

Housing, Communities and Local Government Committee

Oral evidence: Modern Methods of Construction, HC 1831

Tuesday 7 May 2019

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Members present: Mr Clive Betts (Chair); Bob Blackman; Mr Tanmanjeet Singh Dhesi; Helen Hayes; Teresa Pearce; Mr Mark Prisk; Mary Robinson; Matt Western.

Questions 252 - 317

Witnesses

I: Kit Malthouse MP, Minister of State for Housing, Ministry of Housing, Communities and Local Government; Andrew Stephenson MP, Parliamentary Under Secretary of State, Minister for Business and Industry, Department for Business, Energy and Industrial Strategy; Isobel Stephen, Housing Supply Director, Ministry of Housing, Communities and Local Government; Fergus Harradence, Deputy Director, Construction, Department for Business, Energy and Industrial Strategy.

Examination of Witnesses

Witnesses: Kit Malthouse, Andrew Stephenson, Isobel Stephen and Fergus Harradence.

Chair: Thank you for coming to give evidence to the Committee this afternoon. Could I just ask Committee members, to begin with, to put on record any interests they have that may be relevant to this inquiry. I am a vice-president of the Local Government Association.

Teresa Pearce: I employ two councillors in my office.

Mr Dhesi: I have none, apart from having worked in the construction industry for almost 20 years.

Helen Hayes: I am also a vice-president of the Local Government Association and I also employ a councillor in my team.



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Matt Western: I employ a councillor in my team.

Bob Blackman: I am a vice-president of the LGA and I employ a councillor in my office.

Mary Robinson: I employ a councillor.

Mr Prisk: I am a fellow of the Royal Institution of Chartered Surveyors.

Q252 **Chair:** Thank you for coming, Ministers and your officials. Housing Minister, you have been with us many times before. Welcome to the Business Minister for your first appearance before us. I understand and appreciate that you have to go off and do other things; this is not the only thing on your agenda today. We understand that and we will try to bring forward questions that are directly relevant to you, but I think your officials can stay. Perhaps, Ministers, at the beginning you could introduce your officials to us so we know who they are as well.

Kit Malthouse: I am Kit Malthouse, the Housing Minister.

Chair: Sorry, your officials. We recognise who you are.

Kit Malthouse: I thought maybe you might.

Isobel Stephen: I am Isobel Stephen, housing supply director in the Ministry of Housing, Communities and Local Government.

Fergus Harradence: I am Fergus Harradence, deputy director of construction in the Department for Business, Energy and Industrial Strategy.

Q253 **Chair:** You are all welcome at the Committee this afternoon. Obviously, modern methods of construction is something that everyone is looking at, interested in and wondering whether it is going to work. You have a working group in the Department, Minister, which has published a definition framework for MMC, which sounds very grand. Is it going to help?

Kit Malthouse: We certainly believe so, yes. One of the issues with MMC, like all new technologies, is creating an atmosphere of acceptability in terms of not just the industry that is using it, but the various other industries that underpin it: the insurance industry, the finance industry and indeed the consumer.

In our national mythology, there are certain perceptions about prefabricated building techniques, which need to be challenged if this technology is going to take off. Part of the mission of the working group, which Mark Farmer is very helpfully pulling together, is to create an assurance framework in which the quality, durability and acceptability of these techniques can be embraced by participants in the industry other than just the housebuilders themselves.

Q254 **Chair:** There is a bit of tension—I do not know whether tension is the right word—between trying to look at everything that might come under



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the MMC banner and saying, "This is MMC; we need to have a view about it", and trying to narrow down the range of techniques and maybe standards so there is a concentration on them and perhaps less diversity. Is that tension there? Do you have a view about it?

Kit Malthouse: No, I do not think so. It is not designed to stifle innovation. If anything, it is designed to encourage it. In a definition framework, and indeed within the changes that will come following the review of building regulations, you would hope that somebody who comes forward with an innovation will be able to slot it in and gain acceptability for it, so it can be used safely. I do not mean just from a fire or building safety point of view but from a mortgageability or insurability consumer point of view.

We do find—I have certainly found this in my own experience—that there are people who bring innovations forward who have difficulty getting any kind of toehold in an industry that has got used to doing something in a particular way. The history of this industry is that there was an element, back in the 1980s, of trying new techniques with timber frame buildings. Unfortunately, the timber that was selected was not of the quality that you would have expected. There was quite a lot of defect experience, and there was a rush back to brick, mortar and slate. If we are going to avoid that random approach, it is important to create an assurance framework into which innovation can slot and to get the insurance, the mortgages and the consumers that are required, as well as the acceptability from the builders themselves.

Q255 **Chair:** Yes, but we have also heard evidence that, if things are going to move significantly, there has to be an element of standardisation rather than a disparate range of products in different parts of the country with different builders using different systems. Is there not a conflict there? Does there not need to be some form of standardisation to get this to move?

Kit Malthouse: There certainly needs to be some level of common standard of durability and all that kind of stuff. I was at Kidbrooke Village this morning looking at a fantastic new development there. It is a 25-year project, with 5,000 homes, demolishing the old Ferrier Estate, which became a byword for the disastrous planning and building with concrete of the 1960s and 1970s. There, Berkeley Homes is developing a modular product.

It is quite interesting. I went into the product that is two years old. Since then, they tell me, they have been refining, altering and changing it. The chief executive was able to point to a particular stanchion in a wall, which they have worked out how to remove now to create a little more space. They are very proud of it. It has become a bit like a car. You start off with your Ford Escort MK1 and then there is the MK2, MK3 and MK4; we are now up to whatever mark of Ford Escort it is, but it is still basically a Ford Escort, which does what a Ford Escort does. That is what we want to get



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to: a framework that people can rely on, but which allows a level of innovation.

Q256 **Chair:** Does this meet all the challenges the Construction Leadership Council drew up, the work identifying barriers to the introduction and use of MMC? There is a whole list of things that need addressing. Is that being done? Has it been done? Where are we?

Kit Malthouse: Isobel can talk in a bit more detail, because she has been sitting in on quite a lot of the meetings, but we have had the participants round the table, who have been able to thrash that out. We have had the ABI, the banking industry, the construction industry itself and product manufacturers.

There is a general enthusiasm for having a system that is a common understanding between them all about what works. It ranges from your modular build and the tensile strength to which a modular build should be produced. There are other, to my mind, modern methods of construction coming forward, like push-fit plumbing, which is revolutionising the world of plumbing. Now we need to make sure that is built to a certain standard, because it is embedded in the wall and you do not want to be ripping it out the whole time. There is a range of products that they are looking at. Isobel, I do not know if you want to give a bit more detail.

Isobel Stephen: You started out, Chair, by saying that the definition framework sounded very grand, but it is deceptively simple. It is giving seven categories, exactly as you were describing, of different kinds of MMC, from the 3D modular construction at the Berkeley Homes end, which the Minister was just describing, through to section 5, which is pods. A pod is a bathroom, a kitchen or a porch that can be slotted into a house that is otherwise built in an entirely conventional way. Although in some ways it sounds like a very straightforward and simple thing to do, to divide it up into seven categories, as Mark Farmer and his group have done, as the Minister was saying earlier, it is really important to understand the quality of each of those different types of MMC and, in terms of data, to be able to count how many different things we can see coming through in the market.

Chair: Thank you. We will move on now. Helen has some questions, and these may be relevant to the Business Minister, because I appreciate you will have to go before too long.

Q257 **Helen Hayes:** In oral evidence to this Committee, housing developers have said that the lack of an established supply chain is one of the main constraints to increasing their use of MMC to build homes. What are the Government doing to support the supply chain? Are the actions set out in the industrial strategy and construction sector deal helping to create strong, integrated supply chains that will underpin collaboration?

Andrew Stephenson: First of all, thank you for the question and thank you, Mr Chairman, for understanding that I have to disappear shortly. I



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believe we are already on the second Urgent Question, so I will have to disappear even more quickly than I expected.

The construction sector deal is really focused on supporting SMEs. We have the funding that has gone in, the £170 million, through the Transforming Construction programme, which will help SMEs. I was visiting a housing construction this morning, which I believe the Committee has been to, the Swan Housing Association in Basildon. One thing we talked about there is that this is a complete transformation for the construction sector. They are not used to having suppliers that can do just in time, like you have for other parts of the manufacturing sector, because the manufacturing of homes in a factory is relatively new in this country. It is not new worldwide, but it is new in this country, so we have to support the whole supply chain; we particularly have to support SMEs. I am pleased that some of the funding has already gone to smaller companies to help them become integrated into this new structure.

Q258 Helen Hayes: On our visit both to Swan and to a much bigger site at Battersea Power Station, we found that almost everything that was needed for those sites was being imported from outside the UK. In Battersea, they are using bathroom pods for the residential dwellings there that are coming on trucks, one at a time, from Italy. In Swan, they are importing all the timber from Austria. It did not really feel, from those visits, as if there is a functioning supply chain in this country that the sector can rely on in any way at all. What action are the Government taking to address that issue?

