

Developing a strategic public-sector approach to accelerate investment in off-site manufactured homes

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Introduction

The Housing White Paper *Fixing our Broken Housing Market* (DCLG, 2017) makes clear that to meet housing need and demand, the UK needs to build between 225,000 to 275,000 new homes per year. The Government's recent Social Housing Green Paper goes further, reaffirming an ambition to build 300,000 homes per year (MHCLG, 2018). However, since the 1970s, there have been on average 160,000 homes built each annum; a shortfall of up to 140,000 homes each year. The consequences today of this historic under-provision is a mismatch so large between housing demand and supply that the average price for a new home in England is 9.7 times median gross earnings (ONS, 2018). Whilst Government, social commentators and the media at large offer many potential solutions to the housing crisis, this paper will centre around the potential for local authorities to play a more dynamic role in the housebuilding sector and specifically, the potential for local authorities to drive the use of 'modern methods of construction' (MMC) also known as off-site manufactured housing or off-site housing (OSH).

Depending on definition and process, forms of OSH have been employed in the UK for 100 years or more. Yet in 2016, only 7% of construction GDP arose from the OSM market (KPMG, 2016). So, what is holding back the growth of an industry which many including Sir John Egan have held up as the future of the UK construction industry (Egan, 1998)? The answer seems to lie in an analogy with the chicken and the egg; costs are relatively high, which in part at least is due to insufficient supply in terms of manufacturing capacity. Lack of capacity relates to lack of confidence in long term demand for products, to justify the huge up-front capital investment involved in building factories capable of producing these products. Coming full circle, higher prices and lingering questions about quality, make it difficult to build a sustainable pipeline of demand for off-site homes.

This paper provides a summary of a research dissertation undertaken as part of an MSc in Quantity Surveying at University of Salford, in collaboration with the Government's One Public Estate (OPE) Programme. As Regional Programme Manager for OPE, the original aim was to include all public-sector partners, as the OPE programme also includes government departments, health and blue light agencies. I have taken the decision to focus on the local authority sector however, both to narrow the remit of the research and because it is my belief that local authorities are best placed to influence this agenda; uniquely able to harness land ownership, housing and planning powers and responsibilities, local economic development and responsibility for 'place-shaping'. Even at times of severe austerity and pressures on local authority revenue funding, progressive local authorities are still finding the capacity to forge relationships with other delivery agencies and landowners and can access a variety of capital funding and finance streams (including the Public Works Loans Board) if a compelling business case can be made.

There are of course many other potential public-sector clients to the OSM housing industry, whose business and interest could be 'aggregated'. Homes England and social housing providers for example are extremely well placed to aggregate demand and provide positive signals to this industry.

Research

A mixed methods research methodology was adopted. Document analysis of quantitative research findings into barriers around OSM housing helped to inform the focus of the semi-structured interview survey and the structured questions themselves.

12 interviewees were selected with the aim of obtaining a mix of strategic and operational senior local authority officers, and Councillors, at the same time as getting a mix of representatives from unitary, lower tier and upper tier local authorities, of different levels of seniority, with different responsibilities and organisation types which fitted the profile required. Two Cabinet Members were suggested, and both were happy to participate in the research project, resulting in 12 interviewees from 10 different organisations.

Table 1: Interview Sample Stratification

Interviewee number	Organisation number	Face to Face (F) or Phone (P) interview	Individual Role				Responsibility for:						Type of Local Authority				
			Councillor	Chief Executive	Deputy Chief Executive	Assistant Director/ Head of Service	Strategic	Housing	Property	Economic Development	Strategic Planning	Procurement of capital works	Combined Authority	District Council	County Council	Unitary Authority/ Metropolitan Borough	
1	1	P				•		•	•						•		
2	2	P				•		•	•						•		
3	2	F	•				•	•	•						•		
4	3	F		•			•	•	•	•	•	•					•
5	4	P				•	•	•						•			
6	5	P			•		•	•	•	•	•	•			•		
7	6	P				•	•	•	•	•	•	•		•			
8	7	P				•	•		•							•	
9	8	F	•				•	•									•
10	8	F				•	•	•									•
11	9	P		•			•	•	•	•	•	•			•		
12	10	P		•			•	•	•	•	•	•					•

The 16 interview questions were framed around four overlapping themes; understanding of ‘the housing crisis’; appetite towards local authority housebuilding; perceptions of the OSH sector and opportunities for the One Public Estate Programme to support engagement and delivery around OSH.

