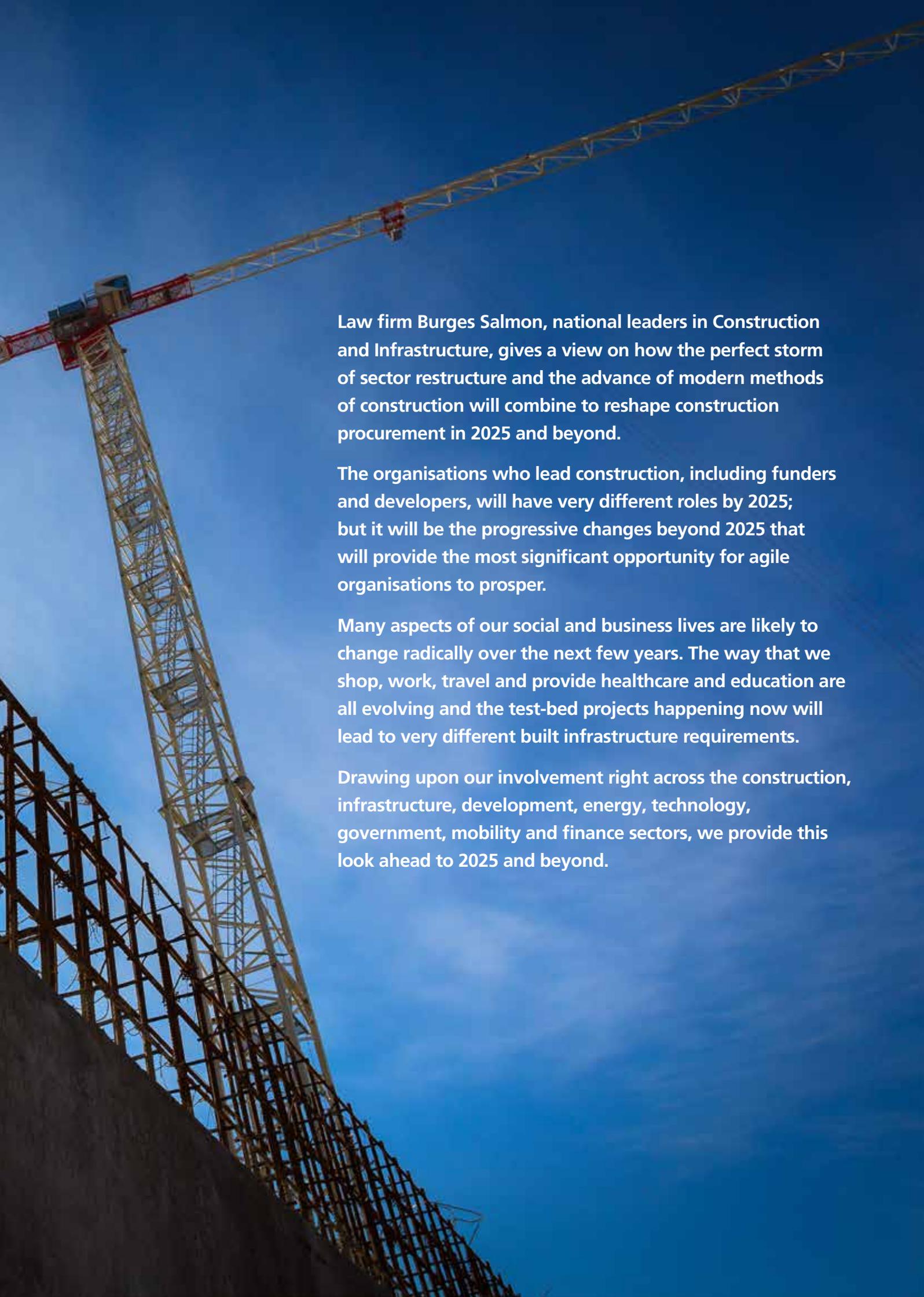

Burges Salmon
Modern Methods
of Construction in
a reordered world

“Never has the construction sector been so vulnerable to being reconfigured and never has the opportunity to deliver construction in a better way been so clear.”





Law firm Burges Salmon, national leaders in Construction and Infrastructure, gives a view on how the perfect storm of sector restructure and the advance of modern methods of construction will combine to reshape construction procurement in 2025 and beyond.

The organisations who lead construction, including funders and developers, will have very different roles by 2025; but it will be the progressive changes beyond 2025 that will provide the most significant opportunity for agile organisations to prosper.

Many aspects of our social and business lives are likely to change radically over the next few years. The way that we shop, work, travel and provide healthcare and education are all evolving and the test-bed projects happening now will lead to very different built infrastructure requirements.