Andrew Stephenson: You are exactly right. At the moment, it is early days in terms of the UK. We need to ensure that the supply chain has the confidence to invest here and to bring new products forward. At the moment, because of the uncertainty over demand, the uncertainty as to whether the Government were going to prioritise this and the uncertainty in the peaks and troughs of the economy, housebuilders and the supply train did not think it was necessarily something they had the security to invest in.

Now we have the cross-Government approach of saying that we should be prioritising modern methods of construction and looking at things like this, I hope we will start to see more UK-based companies thinking about how they can get into this space and how they can invest here, knowing that in the longer term—sorry, I am being nudged by the Whips—this is something where there will be security for their investment.

Kit Malthouse: As you depart to do your duty in the Chamber, Andrew—

Andrew Stephenson: Apologies, Mr Chairman. I am going to leave you with Fergus. He is very knowledgeable.

Kit Malthouse: We know now of about 30 factories across the UK. There are a couple of things that have been helpful. The first is that we have been sending very long-term signals about plans. There is the Affordable



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Homes programme, the infrastructure fund, the long signals we are putting out on Help to Buy and the general governmental targets that look out over five, 10 or 15 years for things like garden communities and the Oxford-Cambridge arc. They are sending long-term signals to the industry that it needs to gear up for that kind of output.

There is also a constraint that they are trying to overcome, which is frankly the number of people: there is a shortage of brickies, chippies, sparks and all the rest of it to build these things. Dealing with their own productivity is stimulating companies like Berkeley Homes and, indeed, some housing associations in the affordable housing sector. Accord Housing has two factories now, one of which I visited in Walsall; I actually cut the ribbon on that one. We are seeing a growth in output as the industry gets used to it, but there is still a bit of possible scepticism, which is what we are trying to overcome, before they fully embrace it as a technology.

Q259 Helen Hayes: This is perhaps a question for BEIS, but what is the role of the industrial strategy and construction sector deal in all this? How is that helping practically to secure the right supply chain in the parts of the country where it is needed, where there are plans in place that give those long-term signals? What support is there for the industry to make sure we are not importing everything from overseas?

Fergus Harradence: The main funded element of the construction sector deal, which is the £170 million Transforming Construction programme, is all about developing supply chains geared to make best use of modern construction technologies, digital and offsite manufacturing technologies, to deliver the homes and infrastructure the UK needs. We are investing that money in a combination of research and technology organisations, or technology and innovation centres, however you want to call them, which are centres that will enable firms to collaborate together to develop and commercialise innovative new technologies.

Secondly, through the R&D budget that we have over the four years of the programme, we are supporting innovative projects that are led by large and small companies in collaboration with higher education institutions, technology and innovation centres and other organisations. Again, this is all about the development, the commercialisation and the demonstration of these technologies.

Q260 Helen Hayes: Some builders, as we saw in Basildon, are investing in their own factories. What do you see as the benefits of integration of this type? Is there not a risk that it will simply reinforce the established position of the biggest homebuilders, which historically have been both part of the problem as well as part of the solution to housebuilding delivery in this country?

Kit Malthouse: It is not necessarily going to be a problem. It is certainly the case that some of the large housebuilders, for example, try to secure



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their supply chains in a number of ways. The famous interview when the former chief executive of Persimmon walked out was on the day they were opening the Persimmon brickworks, because they wanted to secure their own supply of bricks. There is no issue with that.

In many ways, it is possible for these factories to produce not just captive for their own market but for others as well. Particularly if you are producing the pod-style inserts, if you have a factory that is just producing bathroom pods, you are not necessarily going to use them yourself; you will want to maximise your output and sell them to others as well. When you look at Kidbrooke today, there is a strong possibility that that might happen. The Berkeley Homes factory is at Ebbsfleet. There is a 5,000-home development there, which will keep them going for 10 years, but post that they will have a factory. You do not want to be carting your stuff too far round the country, particularly if it is large modules going in. They are dropping them in fully carpeted; they are completely fitted.

It will help from that point of view, but at the same time you are right: you hope that it will stimulate a supply chain of these units that can be bought off the shelf as well by other types of developers. One of the most exciting things about it from my point of view is that it is stimulating new entrants into the market. We now have a new style of developer, which is a bit more like a film producer, in that they can assemble the land, the permission and the product without going anywhere near a shovel, a trowel or a subcontractor. The thing is just craned in on commission to a site they have themselves put together. We are seeing a number of developers emerging with this kind of model, which we hope will add to diversification, competition and therefore greater output in the market.

Fergus Harradence: If I could give you a couple of specific examples, one of the biggest investments in offsite manufacturing for housing made in the UK to date has been made by Legal & General, at its factory near Leeds. It is either the highest or second-highest volume factory in the UK. You are also seeing some other smaller firms like TopHat in Derby coming in to the market. They are attracted by the potential of offsite manufacturing to give them a competitive advantage vis-à-vis traditional housebuilders.

Kit Malthouse: It is fair to say that about the housing associations, too. I visited Accord Housing one, which is its second factory. It will be producing something like 1,500 to 2,000 homes a year out of two of its own factories, all of which will be for affordable housing.

Q261 **Matt Western:** This is more directed towards you in BEIS. Should more have been done a few years ago, particularly at the end of the housing market for affordable and social homes, to encourage component supply? Existing traditional housebuilding and construction was already moving in this area. Whether it was porches or bathroom units, as we have heard, there was a need for them. Could more have been done a few years ago?



Fergus Harradence: More could have been done to stimulate the use and uptake of offsite manufacturing technologies, not just in relation to housebuilding but in relation to other kinds of assets and infrastructure, for example linear infrastructure like road and rail. There are lots of common types of buildings or forms of built asset that are essentially the same. They do not need to be built on a bespoke basis individually, every time, say, a water company needs a new substation or pumping station or Network Rail needs a new railway station.

If you look at the work that has been done by companies like Anglian Water, which has been a real pioneer in the use of offsite construction technologies to drive down the costs of maintaining its network and improving the efficiency of the construction projects it does, it is very hard to argue against the point that more should have been done years ago to encourage the use of these technologies across the industry.

Q262 **Mr Prisk:** This is principally in regard to the construction council, but it maybe follows on from the remarks the Minister made. When I was at the Department in its previous guise, one of the interesting elements of resistance to the aerospace or the automotive sector sharing suppliers was quite a strong institutional issue around collusion or perceived collusion and then, on the other hand, the issues around whether the competition authorities would step in. I suspect that is not the case here, but how is the construction council able to overcome resistance from the large equivalents to OEMs, so the major builders, and make sure the supply chains work more closely together? That is quite an important issue, if this is to progress.

Fergus Harradence: The biggest problem the industry has to overcome is the inertia caused by its current business model, which is based on a very fragmented industry coalescing around individual projects, large and small scale. Once a project is complete, the supply chain dissolves without the knowledge, experience and benefits of it being captured and retained within that supply chain so they can be used on future similar kinds of jobs.

It is a different nature of challenge, really. This is a sector where supply chain relationships have traditionally been very adversarial and firms are often in conflict with each other. It is about how you get such a sector to work more in the way you see in other sectors, where people share information at an earlier stage in projects, where they collaborate more effectively and where they have shared digital platforms for planning and monitoring the jobs and managing the payments process and things like that.

What is really required in the construction industry above all else is a culture change. People need to say, "We want to make progress as an industry. We want to do things differently". They need to take the steps necessary across technology adoption, investment in skills and being willing to change the business model and their own payment practices in order to achieve that objective.



Q263 Mary Robinson: I want to look at the workforce and skills around this industry. The evidence we have received suggests that the advantages of MMC for workers, such as improved health and safety and more digital working, will encourage more workers into the sector. However, we have heard from offsite manufacturers that they are struggling to recruit and retain skilled staff. Does MMC really have the potential to overcome the shortage of workers in the construction industry?

Kit Malthouse: I certainly hope so. It can definitely play a part in dealing with the overall productivity issue and the constraint. As we move towards 300,000 homes a year, the fact you can build these things more quickly, frankly, will help. Secondly, like you, I have heard evidence from the industry. They tell me that it is much better to work indoors than outdoors. Minimising your time outdoors, particularly during the winter, is much more attractive from that point of view. In the end, the skills required are broadly the same. I am not necessarily convinced that you need fewer people. You might need about the same, but their output will be greater.

We hope it will make a difference. There is, though, a wider challenge for the construction industry generally in attracting people into it, particularly young people. It is the same challenge I saw when I was in London to do with the hospitality industry. Back when I was at City Hall, we had a problem with the hospitality industry growing like Topsy in the capital; we were the most visited city in the world. They could not attract young people in, because young people did not believe that there was a career progression for them or that they could start on the factory floor and move up to be the local area manager for Barratt Homes, or whatever it might be. There was a sort of perception barrier, which is more difficult.

Introducing an element of technology, with a fixed place of work that is more amenable and indoors, and is more about technology and changing techniques, where there is also the possibility of career progression up through a ladder, will help to attract more people in.

Isobel Stephen: I do not know whether the Committee has had an opportunity to see the research the CITB published on Friday, which looked at this in some more detail. Make sure you get a copy. That estimated that, if we are looking at scaling up to 300,000 homes a year, which is the Government's ambition, 195,000 workers, additional to the number that are already within the construction industry now, will be required.

