditional construction sector, in order to deliver, Government should bring forward the implementation of tighter regulation.
63. Many traditional construction methods work to long timescales and early implementation is essential if the desired outcome is to be achieved without unnecessary delay.
64. In relation to local authorities, it is also critical that the introduction of new Building Standards is accompanied by a significantly stronger approach to enforcement.
65. Currently, new homes can be built and sold claiming certain standards, but there is no post-completion check to ensure that the claimed standards have, in fact, been delivered. This both damages the integrity of the system and jeopardises consumer confidence. A rigorous post-completion check is essential to ensuring that the objectives of the Building Standards are achieved.

Question 11. What are the main opportunities and areas of innovation for meeting the UK's housing demand?

66. The traditional housebuilding industry has failed to innovate and update housebuilding methodology over decades and crucially missed opportunities to address the challenge presented by climate change. Standards in construction must now match the drive to net-zero seen in other manufacturing sectors.
67. Volumetric homes contain up to 97% less embodied carbon than a traditionally built home, as well as cost up to 20% less to heat than traditionally built homes. This is achieved through the use of solar panels and air source heat pumps. Make Modular supports those calling for incentives to move away from fossil fuels earlier and the decarbonisation of heat networks. Our construction utilises sustainable, natural materials such as wood and natural slate.

68. Scaling up the UK's volumetric sector would provide rapid capacity for delivering more new homes, houses and apartments that will achieve net-zero. Modular construction companies are already looking to the future and the introduction of the next generation of sustainable technologies such as kinetic energy capture; noise pollution eradication; fire retardation; carbon capture at source; and the utilisation of green hydrogen.
69. Speed is also an area where modular is leading the way, with a volumetric modular home taking as little as 12 weeks from order to delivery. Up to six volumetric houses can be installed in a day using a single frame and in a factory, we can produce each house in just two hours.
70. Finally, we also employ next generation in home connective and smart technology (both inter and intra house and apartment) to create places we want to live.

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