Findings and analysis

From research interviews and document analysis, the overarching barriers from a local authority perspective being around issues of cost, planning and design, procurement and quality.

Cost

The post war system-built housing boom was largely driven by Government subsidies, and when key subsidies were removed in 1953, many manufacturers found the house-building industry to be less profitable than others and targeted new markets, allowing the traditional housing sector to regain market share.

Commercial sensitivity and huge variation in systems and specification makes it notoriously difficult to get an accurate or comparable picture of costs in relation to OSH. A recent article in the FT for example found two storey modular housing units costing between £1000 and £1,388 per m² (Somerset Webb, 2018). The article is not clear however if this based on a single unit or significant volume. A recent interrogation of the Building Cost Information Service would suggest that these figures are in line with ‘upper quartile’ prices for mixed ‘estate’ residential completions, which are assumed to be 90+% traditional build. The same BCIS report for ‘estate’ housing shows the mean for all homes to be £1,210

per m², median of £1,175 per m² and median for two storey homes £1,149 per m² (BCIS, 2018) If the FT costs quoted were for single buildings, then the costs would be competitive with traditionally built homes. However, the conclusion must be that scale and standardisation are required in order to reduce OSH costs over time.

Local Authorities as housebuilders

Perhaps an unanticipated finding of the research is the extent to which local authorities in England are returning to house building. Whilst clearly not in any way a representative sample, it is notable that all 10 organisations involved in the study were either currently developing housing once again or had firm plans to do so.. Those Councils that have retained HRAs are exploiting the recent access to SOAHG and are maximising headroom within their HRAs to build new Council Houses. All were keen for the Government to loosen borrowing rules for local authority housebuilding. More remarkably, all were also seriously considering setting up wholly or part owned LHCs, including County Councils that have not previously had housing responsibilities. In the light of the housing crisis, Local Authorities understand that the combination of their land holdings (and those of their strategic partners) and their access to very competitive finance via the PWLB, provides a real opportunity for them to positively impact their local housing market whilst generating a commercial return on investment, to support essential core services.

Particularly in areas of low values or where viability issues are holding back the private sector, local authorities are stepping in to once more become dominant housebuilders in their localities. Newcastle City Council for example, developed 46% of homes in the City in 2013/14. (Brenton, 2014)

Land, valuation and disposal

Smaller housebuilders struggle to access viable housing sites and when they do, tend not to have the capital and cashflow to 'landbank' sites as they will need to recoup some or all their investment within the short to medium term. Larger housebuilders work on a different model and interviewees recognised that they can afford to pay inflated 'hope value' prices to ensure they are highest bidders, but then manage the supply of homes or the 'build out' rate, so that demand always outstrips supply. Sale prices are kept artificially high and circa 15 to 20% profits can be made (as is expected from shareholders) despite the high price initially paid for the land.

The consensus appeared to be that greater use of public land sold for a price which would allow more affordable market housing, would be a short term but not a long-term solution (as eventually public land will run out). There are challenges even with this short-term solution however. Foremost are the Government's National Property Controls and the Local Government Act 1972: General Disposal Consent 2003 which via 'Best Consideration' does allow local authorities to dispose of sites below market value, but only with extensive evidence and justification. In summary, it is not straightforward to dispose even public sector land at a price which then affords housing to be built for rent or sale at a price which is considered affordable to local average salaries.

There was broad consensus that permanent solutions to the land/ planning / 'hope value' / land banking conundrum involved public sector acquisition (probably involving compulsory purchase) of potential strategic housing sites at a 'fair value', somewhere between existing use value and the landowners 'hope value'.