They have modelled scenarios with various proportions of modern methods of construction and looked at their impact on the workforce, and it is exactly as the Minister has just described. If you get as far as 50% of your output being through modern methods of construction, the overall number of workers is reduced by a small fraction—they have estimated 5%—but what is much more striking is that the types of work become different. You need just as many managerial or project manager type staff, but fewer brickies—their estimate was about 10%—and fewer



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manual labourers. As both you and the Minister have said, you need more people working in different environments.

That gives you quite a lot of scope to broaden the diversity of the construction workforce, which, as you will know, is predominantly male and has a certain age profile. It would give you more scope to do something with that and to broaden the types of people who would be attracted into this kind of career. I will make sure the Committee gets a link to the research, which is a really helpful contribution to the debate.

Q264 Mary Robinson: Would that also tackle the problem of retention, if there were an emphasis on learning more skills within the sector?

Isobel Stephen: There is definitely scope for that to be the case. It is a different kind of job. You are in a factory and you have much more certainty about the length of time that you are going to be employed for, as against the model Fergus was describing where you are on a project for a certain amount of time and, when the project is over, you no longer have a job until the next project comes along. It gives you more scope for employing different kinds of people.

Kit Malthouse: You also have a settled place of work, so you are not pinging around. If you are a bricklayer, you can be moving around all over a region with no particular settled place of work, which makes family life and all the rest of it more and more difficult. That enhances the attraction of that kind of work.

Q265 Mary Robinson: In the *Homes England Strategic Plan 2018 to 2023*, it asked for industry bodies to act as partners and contribute to increasing capacity by offering apprenticeships and delivering skills training. Is this approach working? Are apprentices gaining the digital skills they need for MMC?

Kit Malthouse: We are doing all right on apprentices. If I am perfectly honest with you, I am pushing the industry quite hard on what it is doing about apprentices generally, the type of qualification apprentices get, the type of training they get when they are offsite and all that kind of stuff. We want to have a bit of a look at it. There are some targets in the construction industry deal to get us to apprentice numbers. Is it 23,000? It is something like that.

Fergus Harradence: It is 25,000.

Kit Malthouse: It is 25,000; that is right. To be honest with you, it is not enough. One of the issues with the industry is that, in the old days, there used to be a kind of informal apprenticeship programme. Every brickie would have a hod carrier, who was invariably a young man, who was training to be a brickie, basically. That does not happen any more. The structure of the industry, where you have a large number of subcontractors and less of a direct workforce, means that the systemised apprenticeship you might have particularly in a large organisation just is not there.



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You quite rightly challenge us on the requirement for more apprentices. Whether we build them offsite or onsite, we are going to need more people. We need to look carefully at what we are doing there.

Isobel Stephen: The fragmented nature of the industry that Fergus referred to earlier makes it more difficult for the apprenticeship model to work. The larger developers tend to have fewer direct employees than you might expect, given the size of the business, because of the way they work through subcontractors. The evidence suggests that small and medium-sized enterprises employ proportionately more apprentices, which is one of the reasons why it is good to encourage them to be in the market.

The Construction Industry Training Board, as you will know, is industry-funded and industry-led. It has been doing some important work on agreeing priorities for the sector. There is also the Construction Skills Fund, which is supporting 21 hubs on housing developments, which will help. To come back to your question about whether it is working, my summary answer would be that it is not yet. As the Minister was saying earlier, there is quite a lot more work to do.

Q266 **Mary Robinson:** There are different ways for people to learn skills and to be trained. The Construction Leadership Council is involved in setting up the centres of excellence. How much progress has been made with that?

Fergus Harradence: You are specifically referring to the centres of excellence programme and the Innovation in Buildings work stream. The aim of that strand of work was not to set up new centres; it was to identify existing centres of excellence that exist within the UK, which have the ability to support the offsite construction industry. The centres that have been identified are a combination of existing research and technology organisations. They are things like the Manufacturing Technology Centre in Coventry or the Advanced Manufacturing Research Centre in Sheffield. Then you have virtual networks like Buildoffsite, which is an extended network that enables peers to learn from each other effectively around offsite construction. This is also organisations like the Building Research Establishment at Watford, which can help people test and validate the quality of component parts for offsite buildings.

The Innovation in Buildings work stream wanted to raise the profile of these centres across the industry and help people find organisations that can provide them with useful advice and support. That was the rationale behind that piece of work. It was not to fund and establish new centres of excellence within the UK, which we probably do not need. We need to make better use of what we have and make sure people have the ability to access it.

Q267 **Mary Robinson:** Are the centres of excellence sharing best practice and collaborating adequately?



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Fergus Harradence: Yes, we think they are. The majority of them are involved in one way or another with the Transforming Construction programme. The MTC receives direct funding as part of the core innovation hub, as does the Building Research Establishment. Other centres they identified, such as the Construction Scotland Innovation Centre or the AMRC, are receiving project funding from the R&D budget to conduct specific activities.

Q268 **Mary Robinson:** Given that the various areas around the country may be embarking on housebuilding programmes, are the regional centres of excellence, perhaps in the north-west and other areas, set up and working?

Fergus Harradence: There is not a centre in every region, but we have a reasonably good spread across the UK. No firm engaged in the sector is more than one or two hours away from one of these centres.

Kit Malthouse: There are quite a few areas that are keen to have them, where we are talking to them about putting them in, whether that is in the Midlands, somewhere in the Oxford-Cambridge arc or wherever. We need to be nimble with them.

Having said that, we have to be slightly careful. Notwithstanding all the work and effort that is going on on the Government side, in the end I am trying to embed the idea that it is the industry's responsibility to find, train and retain its own workforce. We can lead a horse to water, whether it is on technology or apprentices, but in the end they have to take responsibility for their own human supply chain as much as all the rest of it. Unless they do, we just will not get the throughput and they will not get the growth they want and need.

Q269 **Mary Robinson:** Do you see the new T-level in construction increasing the number of learners who want to go into this and get the necessary skills to have a career in MMC?

Kit Malthouse: We are definitely in a society that values qualification these days. In the old days, certainly when I was a kid, there were large parts of the population who did not have a qualification of any sort and functioned perfectly happily. We are in a new world now where people want some kind of stamp of approval that a person is qualified. Anything that helps with that formalisation and the sense that you can qualify and move on, then qualify again and move on another step, helps with an aspirational population.

In the end, though, much of the training and the qualification they get in these skills has to be practical. It is an issue that comes up in conversation with my ministerial colleagues. If you are an apprentice bricklayer, how much time are you spending laying bricks? There is a science to it; you need your maths, your literacy and all the rest of it. But, in the end, this is an art. I do not know if you have ever seen a really great bricklayer go at it, but it really is. When I was a kid, we had a



bricklayer who worked on various projects for my parents called *Frank Maloney*. That man could have had a career in ice cream; he was an artist. He was an artist with mortar and trowel. That is the skill. Only practice brings you that skill: understanding the texture, the feel, the tricks of the trade that you need and all that kind of stuff.

Having said that, there are robot bricklayers out there now, which can build a house four times as quickly as a human being, but they do not point terribly well yet. Pointing is now the skill rather than the actual laying of the bricks, perhaps.

Fergus Harradence: It is early stages for the T-level programme yet, but the industry has engaged with the process, which has been managed by the Department for Education, for defining what occupations people can train for careers in through the T-levels and to ensure that the skills and experience they are going to get as part of obtaining that qualification will be directly relevant to them and help them to get future employment. We are optimistic about it at this stage, but the programme does not get going until 2020-21, so it is hard to say what impact it is likely to have at this point.

Q270 **Mary Robinson:** Do you see a T-level in MMC being particularly useful because there are different types of skills involved in the fabrication?

Fergus Harradence: Yes, one of the strands of the construction T-levels is going to be about the design of buildings and building services, which is directly relevant to offsite construction. There is another strand that is more directly relevant to the traditional trades like carpentry and joinery.

Q271 **Chair:** I will just pick up on the centres of excellence. Mark Farmer came before us before, and I asked him specifically about the Advanced Manufacturing Research Centre in Sheffield, which I know pretty well. He was saying that it was the model he wanted to see. The industry sorted out its differences on research and training—it is absolutely magnificent—with massive help from the University of Sheffield and from the regional development agency, when it was there at the start. What you were describing earlier was almost several centres around the country, rather than having it focused in one, like Advanced Manufacturing Research Centre. Is having lots of different centres going to fragment that effort or help it?

Fergus Harradence: The great advantage of centres like the Advanced Manufacturing Research Centre and the Manufacturing Technology Centre is that they are already existing, established centres. Primarily, both of them focus on the automotive and aerospace sectors; that is their core business and why they were created. It means they are sustainable, well-run institutions with the ability to operate at scale.

From the perspective of the construction sector, one of the great benefits of these centres is that they have gained an awful lot of expertise in other sectors, which they are now bringing into the construction sector.



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There is a good case for saying that the construction sector does not need to invent a whole lot itself; it can use manufacturing technologies that have been developed for other sectors. This is not just automotive and aerospace but things like food manufacturing as well, which is a technology I have seen being used in the Advanced Manufacturing Research Centre.