Drawing upon our involvement right across the construction, infrastructure, development, energy, technology, government, mobility and finance sectors, we provide this look ahead to 2025 and beyond.

BIG PICTURE AND BIG OPPORTUNITY



Disruption and innovation work hand-in-hand. There are two massive forces acting as a catalyst for change in the delivery of construction projects:

- the increased adoption and mainstream use of pre-manufacture or modern methods of construction ("MMC"), a "pull" factor; and
- the failure of the "traditional" Tier 1 contracting model, a "push" factor.

The combination of these "push" and "pull" factors, together with the demand for increasingly creative and innovative solutions, will take the delivery of construction into new areas. Funding and investment models will respond and new opportunities will emerge. It is 20 years since The Egan Report, but the reality is that now is the time to deliver Rethinking Construction and make these changes deliverable at scale¹.

This commentary is not about the construction industry. It is about how a reordered world delivers construction projects.

There are huge opportunities for the agile. It is not just about data and technology, but also about how projects are structured and funded. Those brave

enough to embrace these changes head-on will thrive, while those who aim only to ride the storm will surely fall behind.

The UK will not change in isolation. The construction products market is already effectively global. The delivery of construction solutions, in part influenced by MMC, will become much more global.

Only when Design for Manufacture and Assembly becomes the norm will the efficiencies of MMC be fully realisable. To achieve this, changes in the skills and training of all designers will evolve. The big wins will happen when the volume demand-side and the delivery-side can be seen to operate together.

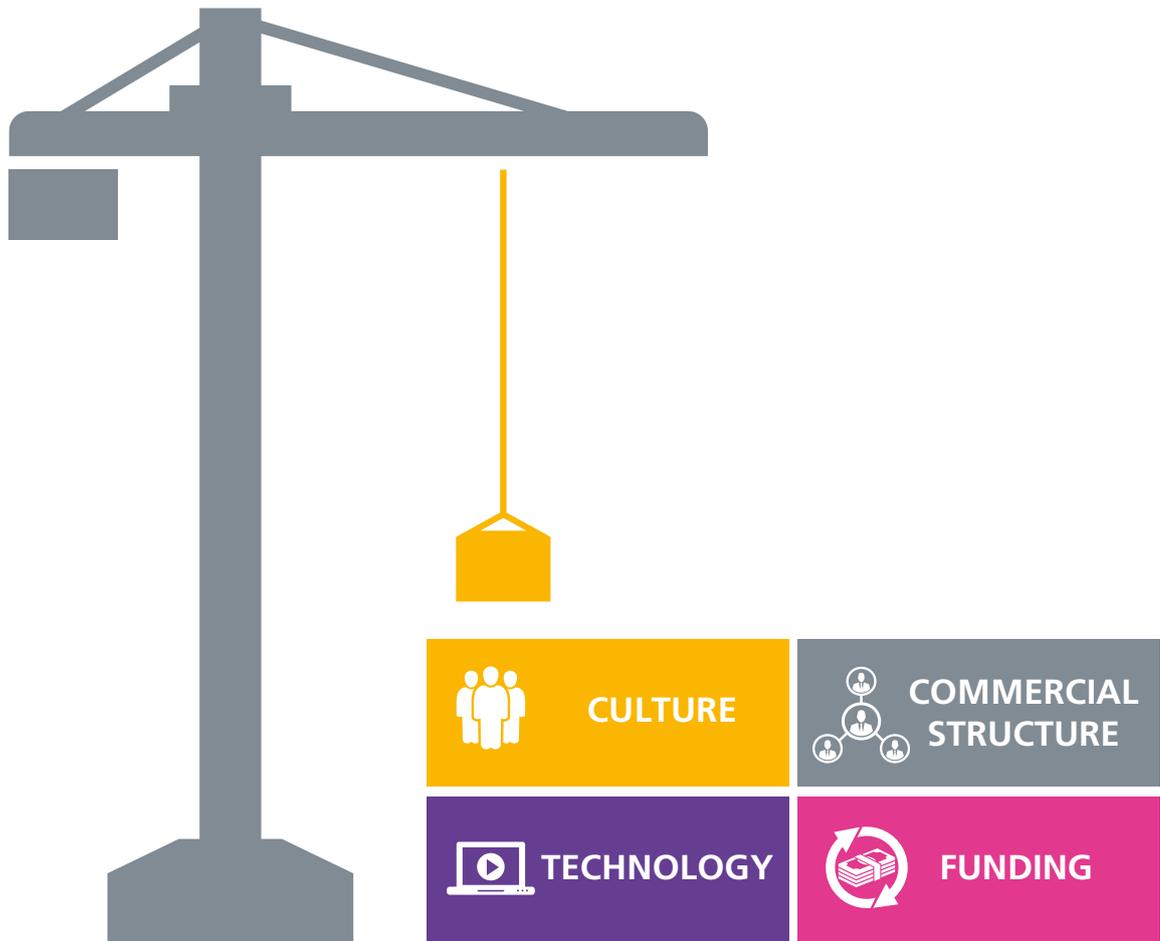
Brave early adopters are out there, but change at this scale is not straightforward. Whether what happens in 2025 or beyond is seen as revolution or evolution will depend on your organisation's creativity and agility - nothing else.