Sustainability

Issues of climate change, sustainability and carbon reduction have taken a backseat in political discourse in recent years. Brexit, economic uncertainty and pressures caused by austerity have dominated political debate. What became clear from this research however, is that local authority leaders are continuously looking to push the sustainability agenda, whether via encouraging energy efficiency to protect low income households from the impact of rising energy bills, driving the growth of electric vehicle charging points to reduce air pollution from vehicles or encouraging the low carbon economy. They are prepared to borrow to help to drive these programmes but are hampered by a lack of revenue funding, and challenges in creating a viable business case to do so. OSH would fall into this category. Most respondents recognised that factory produced, precision made homes are likely to be much closer to the 'as designed' levels of energy efficiency or predicted levels of construction waste, and therefore a client wishing to increase sustainability could have more confidence in the finished product. Given that most of the benefits of an energy efficient home go the resident rather than a developer or landlord, it is difficult to turn this into a viable business case, using conventional financial valuation techniques.

Procurement

The main argument here is that local authorities may not be minded to and/or may not have the knowledge or skills to procure developer partners or development contractors in such a way as to provide a level playing field for both traditional and modern methods of construction. This is seen as a double-edged sword; unless procurement teams are cognisant of the opportunities around OSH then their 'business as usual' routes for procuring capital projects, are likely to be biased towards traditional construction models, due to the separation of design and construction. Support in terms of pre-procurement advice and better sharing of experiences and good practice between public sector services would help to mitigate this barrier.

Developing a strategic Public Sector Approach to OSH

Table 2 provides an overview of a potential strategic public sector approach to accelerate investment in OSH. This should be considered as a 'straw man', to encourage discussion, debate and refinement. The principles are that this is an iterative, cyclical process whereby internal engagement between public sector partners and external engagement through soft market testing and procurement, facilitates manageable 'chunks' of delivery; significant enough to be meaningful to the market, but de-risked for public sector clients so that no individual organisation is exposed to excessive risk. Clear and achievable deliverables must be built into any subsequent programme and the right project management systems and governance must be in place to understand and manage delivery risks and optimise outcomes

Table 2: Suggested Framework for strategic public sector approach for OSH

Theme	Action	Partners	Tools/ Funding Stream	outcomes
Research	Research Barriers to Local Authority and public sector take up	OPE Liverpool University, University of Salford?	OPE funding	Informs good practice and knowledge transfer sessions
Research	Monitoring and evaluation of building Performance	Existing Academic research and Industry data sources.	Sustainability Performance Criteria for Modular Buildings e.g. (Kamali et al, 2018)	Reassurance / Clarity around quality, durability, in-use practicality
Good Practice and Knowledge transfer	OSH Factory Visits	Off Site Housing Manufacturers / Homes England / Buildoffsites/ OPE Partnerships		Reassurance of public sector clients in relation to suitability and quality of products. Update risk register.
Good Practice and Knowledge transfer	Visits to completed OSH developments	Off Site Housing Manufacturers / Homes England / Buildoffsites/ OPE Partnerships		Reassurance around design forms and build quality
Good Practice and Knowledge transfer	Roundtable events	OPE Partnerships/ MHCLG/ Homes England/ OSH industry reps/ BOPAS		Clarification of mortgageability of products. Opportunity to shape 'vision' of future programmes.
Business case and pipeline development	Due Diligence and soft market testing	LGA /OPE 'Experts'. Private Consultants	SURI Framework (Bischarde 2015) Sustainable Performance Criteria (Kamali et al, 2018) OPE funding? Risk Register	Clarification of costs and Commercial offer. Clarification of viable pilot scale. Client understanding of tensions between standardisation and customisation
Business case and pipeline development	Collaboration :Identify potential partners and aggregate packages of sites	OPE Partnerships (local authorities, health agencies, housing associations, government departments)/ Regional Clusters	ePIMs / OPE Funding	Create opportunity Pipeline Longlist. Clarification of risks and development of risk register
Business case and pipeline development	Identify delivery model	LGA /OPE 'Experts'. Private Consultants	HRA; LHC, JV; RP, Land disposal	Preferred delivery model(s) agreed.
Business case and pipeline development	Finalise business case	LGA /OPE 'Experts'. Private Consultants	HM Treasury Green Book / MHCLG Appraisal Guide / Social, Economic & Environmental CBA; WLC, Five Case model.	Approved business case / Clarification of funding and investment streams
Aggregation and Procurement	Explore and determine procurement routes	LGA /OPE 'Experts'. Private Consultants /Existing Delivery Frameworks	OPE funds? MHCLG 'due diligence' funds. 'Capitalised' revenue costs for project delivery	Local jobs and economic benefits.
Aggregation and Procurement	Identify workpackage	LGA /OPE 'Experts'. Private Consultants /Existing Delivery Frameworks	OPE funds? MHCLG 'due diligence' funds. 'Capitalised' revenue costs for project delivery	Sites and partners selected for individual pilots
Aggregation and Procurement	Undertake Procurement	Workpackage clients / consultants	OPE funds? MHCLG 'due diligence' funds. 'Capitalised' revenue costs for project delivery	Delivery partner selected.
Delivery	Initial Pilots completed	Delivery partners/	PRINCE 2 or other Project management systems. Capital gap funding and affordable housing grants	Homes completed and inhabited. Subjects for evaluation and research. Feedback loop
Delivery	Programme adjusted and further pilots completed	Delivery partners/ Workpackage clients	PRINCE 2 or other Project management systems. Capital gap funding and affordable housing grants	Pilots expanded and further evaluation undertaken until BAU
Research	Monitoring and evaluation of OSH building Performance	New Academic/ industry research and resident feedback.	Sustainability Performance Criteria for Modular Buildings (Kamali et al, 2018)	Design enhancement. Reassurance / Clarity around quality, durability, in-use practicality