Similarly, on the digital technology side, you are looking at a set of technologies that can be used for designing buildings that have been used in the aerospace and automotive sectors for 30 years. This is computer-aided design. It is simply that, in the context of the built environment, it tends to be called building information modelling. The strength of these sectors is that they can draw on the expertise they have gained in other areas, bring it into construction and say, "What we can really do for you is find the relevant technologies, work out how to put together an integrated manufacturing process and then teach you, as an organisation, how to adopt and embed it in your working practices".

Q272 Chair: It is construction almost piggy-backing on what is already there rather than reinventing it.

Fergus Harradence: Yes, that is very much phase 1. As time evolves, you would hope the sector becomes more innovative itself, once it has built its own capability and capacity to do that.

Chair: I am pleased. I know Mark Farmer has been in touch with Professor Keith Ridgway at the AMRC in Sheffield and they are already talking about those sorts of issues.

Fergus Harradence: That is good.

Q273 Mr Dhesi: Minister, in the 2017 Conservative Party election manifesto, the Government pledged to meet the 2015 Government's commitment to secure 1 million additional homes by 2020, plus another 500,000 by 2022. Do you think you are going to meet that target?

Kit Malthouse: We are pushing hard to get there, yes. We were at 222,000 homes last year. Leading indicators for next year look as if we are going to get towards 240,000. If I can beat that in the years following, we should hit the target. It is not going to be without challenge to get to 300,000 by the mid-2020s, which is where we need to get to, and to sustain it for a period, not just to have a peak. It is going to be a challenge. That is why we are inserting enormous Government funding, developing new technology, disrupting the market so there are more players competing and increasing output and, to a certain extent, supporting demand through Help to Buy. It is not without its challenges.

Q274 Mr Dhesi: You think you will meet that target, though.

Kit Malthouse: We will certainly try to hit it, yes.

Q275 Mr Dhesi: Can wider use of modern methods of construction help to meet that target or perhaps increase the numbers of homes that are



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delivered?

Kit Malthouse: We certainly hope so, as I said earlier, in two ways. First of all, there is a big productivity gain there, which would be great. If they can produce more output for the same input, that would be fantastic. If they can do it more quickly, that would be great as well.

Secondly, as I said earlier, it will stimulate new players in the market. The problem we have in the UK market at the moment is that it is a highly regulated one that has agglomerated into a small number of large players. The crash of 2007-08 wiped out 50% of all small builders, which were producing more than half of the output. They are now producing a quarter or something like that. It is a tiny amount. Restoring them and their output is critical. We will only do that if we have a big and vigorous market of players. One of the barriers to entry for a small developer is the basic access to the traditional supply chain: the bricks, the mortar, the brickies, the carpenters and all that kind of stuff, which you need.

By being able to buy a product off the shelf, effectively, you immediately remove that barrier to entry. You see that, for example, in self-build and custom build. I do not know if you know, but this week is self-build and custom build week. There is a variety of events. Grand Designs Live is on at Olympia. I will be appearing on stage on Thursday, you will be pleased to know. There is also an event here in the House evening. I went to a site called Graven Hill, which is the largest self-build site in Europe, just outside Bicester. When you wander round and they point at the self-build houses, one of the most frequent houses they point to is a modular house that has been ordered from Poland and shipped on a truck to the UK. A barrier to entry has been immediately removed there: you can buy the product from somewhere else and have it shipped in and erected in 14 days. Yes, we think it will help with overall output.

Q276 **Mr Dhesi:** Thank you very much for that. After this meeting we will all be rushing off to get our tickets to hear your address at that exhibition.

Kit Malthouse: I will be interviewed by the fabulous Kevin McCloud.

Mr Dhesi: Brilliant.

Kit Malthouse: He will be downstairs, if you want to come. It is 7 o'clock. He is appearing downstairs in Dining Room A.

Q277 **Mr Dhesi:** There you go: I gave you an extra opportunity to get your plug in for that event.

How are you going to measure whether the initiatives to increase the use of MMC are successful?

Kit Malthouse: To a certain extent, I am indifferent. What I am really focused on is output, and the overall measure will be the number of homes that are delivered. If I can do more, and they are better and come more quickly, and the industry sorts itself out, I ought to be indifferent as to how it is done. We happen to think that MMC will help, so we are



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willing to put some Government heft and money behind trying to stimulate it, but it is for them. In the end, if we are putting Government money in, we need to measure output for that.

We have KPIs at Homes England, which, as you know, is in charge of distributing much of the money that we put out there, to look at where MMC is being used. Some of the funding we provide in the Affordable Homes programme, the Home Building Fund and the Accelerated Construction programme, which is entirely targeted on MMC, is there to stimulate this industry. We will be monitoring numbers through those, but basically HE has a KPI pointed at MMC.

Q278 Mr Dhesi: You may be aware that, amid the uncertainty of Brexit, the Construction Products Association has downgraded its forecast for the construction industry as a whole. In particular, that is true of all those industries that have large up-front costs. Do you have any particular concerns about the potential impact of Brexit on MMC and its take-up?

Kit Malthouse: I have to confess to you that I do not have enormous concern. Naturally, you would expect there to be a temporary fluctuation, but the fundamental demand and supply equation in the UK for housing remains the same and will do for some time to come. The Government's commitment, from a funding point of view, is unwavering and increasing as every fiscal event occurs. We had another £500 million for infrastructure; we are extending Help to Buy; we have put another £2 billion into the Affordable Homes programme beyond the current timeframe so housing associations can now bid for 10-year money, which is the first time they have ever been able to do that. The long-term signals are there.

While, in my lifetime, the property industry has always been "two steps forward, one step back" because, like any market, it naturally fluctuates, I sense it will be a temporary one. If you look at expectations data, it shows you that there is a short-term downward expectation and then a long-term strong upward one.

Q279 Mr Dhesi: Say there is a no-deal Brexit scenario. As my colleague Helen pointed out earlier, during our visit to Basildon, we discovered that a lot of MMC suppliers are heavily reliant on supplies coming in from continental Europe. Do you agree that a no-deal scenario would have a huge impact on MMC?

Kit Malthouse: We have taken steps to prepare for that from a departmental point of view, and we have put through legislation required to deal with some of the component issues, but from an MMC point of view I would not necessarily think so, because it is a new technology that is coming in. In the end, it is preferable all round to avoid no deal. The way to do that is to vote for a deal.

Q280 Matt Western: Minister, it is good to see you again. Every time I see you, I seem to ask or talk about the same subject, which is social



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housing. We had the Shelter commission into social housing back in January, and it identified that we need to build 155,000 social homes a year and 3.1 million over 20 years. Speaking from my own experience in my constituency, we have not seen one council house or property built since 2015; since 2010 only 28% of properties built have been social or affordable. There is a massive issue in terms of homelessness and rough sleeping. To what extent can MMC and this nascent industry catch up on the massive shortfall and crisis that we have in social housing?

Kit Malthouse: You are quite right. The policy changes we have made recently to set councils free to build this next generation of council homes is designed to address that concern. Notwithstanding the severe financial problems that the country has had for the last 10 years, we are now in a position to do that, which is fantastic.

While the solutions to homelessness and rough sleeping are often more complicated than just the house, nevertheless it is part of the solution. Increasing supply generally of all types of housing and tenure is the mission, and MMC can play a big part in that. Housing associations are embracing it. As I said before, I went and cut the ribbon on an Accord Housing factory in Aldridge in the West Midlands, near Walsall, where it is producing 1,000 homes a year. That was its second factory. Accord is very keen on it. We think it has a big part to play.

There is, though, a sort of secondary effect that is beneficial all around, which is that MMC houses can have extremely good environmental credentials. From an insulation point of view, when I cut the ribbon, Accord told me that, in the homes it builds from the factories, it has low arrears, because people can afford to heat them more affordably. There is a kind of social justice angle to MMC and its higher environmental standards than existing stock, which is important. They showed me a lovely brick bungalow, which they can put up in 14 days. That is bound to have an impact.

Q281 **Matt Western:** In a way, as you describe it, it could go a long way to addressing the challenge of viability issues with developers and them saying, "We cannot build out that proportion of social and affordable", because it is that much cheaper to produce and cheaper to live in. Therefore, the 40% is much more realisable.

Kit Malthouse: That may be the case. We have had the conversation before: no two sites are the same. It very much depends on what you are doing, where you are doing it, how much you paid for the land, what the remediation is and where you are in the country, as to what percentage of affordable homes you can get and what percentage is needed.

In terms of production, the public sector or semi-public sector is no different to the private. If it can help increase output, it should be used if at all possible. Whether it is going to be cheaper will depend, like in most industries, on volume. When the first iPhones appeared, they were disproportionately expensive. Now there are billions of them, they are still



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not that cheap, but they are now much cheaper than they were. If we can get to a situation where there are tens of thousands of houses rather than thousands of houses being produced out of MMC factories, they will become cheaper and you will get economies of scale, and factories that are producing 1,000 will start to produce tens of thousands.