The Pull Factor: Modern Methods of Construction – what will the world look like in 2025+?

Growth in MMC is happening at a time of market change and opportunity:

- an emphasis on building homes – including renewed enthusiasm by local authorities to get back in the driving seat and "built to rent" long-term revenue businesses;
- a new retail focus on experience and delivery more closely related to the logistics world than ever before;
- innovative ways of working that challenge an office environment and look to widen the working environment offered within the hospitality sector; and
- fresh approaches to mobility of all types including electric vehicles and the required charging infrastructure.

All of these areas stimulate projects which are further catalysts to change in the construction sector.



MMC is not just about off-site fabrication, although that is a key driver behind the MMC revolution. MMC will generate significant development in the culture, technology, commercial structure and funding within the construction industry as a whole.

Culture

Existing roles and relationships as they are today will change beyond all recognition and new business models will emerge. The best of talent will work collaboratively and we expect to see room for a real alliance culture to develop over long term programmes.

The global nature of construction will become patent and we will see key MMC suppliers taking a stake in developments. As the focus moves from capital cost to long-term performance and revenue, payment for construction services will track in the same direction. Only organisations with a fit balance sheet will be able to respond.

MMC include:

- pre-assembly of systems and elements;

- panelised construction;
- volumetric construction; and
- hybrid, where some elements are volumetric,

with substantial fabrication in factory conditions. MMC change the nature of the element at the point of site incorporation from an individual product or raw material to a whole building sub-element, system or volume.

MMC are challenging the way in which projects are structured and in how project teams are remunerated and incentivised. This will have a significant and far-reaching impact on the payment flows and risk profile within construction. The need for the product to be fully designed before materials are sourced and manufacturing commences alongside radically different payment flows and timings will shift the balance of power within the sector.

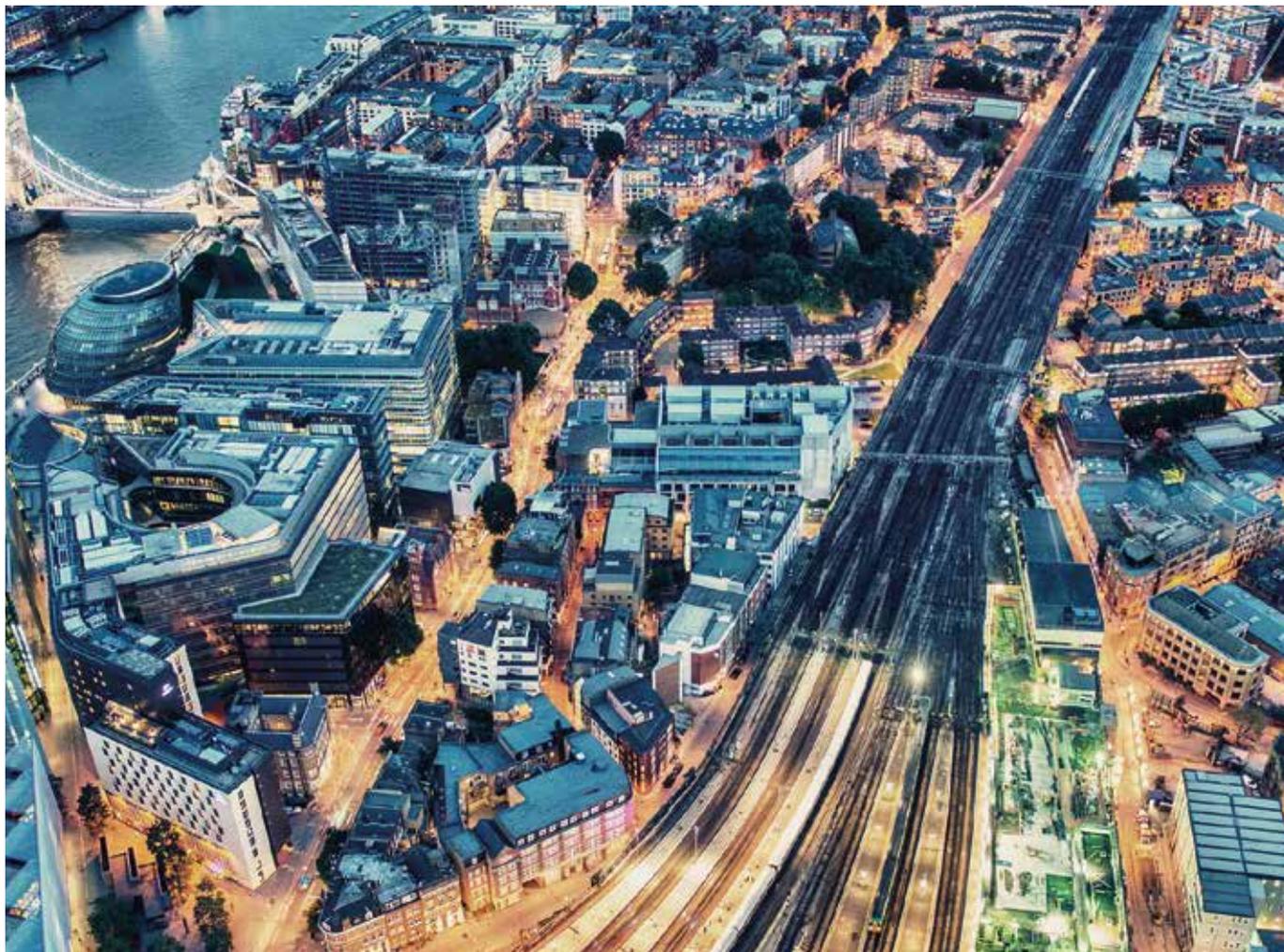
A project using MMC will still need efficient site-based works, varying in nature and extent with the extent of MMC, but the proportionate value of assembly rather than fabrication works

