

Reimagine construction



How one policy could create big wins across government, industry and the UK export market.

The government is determined to cut public sector costs, to rebalance the economy, and to drive up exports. Joshua Southern, Manager at KPMG suggests how one policy could create big wins across government, industry and the UK export market

Government is determined to cut the deficit, and to create a more efficient public sector estate. But it's hard to save money when investments need to be made, and difficult to shrink landholdings without constructing new buildings. Across government, departments are investing in efficiency; refurbishing offices to support estate rationalisation projects or building new service delivery premises with lower running costs. The result is that, counter-intuitively, this government has a more ambitious property development programme than anything we've seen in years.

Elements of this construction work have their roots in civil service reform. HMRC, for example, is exiting over 150 buildings to centralise staff in 13 regional hubs, whilst the MoD is to quit many of its 1300 sites – prompting a major redevelopment programme to house its remaining workforce. Meanwhile, civil service property management reforms drive up the cost of Whitehall premises, and as a result staff are being reallocated to cheaper premises.

Service delivery and policy changes demand another tranche of building work. For example, the Ministry of Justice's ambitious plans to exit Victorian prisons, building a new generation of modern facilities; the shift of DWP staff from JobCentre Plus outlets to office-based digital and telephone roles; the energy department's interest in small modular reactors. The government needs free schools and academies; specialised medical facilities; a new generation of gas and renewables power plants. Put together, this is an awful lot of construction activity.

Much of this building work is driven by the need to cut costs. But, with exceptions (the Olympics for example), the civil service has a patchy record on delivering major projects, regularly encountering delays and cost over-runs. And with the addition of the purported skills shortage in construction this further adds to the uncertainty in project delivery. Consequently, when these construction schemes go awry, the projected project benefits may take longer to arrive, or fail to materialise at all.

Meanwhile, the government is determined to tackle the housing affordability crisis, increasing housebuilding and reducing price inflation. And it is prioritising support for British industry, focusing particularly on high-tech manufacturing, engineering and design businesses, export industries, and job creation in the 'Northern Powerhouse'.

We at KPMG think there's an approach that could achieve all three goals – improving certainty and efficiency in the government's building programmes; by speeding up housebuilding and reducing price inflation; and supporting a nascent British industry with huge export potential in a fast-growing global market.

Building a new industry

Offsite construction – or 'modern methods of construction' (MMC) – where component parts are manufactured offsite and then transported to site for assembly, is not a new idea. But it hasn't advanced as quickly as its champions had anticipated. [Independent KPMG research^{\(1\)}](#) has found that construction firms, developers and clients have been deterred by headline materials costs that appear to make a MMC building more expensive than its traditional equivalent. This perception has dampened demand, undermining investment in design or manufacturing.

"For the industry to truly value offsite construction and the benefits it brings, we must actively do more to quantify the economic benefits and recognise the crucial part it will play in transforming our industry" comments Andrew Wolstenholme OBE, Crossrail CEO and Co-chair of the Construction Leadership Council. Given greater demand for offsite components, we should see more supplier competition, capital investment and support services – in turn bringing down construction costs.

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In fact, KPMG's research indicates that MMC construction could produce a cash saving of 7% during the project. And that's just the beginning: other benefits include; better build quality, improved health and safety, fewer construction defects, reduced whole life asset maintenance costs, and reduced speed of construction resulting in a quicker turnaround in rental collection. Because MMC components are built and tested in manufacturing plants rather than on building sites, construction is less vulnerable to poor site and weather conditions. And the reduced need to coordinate specialist trades during the build takes complexity out of the logistics, reducing risk. What's more, MMC requires fewer subcontractors and materials suppliers – so performance data is easier to access. This allows for an element of predictability, supports decision-making and helps to avert any unwanted surprises.

These factors make MMC construction projects more predictable and also provide more certainty of operational expenditure throughout the operational life of the asset.

The draw for government

This is a major attraction for government schemes designed to cut public spending. If the risks of time or cost over-runs in the property aspects of government reform plans can be reduced, allowing managers more flexibility handling other moving parts such as IT capabilities, workforce issues and business process changes.