There are some practical problems around that volume. Carting large pods around the country is logistically difficult. As an example of the things we are going to have to look at, if you move a large housing pod on a flatbed truck across five counties, you need five movement orders from five different police forces to move the thing. There are some logistical issues we will have to deal with, but, in the end, the more there are, the cheaper they will be.

Isobel Stephen: The Minister was just describing, it is a virtuous circle. If large housing associations signal that they are going to put more emphasis on modern methods of construction, that will make the homes cheaper. As an example of that, London & Quadrant has said that by 2025 it expects all its homes to have some element of MMC in them. Given that it expects to build 100,000 homes over the next few years, that is really helpful in terms of the supply chain and giving people who are investing in modern methods of construction factories more assurance in doing that, because they know they have the demand.

Q282 **Matt Western:** Back in the Budget last year, the Government lifted the borrowing cap for local authorities. With the extra £1.2 billion that is expected to come in, is that not a great opportunity for money to be ploughed into MMC?

Kit Malthouse: We would hope that local authorities would seize the challenge and do so, yes. The Affordable Homes programme, which local authorities can bid into now, is configured in a way to embrace MMC and to encourage its uptake. Housing associations like L&Q and Accord are taking it up with alacrity. Those councils that want to start building and that want to develop an HRA will have to consider by what method they do it. If they can get it cheaper, better, with a higher quality and great environmental standards, why would they not?

As I say, to a certain extent, we are in a position of leading the horse to water. We cannot make it drink. It is for a local authority to decide what kind of building it wants in a particular area. In Greenwich, as part of that fantastic development at Kidbrooke, they have said to the developer, "Yes, let us have MMC". They are developing a product there that looks and feels fantastic, and is very strong and good. Other people may want something more traditional; it is for them to decide.

Q283 **Helen Hayes:** On the issue of logistics and moving the homes around the country, is that not a really basic part of the industrial strategy approach to the role that MMC can play in delivering the homes we need?

Kit Malthouse: It is.



Helen Hayes: The fact that it is being flagged as an issue, without any sense of the broader strategy and what the solutions to it are, is a little concerning and an indication of how behind the curve we are.

Kit Malthouse: I would not necessarily say that. Be careful what you wish for. We want the industry to position itself in such a way that the M6 is not just a line of flatbed trucks with houses on them. It is about things being positioned in a strategic way and for us to iron out some of the problems that occur. As I say, we only know of 30 factories. This is a problem that is now coming to light, which we will have to do something about, but it is not an uncommon problem. When they move wings from the Airbus factories, these massive things in Bristol have to be moved across counties and down across continents. It is not an insurmountable problem; I put it there as a wrinkle that needs to be sorted out.

Q284 **Helen Hayes:** Surely the point about having a strategy is that Government have a role to play in joining up the areas where there is a need for homes with the construction sites that can deliver those homes so as to minimise those problems.

Kit Malthouse: That is true, absolutely. Government have to be agile enough to deal with the problems of success. This may be one of them. All I am saying is that we will need to be agile enough to deal with it. A growing industry has identified a problem that we need to address. I am putting my hands up to that, but this is a problem of success.

Q285 **Mr Prisk:** At the beginning, Minister, you rightly talked about assurance and giving a wider group—the mortgage lenders and insurers—confidence so the market can flourish. We listened to Mark Farmer. He was quite clear that he respects what BOPAS stands for but that there should be an MMC scheme specifically. We are getting quite conflicting information about when that might launch. Can you clear the fog and tell us when the MMC scheme will be launched?

Kit Malthouse: There is a good question. I have to talk to Mark about that.

Isobel Stephen: We do not have a timescale. The group has been doing really good work. As Mark will have described to you, he has all the right people round the table. The definition framework they published last month shows really good progress, but it is a very complicated issue with lots of different players. We do not have a deadline for Mark; he is working that through with the people on his group.

Kit Malthouse: It is a good challenge, and we should find out when they think our horizon is. Do not forget that there is a secondary control mechanism or standardisation mechanism, which is the building control and building standards regulations. All this stuff has to confirm to building regs and building standards, and be inspected as such.

There are MMC products out there, which are busy being insured and mortgaged. This very morning, I was standing in the sitting room of



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someone who is doing exactly that; it has been up for two years. But you are right. It is a good challenge; we will try to find out.

Q286 Mr Prisk: In establishing that scheme, how confident are you as a Minister that the mortgage lenders and insurers will have the confidence to engage with this new product? They are always reticent about new products. There is no data to base their forward planning on. I am thinking here not just about the new developments that we are all perhaps focused on. Especially from the insurers' and mortgage lenders' point of view, where are they going to be in 20 or 30 years' time? How confident are you that the scheme that Mr Farmer is developing is going to have that industry's assurance in their minds?

Kit Malthouse: I am as confident as I can be, given that they are sitting round the table and showing willing. They are participating, not least because they see a commercial opportunity. Why would they want to exclude themselves from a growing part of the market, if they can work with the manufacturers to produce a product that satisfies their needs? We are getting a lot of co-operation from them.

In particular, one of the prizes that MMC holds out is for new start-up developers and smaller developers to get more of a toehold. I was at a round table on Thursday with Kelly Tolhurst, who is the Small Business Minister, talking about access to finance for smaller builders. There were a lot of banks around the table that seemed eager to help. It would seem sensible to me to combine the two. If output of this kind of stuff increases very significantly, as it is already, there is a commercial imperative for them to engage.

The finance market is an example of a highly regulated market where the Government have stimulated more entrants. Therefore, there is a lot of competition now and a lot of pressure to get capital out of the door and lent. You will see more and more people possibly even specialising in lending into these markets.

Q287 Mr Prisk: Underpinning that are the concerns that we have seen in writing to this inquiry. How durable are the materials? What are the fire safety issues? That is especially sensitive at this moment. What can be done to make sure the MMC scheme and what underpins it is something that you, as Government, are confident about? If Government are confident about it and if Government stand behind the MMC scheme, that will bring forward the lenders and encourage the insurers. What concerns do you have about it? We heard earlier about issues around the old prefab days of the 1970s. There is that need to give people confidence. Where do you think the problems may lie?

Kit Malthouse: There are advantages to MMC, from a quality point of view, over standard build. You very well know, because they have been documented, the problems we have with quality in the standard build market; it is not unique to MMC. The advantage is that you are dealing with a systemised product and that creates an audit trail. That product



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can be tested, assessed and engineered in line with building standards and regulations. Then you can, to a certain extent, rely on the fact that the steel frame box that is fitted out with these bits and pieces will be manufactured to the same standard again and again and again.

In standard build, that is completely variable. It depends what bricklayer you get as to whether he remembers to put the ties in between the walls in a cavity wall situation or even remembers to put the insulation in. I have a thing in my constituency where I have 50 homes where the builder failed to put the roof ties in. That is being rectified at the moment but, in theory, the roofs could all have parallelogrammed over the last year or so. The unpredictability or human error is removed because of the systematisation of the production.

One of the things we are trying to do in the other bit of work I am engaged on, which is the reform of building regulation, is to create the idea that there is a thread of data and accountability through, particularly on safety, that is auditable, inspectable and assessable. In many ways, that is much more achievable with this kind of manufacture than it is with the ordinary or standard manufacture that is out there, for the reasons I have said. In many ways, I am more reassured about this stuff, because it is a bit like a car that is made on a factory line rather than a kit car that is put together by an amateur. There is a system, which we can assess, as well as the product itself.

Anecdotally, one of the things that the industry will tell you is that, because this stuff has to be craned around, it is stronger than standard build. It needs to be manipulated and, therefore, has to have a certain amount of tensile strength and supportable strength to withhold movement, so there are reasons to believe that it should be better.

Isobel Stephen: The Minister is absolutely right. The technology needs to be supported by exactly the same set of regulations. There are lots of reasons to believe that it might be better. There are things about it that we need to think about in that context. In any situation where you have emerging technologies, we need to make sure that the technology and the regulation keep in step with one another and that is something that we are really alive to.

There is also the issue, which the Minister has referred to, of having a factory and then having a site and the interface between the factory and the site. The golden thread that the Minister was talking about is particularly important in that context, because you do not want the people in the factory blaming the people on the site or vice versa.

There are also some technical issues. As you know, cross-laminated timber has been banned on high-rise buildings, but it has been used in MMC buildings, so that is something we need to think about. Where you have 3D pods that are put together and, because of the way they slot together, there are voids between the pods, there need to be fire stops in those voids. These are some issues to work through. In terms of the way



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people think about the home they buy and whether they are able to modify it later on, such as putting a conservatory on the outside, because the buildings are not constructed in the same way you cannot necessarily modify them in the same way. The golden thread that the Minister was talking about needs to continue beyond the purchase of the house, so that the buildings continue to be safe even if they are modified.

What I am saying is that we recognise there are challenges in this area, but we are very aware that we need to make sure we continue to work hand in glove between the Building Safety Programme and those of us who are looking at MMC, to make sure those things are considered and addressed as we move forward.

Q288 Mr Prisk: Building regulations will cover the nature of the materials, for example, as they emerge, but the challenge of offsite then onsite and the assembly means that, presumably, the MMC scheme, in terms of providing warranties and so on, will address who is responsible for what and clarity about that.