Shared research, knowledge transfer and good practice sharing with support from government agencies such as Homes England, and industry bodies such as the Construction Leadership Council, Buildoffsites, BOPAS and the Offsite Hub where necessary, will aim to provide the knowledge and confidence for individual or clusters of public sector partners to use modern methods of construction and engage the market accordingly. The One Public Estate Programme for example has been successful at 'de-risking' complicated and challenging programmes. Programmes that offer significant potential capital receipts, running cost savings or land released for housing are often put into the 'too hard' category, because collaborative projects run the risk of operating at the 'pace of the slowest', or not happening at all. However, it is collaboration where OPE can and must play the greatest role, both through partnership support and encouraging behavioural and cultural change.

Soft market testing or pre-procurement activity will be essential to ensure that appropriate packages of sites from each workstream are offered to the market at the appropriate scale and at the appropriate time. For example, anecdotally one of the largest providers of modular construction units in the UK has referred to a minimum order of 60 units as a break-even point; they would not consider a smaller order given the design cost and production line set up required. A 'pilot' or order of this size would likely be too great or too much risk for an individual local authority but would become feasible if these 60 units were aggregated across three or four sites or organisations. These could be individual small sites, or proportion of larger sites. OPE could support procurement of consultants to undertake this aggregation role.

The lack of transparency around cost echoes findings from the semi-structured interviews, so not only would 'due diligence' activity need to fully understand the 'like for like' costs between various building construction types, but there would need to be greater trust or confidentiality agreements between OPE partners, to allow better recording and sharing of OSH cost data.

Conclusion and Recommendations

The UK housing crisis has created huge distributional inequity and disparities between ownership of housing assets and wealth, and access to suitable housing; disparities that will only deepen in time. The Government recognises that these disparities can cause economic, social and political harm to the UK. The Housing White Paper identifies several potential solutions, including OSH. The findings from this research chime with that analysis; OSH has a key part to play but is not the 'Holy Grail'.

The findings from this research point to several factors which can help to address problems in both the short term and as part of a long-term solution. The first is that given wider issues with land valuation, public sector land holdings should be maximised to provide land for housing at a price and at a rate which allows a downward pressure on house prices. The Government has set short term targets for release of Government land for housing (land for 160,000 homes by 2020 with a similar target for local authority land) but this is a drop in the ocean given the size of the public estate and land holdings. Sale of land below market rates will be challenging because government departments and public sector agencies are all under pressure to maximise capital receipts. Better use of social value calculations in business cases may help to offset these challenges. Whilst Combined Authorities, City Regions and larger City Councils often attract greatest attention, most potential local authority housing sites are owned by smaller authorities or those in less urban areas. With less experience of development, and less skills and capacity to manage development, the research found that additional support was required to unlock these sites, and that the OPE programme is well placed to provide this.