MMC has another advantage. In traditional construction, standardising design and build across a large construction portfolio produces economies of scale in materials costs, however, onsite labour, forms a big proportion of total spending. With MMC, both design and manufacturing of the components are standardised, equating to even greater potential for economies of scale. And the bigger the portfolio and the more standardised the components, the bigger the savings. Given the scale of government's property requirements, the opportunities here are obvious.

Savings would also emerge from the greater energy efficiency that can be attained using MMC components. This would not only cut government's energy bills, but also help to cut public sector carbon emissions.

And there's more. Much construction work is in London and the South-East of England, where salaries are high and there is huge pressure on housing, public services and transport infrastructure. Using traditional construction methods, workers assemble raw materials on site. So they must be housed and paid in expensive locations, and each project adds thousands of local vehicle movements to already congested areas. But with MMC, much of the construction work is completed in assembly plants. These are best located in areas with good transport links, reasonable land prices, a skilled workforce, and strong supply lines in fields such as raw materials and engineering. MMC could both help relieve the pressure on London's infrastructure, and stimulate the creation of manufacturing jobs in the 'Northern Powerhouse'.

In fact, MMC is a very neat fit for the government's economic development policies. The sector is growing fast around the world, in part because offsite buildings are well suited to emerging property technologies such as the 'internet of things', drone maintenance, and modular repairs. This global growth creates strong export potential, not only for components themselves but also for robust British industries in fields such as tools & machinery, civil engineering, urban design, planning and architecture.

If the UK becomes a world leader in MMC design and manufacturing, it will be well placed to capitalise on a global shift towards offsite construction. We could get in at the beginning of a new export business, favouring both northern manufacturing and Britain's strong creative industries. However, the sector is not yet at critical mass: it really needs a big boost in demand to attract investors and suppliers, and to generate greater economies of scale.

Looking for the hat trick

The government has long given MMC its backing. Housing minister Brandon Lewis has urged housebuilders⁽²⁾ to adopt offsite construction, arguing that it can cut housebuilding timescales from 20 weeks to three or four. The Homes and Communities Agency (HCA) says MMC reduces housebuilding costs⁽³⁾ by at least 10%, and some government infrastructure projects have specified that suppliers must include a proportion of MMC components.

However, there's the potential to go much further in using the government's weight – both as a major construction client, and in its policy work – to give this industry a boost, turning ministers' support and departments' interest into a coherent, cross-Whitehall policy initiative.

From April, the government has insisted that all centrally-procured construction projects must comply with Level 2 Building Information Modelling (BIM). In the same way, it could require all central government bodies to include a proportion of MMC components in new developments. Just as the Crown Commercial Service has centralised procurement of common goods and services, it could also standardise some elements of construction projects across government – realising the additional price savings that come with commissioning MMC components throughout a big property portfolio. Reaching across civil service office developments, infrastructure projects and service delivery operations, this would create substantial demand for MMC components whilst ensuring that public buyers get the best possible deal.