Isobel Stephen: Yes.

Kit Malthouse: Yes, that is right. One of the revisions we are proposing to put through as part of the Hackitt review is the notion that you should be able to pin responsibility for safety on a particular individual within an organisation. If you are an organisation manufacturing a home, you need to have an audit trail as to how and why you have assessed, because the primary responsibility for safety is with the developers. It is for them to make sure they are putting up safe buildings; to make sure they are tested, assessed and designed; to make sure they are using the right materials, the right formulation, all that stuff, within the building regulation system, which shows them the minimum standard that they have to reach. That is then inspected by somebody who is reassuringly independent, notwithstanding a commercial relationship, to make sure the assurance is there. Then the system should produce a product that is safe.

There are some areas, though, where we may have to have a look in building regulation. One of them, for example, that is not necessarily looked at that closely is cabling. Quite a lot of these houses rely on cabling being installed and then connected. What are the fire regulations about cabling, particularly if you have it in trunking and it is all centrally put together? We will be having a look at that as part of our building regulation work. But in the end, if Berkeley Homes is producing a product, it is for Berkeley Homes to decide and prove that it is safe, and to have an audit trail to show that it is safe.

Q289 Mr Prisk: Thank you for that; that is helpful. There is one other aspect to this nature of assurance, in its wider sense, which is more to do with the Construction Leadership Council's role, which may be more of a BEIS question. Alongside robust and clear regulations, it is also important that consumers have some means of judging the nature of what they are



acquiring. The leadership council is developing a customer ratings system in its approach. How is that progressing? It seems to be a natural fit, in my mind, in terms of having the whole development of MMC properly open and giving the public assurance. What progress has been made in terms of the consumer rating tool that the leadership council is developing?

Fergus Harradence: The Innovation in Buildings group published what it called the smart construction dashboard. The idea is to capture some of the key metrics about offsite construction, which are both in relation to greater economic efficiency—man hours worked onsite, cost per metre of delivering homes with this mechanism—and looking at other benefits, particularly things like the energy efficiency and heat efficiency of the finished product. This is something of a work in progress at the moment. They are developing it all the time and, in particular, they are looking at what the baseline indicator should be so people have something they can assess their model house against. The aim is that, ultimately, you will have a tool that enables developers or people who are purchasing homes off them to have an idea what it is they are buying and how it will perform when they start living in it.

Q290 **Mr Prisk:** Will it be for developers as well as consumers?

Fergus Harradence: Some of the metrics they are capturing around productivity are more likely to be of interest to developers than to the individual consumer, but some of the other metrics around things like energy efficiency are clearly something that the average consumer would take an interest in.

Q291 **Mr Prisk:** Yes. How would it work? I do not want to delay the Committee too long, but how would it work, from a public point of view? Is there some information on that yet?

Fergus Harradence: There is some information published on the Construction Leadership Council website. The ideal state that we would get to is that you have individual developers publishing this information, a bit like organisations have to for things like energy performance certificates, in relation to the homes they are building. This will also, potentially, be linked to existing standards that are in place, things like the BOPAS standard, which looks at what the likely lifetime of the building is going to be and how long it is guaranteed for. In the case of BOPAS, I think it is 50 or 60 years.

Isobel Stephen: It is 60 years.

Fergus Harradence: The aim would be to give the consumer who is buying the house, the mortgager who sits behind them and the insurer who will insure the home's contents confidence that they are buying a high-quality product that will have a degree of durability and longevity.

Kit Malthouse: In the end, you might get to a situation where your house is a list, so I have a Sandringham sitting room, I have an Albert



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Roux kitchen, I have a Balmoral bog. Do you know what I mean? They all come from necessarily different pod manufacturers and it was all assembled by whoever, Bovis Homes. Those different manufacturers will all come with a different whatever rating, star rating. We are in the world of reviews now. I am fed up with being asked to review things. We will all get reviews; well, we get reviewed every five years. Star ratings will enable a consumer to feel towards something they can understand about what they are buying. In the way that you have *What Car?* reviewing the various different car models, the same should be true of MMC homes.

Mr Prisk: We have not quite got to the stage where we invite the public to do star ratings of witnesses at inquiries or, indeed, members' questions, and hopefully we will not get to that point.

Q292 **Chair:** Minister, you are saying to us that these are going to be produced in a systematic way, these modern homes with modern methods of construction products. Therefore, it removes some of the element of individual mistake, like the roofs not being properly tied in. On the other hand, does it not also allow the possibility of even bigger failure? Systematic failures tend to be bigger than individual failures.

Kit Malthouse: There is that possibility, yes.

Q293 **Chair:** You cannot recall a house as easily as you can recall a car, can you?

Kit Malthouse: That is true. One is slightly less technically complicated and rectifiable, true, but in the end this is why we have to get building regulation and inspection right. We have seen the problem with construction systems in the past: large panel concrete, LPC, buildings were put up across the country and, suddenly, everybody realised there was a fairly major structural problem with building a house of cards out of concrete that needed to be corrected. There are always these dangers but, if we get the formulation right, the building regulation right, the inspection regime right, and we get the responsibility for safety correct so that there is this sense within an organisation that you cannot fire and forget—safety is pinned on you and you reassure yourself that your engineering is right, your product testing is right and all the rest of it—we should have a system that would avoid as many of those as possible.

Chair: We will follow up on that in a bit more detail.

Q294 **Teresa Pearce:** Many of the written submissions that we received suggested a digital database would be useful to track the construction, performance and modifications to buildings. Access would be beneficial to stakeholders, such as the fire brigade, homeowners, mortgage lenders, insurers. Do you agree that that would be beneficial? If so, what do you think it would look like and who would manage such a database?

Kit Malthouse: That is a good question. In complex buildings, obviously it is important to know and, to a certain extent, the fire service should know what it is dealing with. One of the recommendations of the Hackitt report was that we had to think carefully about the production and



maintenance, and the information that surrounds complicated buildings. If you are dealing with a three-bedroom home, that requirement becomes less than if you are dealing with a 30-storey tower. In terms of the retention of that information, Isobel, what is the plan on that?

Isobel Stephen: We are quite a long way off that. This is why I was saying earlier that the definitions framework is a really helpful step, although it sounds quite straightforward, towards having better data and better information, because it gives us a framework to say, "We know that this many homes have been constructed under the 3D model and this many homes have been constructed under the 2D model". At the moment, we have a rough estimate from NHBC, from 2015, that about 10% of the homes built in 2015 were constructed through modern methods of construction. By simple arithmetic, you might assume that about 22,000 homes were constructed last year through MMC, but our data is not very good at the moment. The definitions framework is a good starting point to then be able to collect some of that data. We will also, as the Minister was saying earlier, be collecting much more granular data about the homes that Homes England is supporting through our major programmes, because there is a KPI within that.

Kit Malthouse: In the end, the way the system should work, or the way the system will work in the future, coming out of Hackitt—and we keep talking about this golden thread—is that, fundamentally, there is an auditable database held by the producer of the building where they can prove that they have created a safe building that might provide that kind of information. As for whether there should be a central database into which a fire crew on its way to a fire can dial to say, "We are heading for this building; please throw up the blueprints and all the rest of it, so we know what we are dealing with", we are a step away from that. But you could imagine that, if there are standardised products produced, when they are on their way to a certain address, a fire crew can tap into the iPad, "We are going to 7 Acacia Avenue and it is a Berkeley Homes Balmoral MK III; these are the issues that we have had with this in the past" or, "This is the layout and this is what we need to know".

That would be a great place to get to, but we are not going to get there straight away. What we do want to get to is a situation where everybody who is putting up a building has that data somewhere that is auditable and inspectable.

Q295 **Teresa Pearce:** The Association of British Insurers, the ABI, seems very keen on this and told us that it is in discussion with the Ministry, but it is very slow. Is what you are saying that that is an ideal destination but we are long way off and that is why it is slow, or is it that there is no appetite for this?

Kit Malthouse: No, there is an appetite. For example, in advance of the Hackitt changes and the legislation going through, we have an early adopters group, which has been taken up with alacrity by its members, who are looking at what they can do to help us create the standard



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systems to store this kind of data. They are going to front run the regulation that is going to come in within their own organisation, so we can start to see how it is going to work and, fundamentally, change the culture. In the end, we can change the rules as much as we like, but unless there is a culture change it will not be as effective as it should be. There is an early adopters group that is doing it, so, yes, we are making some progress, but I was not aware that the ABI thought it was slow. I am happy to talk to the ABI about what we can do to speed up.

Fergus Harradence: On a related issue, we have been doing an enormous amount of work across Government over the last year or so on digital information about the built environment, how that should be gathered, stored and on what basis it should be made available to people.

Q296 **Teresa Pearce:** Who would own that? Would the Government own it?

Fergus Harradence: It flows from a report done by the National Infrastructure Commission called *Data for the Public Good*, but the organisation taking it forward is called the Digital Framework Task Group, which is linked to the Centre for Digital Built Britain that we are funding as part of the Transforming Construction programme. The basic idea is that we are using this as a forum to debate some of these issues, like the trade-off between access to data, which is obviously beneficial, and the fact that, in certain circumstances, you need to secure that data and have bits of information that are hidden from public view because they could be used by people with malign intent.