Historically, local authority housebuilding has been a critical part of the mix when nearing or exceeding the target of 300,000 homes per year. Whilst respondents welcomed recent relaxations for local authorities around HRA borrowing and access to gap funding and affordable grants, Councils could they argue play a much greater role in tackling the housing crisis if allowed greater flexibility to borrow (since granted) and to retain Right to Buy receipts. As landowners of both large and small sites, as investors and as planning authorities, local authorities can influence the type, size and tenure of homes. Whether via direct development, SME housebuilders, housing associations or OSH manufacturers, this greater mix or provision can reduce the likelihood of sites being stalled or subjected to slow build out.

As both developers and landowners, these research findings tell us that local authorities clearly see OSH as part of the solution to the crisis. Working to a different operating model and margin than the large housebuilders, local authorities see only advantages in quick build out rates. This is seen as a great strength of OSH products. As too is the sustainability and energy efficiency of these new homes. Concerns about availability of materials and particularly skills in the traditional construction industry are recognised as another strength of OSH. The ability to align local colleges and training providers with OSH manufacturers and supply chains was also seen as providing added value locally.

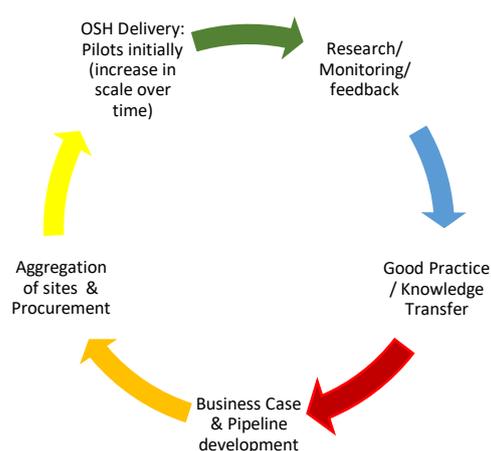
Questions remain about the quality, durability and 'investability' of these homes however, and local authorities questioned are generally not yet ready to commit to the level of investment that could provide the 'surety of demand' that the industry is calling for. More research and dissemination is required in terms of the performance of OSH over time, including maintenance and whole life costing, and support for building social, environmental and economic value into business case development. Questions about mortgageability and homebuyer's appetite for OSH still need to be addressed. In the meantime, those authorities questioned saw more opportunities in social and private rented OSH in the

short term. Design was a divisive issue here. Whilst some wanted to see replication of traditional house designs to gain acceptance, others saw the opportunity for OSH and specifically modular housing, to help to create new and innovative design forms. There was also concern that ‘importing’ OSH products from other regions could conversely lose local traditional construction jobs locally.

Recommendations

This paper builds on the views of senior local authority leaders, to develop a strategic public sector framework to drive investment in OSH. This framework, based on a continuous cycle of learning, improvement and delivery, is summarised in Figure 1. It is recommended that it is used as a ‘straw man’ to engage stakeholders including government, wider public sector and industry influencers, and is refined over time. Early delivery including pilots can be initiated in the short-term.

Figure 1: Feedback loop for strategic public sector approach for OSH



The construction industry, government, local authorities and academic institutions frequently talk of collaboration, but OSH provides an example of where this stops short of actual, meaningful partnership. Even now, when there is a renewed and heightened interest in OSH, and the opportunity that it may help to address the debilitating UK housing crisis, the danger is that individual organisations may try to ‘own the agenda’ for reasons of commercial advantage or professional pride. A danger that knowledge will not be shared, or cliques created. Real collaboration is challenging; it requires revenue support to bring partners together, and most importantly it needs leadership.

References

BCIS, 2018. *Average Price Report: Estate Housing; UK*, s.l.: s.n.

Brenton, H., 2014. How do you double housing output: calls are growing for the public sector to plug the UK's housebuilding shortfall. *Property Week*, 27 June, p. 32+.

DCLG, 2017. *Fixing our Broken Housing Market (White Paper)*, London: HMSO.

Egan, J., 1998. *Rethinking Construction: The report of the Construction Task Force (The Egan Report)*, London: Department of the Environment, Transport and the Regions.

KPMG, 2016. *Smart Construction: How offsite manufacturing can transform our Industry*, London: s.n.

MHCLG, 2018. *A new deal for social housing*, London: HMHLG.

ONS, 2018. *Housing affordability in England and Wales: 2017*, London: Office of National Statistics.

Somerset Webb, M., 2018. Housebuilding should be confined to factories: Pre-fabricating houses boosts productivity, quality and affordability. *Financial Times*, 12 April.