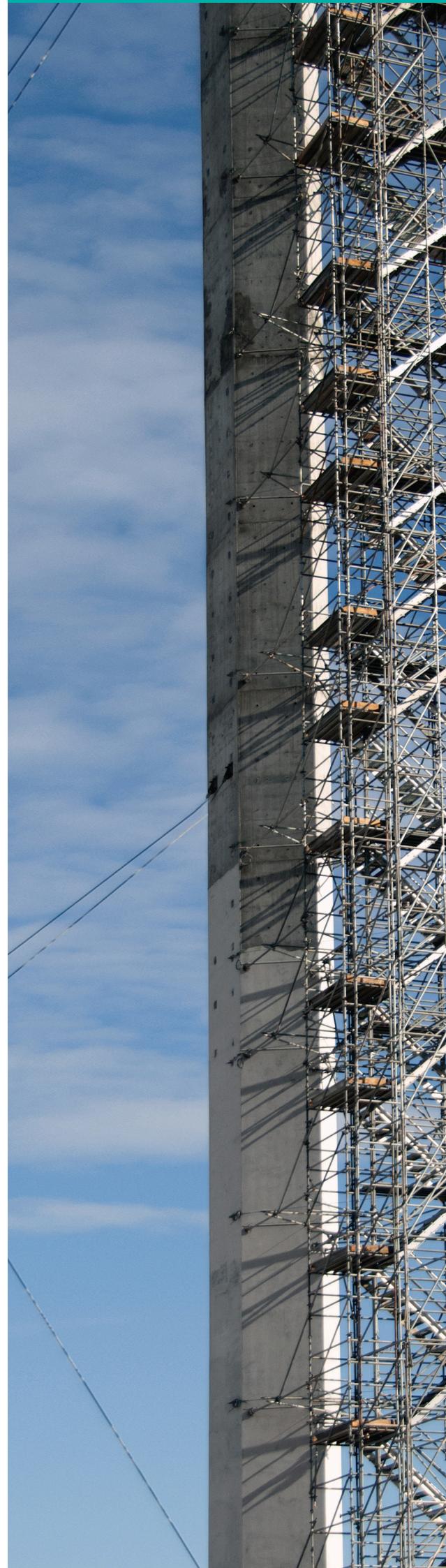
The government could also give MMC a big push on the policy side. It could build MMC requirements into masterplanning work for the 160,000 homes planned on land that government departments are being required to release. It could mandate a proportion of offsite construction among the 60,000 homes receiving support from the new £1.2bn Starter Home Fund. It could strengthen support for MMC among affordable homes supported by HCA capital funding. And it could favour MMC homes in its Help to Buy equity loans, Shared Equity and First Steps London schemes, which help first-time buyers to purchase new-build properties.

Offsite, on target

So there's lots that the government could do to boost demand for MMC. Of course, a proportion of this work would go to overseas businesses. Under EU rules, the government may specify components but it can't favour UK firms. Nonetheless, much should be won by the British companies with a firm foothold in the sector. Then rising demand would pull investment into manufacturing capacity, skills and product development, further driving down costs and creating a virtuous circle for public sector construction clients.

Housebuilders would also benefit from these falling construction costs, dampening inflation. And borrowing costs should also fall across the MMC development and construction sector, for three reasons. A more mature industry would represent a less risky investment; MMC construction timescales are shorter, bringing a faster payback time; and their higher quality and lower maintenance requirements reduce future liabilities for property owners. Smaller interest payments should feed back into lower costs for both public sector and housebuilder construction projects.

Ultimately, this kind of coordinated support for the offsite construction sector could give the UK a leg-up in a growth industry with lots of export potential, helping to build skills and capacity within strong British business sectors such as engineering and urban design. It could reduce the pressure on infrastructure in the South-East, whilst giving the Northern Powerhouse a boost. It could help support wider economic growth by improving productivity



and certainty within the construction sector. And it could drive up quality and sustainability within public construction projects, whilst taking cost and risk out of civil service and public service reform programmes.

If there are downsides, they lie in the political and organisational challenges around aligning the government's programmes and policies towards a common goal. But this government has already shown itself ready to coordinate its work in many fields, from BIM to departmental land releases to civil service procurement. In offsite construction, the obstacles are no more substantial – but the potential rewards could be much, much greater.

KPMG's independent research paper 'Smart Construction – how offsite manufacturing can transform our industry' is available to download from www.kpmg.com/uk/ibc

If you would like to discuss this report in further detail please contact Joshua or email us at reimaginegovernment@kpmg.co.uk



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- 1.<https://home.kpmg.com/uk/en/home/insights/2016/04/smart-construction-report.html>
 - 2.<http://www.insidehousing.co.uk/housing-minister-urges-sector-to-consider-off-site-construction/7005772.article>
 - 3.<https://www.gov.uk/government/case-studies/time-and-cost-savings-through-off-site-manufacture-of-new-homes>

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