It published a document last year called *The Gemini Principles* on the information management framework, which sets out the broad policy approach. We are now trying to work out how we apply that to various different types of built asset, so individual buildings, residential, non-residential, but also infrastructure, so utilities networks, road and rail, things like that. It is very much a live area of policy development.

Kit Malthouse: It is often hard for Government to know where technology might lead you and, given the amount of data that is available, not just MMC but generally, where we might go. You could see a point in the future where the Land Registry would not just hold the little red-lined plan of the land you own, but might also hold a 3D viewable picture of the property itself, as well as whether it is a Sandringham sitting room, a Balmoral bog and all the rest of it. It might be able to give you the full menu of what is on the land rather than just the red line of the land. This is all technology that is moving incredibly quickly and it would be difficult for us, as a Government, to predict where it is going and decide what people want.

We can, though, start to throw open the datasets we have so the private sector can start to make the associations that it needs to. For example, if you go on to certain parts of Google Earth, it will give you a 3D picture of a property; you can fly in and have a look at it from outside. That is not currently connected with the Land Registry data. Perhaps we could throw



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open Land Registry data. We have a project on at the moment, Digital Land, where we are trying to get that data, which has been built up over decades, centuries, and is in all sorts of forms, into some kind of shape that we might be able to open it up to innovation. You can start to see these connections being made.

Then you have the Land Registry data, which registers the ownership; you have some visual data, which registers the house. You might be able to link that with some construction data and, by the way, Rightmove will tell you how much it is worth. Those links can be made to give a full 3D picture of a property. That might be some way away, but the bits of data are fundamentally out there; we just have to find a way to connect them.

Q297 Mary Robinson: Following on from Mark's questioning and the discussion around regulations, are the current building regulations suitable for homes built using MMC? Do they ensure that all the homes built using MMC are safe?

Kit Malthouse: As you know, we are going through a big revision of building regulations. We will be looking at *Approved Document B*, which is the safety document, and the whole of the building regulation system will be reviewed in the light of Hackitt. In the end, notwithstanding the building regulation system, which sets a minimum standard, it is for those who are building buildings to make sure they are building safe buildings. While building regulations set out a framework and the inspection regime provides some assurance, the primary responsibility for producing those buildings, testing them, making sure they are safe, being reassured, is with the manufacturer and the developer, notwithstanding the fact that we will be making revisions to building regulations in the future. The answer should be yes, but that relies on that sense of responsibility from the industry.

Q298 Mary Robinson: Therein appears to lie the problem, because offsite housebuilders have told us that the recent ban on combustible materials in the external walls of buildings over 18 metres has forced them to change their plans for high-rise modular builds. They say the ban prevents the use of materials such as cross-laminated timber. On the other hand, the Association of British Insurers thinks that the ban should be extended. Do the regulations strike the right balance to ensure safety without stifling MMC?

Kit Malthouse: That will be part of the review that we look at. The ban of combustible materials over 18 metres is the right one and, if that means industry is having to change its technology, so be it. Seventy-two people died in Grenfell Tower and that means there will have to be changes. It is our solemn undertaking in their memory and to the community around Grenfell that that change needs to be brought in.

At the same time, while that is appropriate for buildings over 18 metres, we do not want to stifle innovation elsewhere. If something is provably safe and testably safe, and, having left the test room, is then



manufactured in a way that means it is commensurate with the test and can be fitted safely, the building regulation system should be able to allow that, subject to disinterested inspection that is not conflicted. That is where we are going to try to get with the review of *Approved Document B*. But I am afraid the flammability of materials over 18 metres is not acceptable any more.

Q299 **Mary Robinson:** When you look at the approved documents, will there be a set of approved documents just for MMC?

Kit Malthouse: No, I do not think so. The building regulations, as I said before, set a framework. The idea of that framework is that they are a consistent minimum standard and, whether your thing is built from MMC offsite manufacture or brick, slate and stone, people have a natural assumption that the standards of performance will be consistent. Within that framework you can drive a Ford Escort, which will take you from nought to 60 in 15 seconds, or a Maserati, which will do it in two, but they both basically do the same thing, which is get you from A to B safely. Building regulations are designed to produce that.

Isobel Stephen: We are, however, specifically asking for evidence about MMC in our review and development of those regulations.

Kit Malthouse: It has to accommodate it.

Isobel Stephen: I totally agree with what the Minister has said, that it is one set of regulations. But, for example, on the technical review of fire safety guidance call for evidence, we have specifically asked for evidence on emerging technologies, so that that can be factored into the new system.

Q300 **Mary Robinson:** You mentioned earlier that MMC can have extremely good environmental credentials. The built environment accounts for 30% of the UK's carbon emissions. Should building regulations stipulate tougher energy performance targets for new homes?

Kit Malthouse: You are asking me to make a decision that I am not totally empowered to do, but it strikes me that there is a strong case for us to look very carefully at improving environmental standards, not just in terms of the tightness of the construction, the heat loss, but also the technologies that we stimulate and use. You will have seen, in the spring statement, the Chancellor announcing that we want, by 2025, all new homes not to have a combustion boiler. The idea is that there are better ways to heat your home than burning things, whether it is gas, oil or otherwise.

We aspire to greater environmental standards and I would like to see them. I know, to a certain extent, a lot of developers do. I have been talking about it a lot today, but it is in my mind. At Kidbrooke, Berkeley Homes is pretty close to getting a passive house out there without any stimulation from us. They need to do a bit of triple glazing and they are using solar panels very innovatively. The house we saw is quite clever.



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They have a roof terrace on the house and, on the balcony, I thought they were just frosted glass panels, but they were solar panels. They had used them as part of the fabric, as well as generating power.

Interestingly, what I suspect is driving this, as much as Government aspiration, and we have enormous aspirations from an environmental point of view, is consumer choice. Consumers are much more sensitised now to their energy consumption and their responsibility to the environment, and are likely to start making choices that will drive developers to build better and better environmental standards into their products.

Q301 **Mary Robinson:** If passive house standards are more achievable through MMC, should we be encouraging more MMC?

Kit Malthouse: Yes, absolutely. If we get better standards with MMC, we absolutely should. This is an imperative that we have, morally as well as practically, to do our bit for climate change and, as you say, 30% of emissions come from the home.

We have an existing stock of 27 million and the higher environmental standards on new build will make an impact, but a relatively marginal impact. There is much more we can and should do about existing homes to get them up to standard and use new build to stimulate new technology. Here is an example: we have a gas boiler at home and, when the Chancellor announced about heat pumps, I thought, "Maybe I should get a heat pump for my house". I have been looking and researching as to whether I could replace my gas boiler with a heat pump. As the technologies get adopted, they will get cheaper and cheaper and cheaper, and then they will become the technology of choice. That is what will make the difference and that is why we can use new build as leverage for the 27 million existing homes.

Q302 **Mary Robinson:** Could we use regulation as leverage as well?

Kit Malthouse: We certainly could, yes. We will be reviewing regulations on environmental standards, yes. It would be lovely to get them to a much higher standard; it would, but I am in a Government of collective decision-makers.

Q303 **Chair:** But you will encourage the rest of them in the right direction, Minister; that is what you are saying to us.

Kit Malthouse: Certainly. If you will forgive the pun, the wind is blowing in the right direction. As you will know, Mr Chairman, the Government have enormous ambitions on this score and we know that the country is growing more and more sensitive to these issues, so I would not be surprised if there was some political co-operation on that, yes.

Q304 **Helen Hayes:** All the evidence is that the construction industry and the development industry are very, very responsive to changes in regulations. They do the R&D, they invest in the products they need to



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meet new regulations and then they roll them out and deliver them. We had passive houses being delivered as pilots in this country 10 or 15 years ago. Why are you so reluctant to set rigorous and stretching new standards for carbon reduction within the sector, given the progress that we need to make?

Kit Malthouse: I am not reluctant at all, absolutely not. That is why we are reviewing the building regulations. But what I cannot do, as you will understand, is make decisions in advance of consultation. We are not really allowed to do that. But we have enormous ambition, from an environmental point of view, not just from a carbon reduction point of view, but also, frankly, from a biodiversity point of view. One of the nice things about Kidbrooke, and I am sure you know it reasonably well, is that that entire development has been built with the natural world in mind. I was there with the man behind the hedgehog petition—520,000 people encouraging us to put hedgehog highways into all new builds—to look at a development that has been specifically designed with wetlands, parkland and wildness in it to encourage biodiversity in that part of Greenwich. It is great to see and we would like to see a lot more of that as well.

The point I was, perhaps, rather ponderously trying to make was that, while we can do this for new build, it will, in the end, make a relatively marginal difference given the number that we build every year. It does not mean it is not without value; it is very important, but the value it brings is that it stimulates activity in the existing build. One of the things I said to my friend who looks after the welfare of hedgehogs is, "Great, we can do this with new build, but if 27 million people knocked a hole in their fence it would make a much bigger difference to the hedgehog population".

Q305 **Helen Hayes:** But we have been in a deregulatory environment with things like zero-carbon homes, for example. Some of that regulation we had before; it is easy and straightforward to introduce again; and it could already have been driving that change towards the existing build.

Kit Malthouse: That is true, but one of the things we have to be slightly careful of is that, if regulation runs in advance of technology, we end up in a losing situation and it has an impact on output. One of the great things that have changed over the last 10 years is that technology has developed enormously. For example, solar panels are light years, forgive the pun, away from where they were 10 years ago and are much cheaper now than they were then. Frankly, one of the benefits of us leaving the EU is that we will be able to review the current external tariffs there are on Chinese-made, incredibly cheap solar panels, which might allow them to be more widely used in a way that would fulfil your and my aspiration.

There is lots of stuff. Ground source heat pumps were in their infancy 10 years ago. The idea that you could have a domestic methane reformer that would produce hydrogen and carbon monoxide, which you could then feed into a fuel cell to power your home, is a technology that was in its



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infancy and is now becoming more and more developed. As technology comes on, we want to create a framework where there is an easy adoption of this stuff on the basis that it is cheaper, better and we are not burning stuff. The Chancellor took this decision on boilers because the technology is now there so, where it is available, we should use it and we should use our muscle to stimulate it as well.

Q306 Chair: We need to move on. On to finance, briefly but importantly, MMC construction often tends to be front-loaded in terms of cost, so it is sometimes a challenge for smaller SME builders. What can the Government do to help that particular challenge that many small firms will face?

Kit Malthouse: We have quite a lot of money now targeted at assisting small builders in various funds, through Homes England and, indeed, through the British Business Bank and with partners. We have a funding partnership with Barclays and with Lloyds, but there is always more that we can do. As I said earlier, I was at a round table on Thursday with the Small Business Minister, a group of small developers, and a group of bankers and people from that industry, to talk about what more we can do to put the two of them together in a fruitful way. There are obviously some regulatory barriers that are not in my purview; the PRA and Basel II put certain regulations on bankers about what they can and cannot finance and the capital requirements behind each type of finance, which might create some restriction, particularly for smaller businesses. In the end, we are trying to insert our own funding in such a way that it de-risks it for the banks and it provides more capacity for them to lend to smaller builders, and so is the British Business Bank.

Q307 Chair: Is that particular scheme, as well as the Land Assembly Fund and Small Sites Fund, being targeted at MMC in any way? Are you trying to make sure that a certain percentage of those funds are used to support MMC with small builders?

Kit Malthouse: I would not say they are necessarily targeted. We are encouraging MMC.

Q308 Chair: Are you monitoring what the effects are?

Kit Malthouse: Yes. If you put in a bid that involves MMC, we are very keen. We are doing reasonably small grants. We have just written a cheque for £10.6 million for 600 homes to Welwyn Hatfield in three sites in town centres. MMC is great for a town centre because you are in and out much more quickly than standard build. It comes with favour attached to it, if you see what I mean, when you are bidding.

Q309 Chair: Is it back to the point again of not knowing, at this stage, necessarily what schemes are MMC and what are not, and the percentage? Is this something you need to look at?

Isobel Stephen: That is right. We know that £207 million of the Home Building Fund has been spent on projects to support MMC. As you say,



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correctly, Mr Chairman, we are monitoring the output. MMC is one of the four things specifically that the Home Building Fund is there to support, but there are other things as well, through, as the Minister said, the partnerships with Lloyds and Barclays. We are very excited about the new British Business Bank ENABLE Guarantee.

Chair: Based in Sheffield.

Isobel Stephen: Yes. That is going to really help with SMEs as well.

Kit Malthouse: There still remain issues, though. While ENABLE Guarantee is great and it increases capacity, there are valuation issues that small builders face. There are loan to cost barriers generally built in, which, while they will work on the standing level of activity, do not allow them to stretch the balance sheet to move from two sites to three or three to five. These are some of the things that we are trying to puzzle out with the industry.

Q310 **Chair:** Coming on to BEIS and the Transforming Construction funding, targeting it at MMC, helping small businesses, is this happening?

Fergus Harradence: Yes, certainly. If I give some examples from the allocation of funding to R&D projects, across the portfolio of 24 projects we have about 35 small firms involved, developing technologies of one sort or another. Other small businesses are able to gain access to and use the facilities that are available in the technology and innovation centres that we have been supporting. It is certainly what we want to do.

Q311 **Chair:** In terms of the amount of money around in Departments, there is nothing in the Help to Buy scheme to try to encourage MMC specifically. Is that a missed opportunity?

Kit Malthouse: That is a good challenge, Mr Chairman. I will have to go away and have a look at that. We are trying to use Help to Buy to encourage behaviour where quality is concerned. To be honest with you, Help to Buy follows the buyer. To say to the buyer, "You can buy an MMC home, but you cannot buy a standard home" or, "We will do you more generous terms" might be a little complicated for a book that size. Let us see how we get on with the very generous other funding that we have focused on MMC.

Q312 **Chair:** Yes. You are saying to people, "You can buy a freehold, but you cannot buy a leasehold home in future", so you are putting conditions on it.

Kit Malthouse: No. We are saying to developers that it is available for one but not for the other, to encourage them to change their practice.

Q313 **Chair:** Change practice to MMC then.

Kit Malthouse: Yes.

Chair: I will leave the thought with you, Minister.



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Q314 Helen Hayes: I want to turn briefly to the issue of planning and its role in relation to MMC. We have received contradictory evidence from different stakeholders in relation to the role of planning. Some submissions have recommended that local plans should be proactive in being positive in encouraging MMC, while others have argued quite vociferously that construction method is simply not a planning matter and there is no role in local plans for that. What role should local plans play in promoting and setting the policy framework for MMC?

Kit Malthouse: My general view is that the construction method is not a matter for planners. Planning is a complex enough issue at the moment. We want a planning system that is smooth, speedy and efficient. Local authorities having to deal with a variety of different construction methods that are being proposed on a particular development does not seem, to me, to be commensurate with that idea of efficiency. In the end, I think planning authorities should have a design code, it should be as firm as it can be and they should stick to it. But, in the end, it is for the developer to do the "how"; it is for the local authority to do the "what" in planning, and for building regulation to decide whether it safe, sturdy, saleable and all the rest of it.

Isobel Stephen: Paragraph 131 of the NPPF strikes the balance quite nicely. It says, "In determining applications, great weight should be given to outstanding or innovative designs which promote high levels of sustainability, or help raise the standard of design more generally in an area". Exactly as the Minister says, it sets out what your ambition should be rather than determining how you achieve that ambition.

Kit Malthouse: On your other issue, in the end, building regulations set a minimum standard. Local authorities can decide to set a higher standard through their local regulations, if they wish.

Isobel Stephen: Some local authorities are doing that and are actively promoting modern methods of construction. The West Midlands Combined Authority would be an example of that and Manchester City Council has been very proactive in what it has said about MMC.

Q315 Helen Hayes: On the question of incentives for MMC within the system, Homes England is including a requirement for MMC use in some of its leases to accelerate the delivery of new homes. Should it be doing that and will that potentially have some benefits in terms of the issue we were discussing earlier around security and certainty for supply chains?

Kit Malthouse: Yes. We want Homes England to use its good offices to stimulate the industry. We have given it money, capacity and capability and it has a KPI that measures its stimulation of that industry, so anything that would help that is going to be useful, yes.

Q316 Helen Hayes: But you do not regard Help to Buy in the same vein, as a stimulant.



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Kit Malthouse: As I said to the Chairman, I am happy to go and look at what it can be. Help to Buy is a way of manipulating behaviour by developers, so we can have a look at that.

Isobel Stephen: Can I come in on Help to Buy? When the current Help to Buy scheme was introduced, in 2013, it was deliberately set up in a very straightforward way that would both help people to get into home ownership and, at the same time, stimulate demand for new build. There are legal restrictions on the extent to which we can change the agreements that we have with developers based on that 2013 scheme.

As you will know, post-2021, we will be modifying the scheme; it will only be available to first-time buyers and there will be regional property price caps, which do not exist at the moment. At that point, we have an opportunity to look again at the objectives of the scheme and potentially build some of this in. There will be trade-offs there and some of the issues that we talked about earlier, which the Minister referred to, about building safety and quality will probably be in there as well, so we will have to look at that as part of the design of that new scheme.

Q317 **Helen Hayes:** Finally, we have received evidence from some that it would be a good idea to have a standardised set of designs, which are approved and tested, and can then be used anywhere in the country. What do you think of that idea?

Kit Malthouse: A standard set of designs of what?

Helen Hayes: MMC products, essentially.

Kit Malthouse: Through Mark Farmer's work, we are trying to get to a set of standards. That is like saying we should have a standard car. It is a little bit Trabant and perhaps does not reflect the natural variation that we would like to see across the country. We do want to have a standard framework into which products can slot and, therefore, acquire the assurance that they need to participate in the market. Having a standard product has a slightly Soviet connotation of tractor production in wherever.

Chair: Thank you very much, Minister and officials, for coming to give evidence to the Committee today. That is appreciated.

Kit Malthouse: Thank you.