undertaken at site is reduced. The relative importance of the “contractor” as the main or general contractor will diminish, as will the risk of construction driven by site-based economics.

Technology

Design for Manufacture and Assembly will be the norm for construction projects. More sophisticated design tools will develop to optimise design, not just around ease of manufacture and site assembly, but to enable greater granularity of the design library. BIM will become BIM+ as it becomes truly integral to the design process and not an overlay.

Design collaboration will improve with structured and controlled use of intellectual property. A particular challenge with MMC has been that the products of different suppliers are not interchangeable, resulting in a need to select a MMC system earlier than might be commercially or functionally optimal. We can expect this to be addressed through enhanced use of open source information.



Commercial structure

Payment flows are completely different. MMC delivery typically require payment for the completed element at the point it leaves the supplier's factory and may require earlier commitment payments.

We have already seen UK projects which have put the MMC supplier at the centre; this will continue to evolve with specialist suppliers working on the same level as the integrator.

We can expect collaborative working with alliance-based payment of costs and overhead within profit margin paid on a shared basis whenever the team as a whole performs.

Funding

Commercial priorities are changing. In a traditional development model, the development funder provides funding to the developer to match required drawdown in the design and build building contract. Payment is made for elements or proportion of work completed.

MMC have provided a challenge for traditional funding. We are likely to

see funders engage with and fund the purchase of MMC elements directly, and to encourage MMC suppliers to take some risk of integrators and potentially of operations to incentivise holistic optimum management of risk. The role of the funder's monitor will change significantly to have line of sight to MMC suppliers.

The Push Factor: What has gone wrong?

Never has the construction sector been so vulnerable to being reconfigured and never has the opportunity to deliver construction in a better way been so clear.

The standard model whereby the owner or developer obtains debt funding from the market and then appoints a single contractor to deliver a construction project on the basis of a fixed price design and build contract is broken.

The margin achieved by the top Tier 1 contractors has fallen to a chronically unsustainable level: the top 25 UK contractors are posting an average pre-tax margin of 0.2 per cent².

Low margin drives:

- insufficient investment in skills, research and development;
- an inability to manage risk;
- a transient labour force at all skill levels;
- a balance sheet propped up by cash management which does not show the true state of the business.

Many Tier 1 contractors have either not had in post or have not empowered the right people to look ahead. Rather, a culture has developed that when a contractor signs a contract it bets on what the project will cost and then tries to deliver it for less.

It is increasingly irrational for any client, funder or investor to rely upon the covenant of a Tier 1 contractor.

This is not about allocating blame and indeed in many ways, clients and their funders have a responsibility for the current malaise with so many contract award decisions driven by headline price. Arguably, clients as a group have failed to properly resource their construction teams to look beneath a contractor's fixed price bid to see how a project will be delivered and managed.



Funders have had a part to play in the chronic state of the sector by taking a binary approach to the management of risk; risk allocated entirely to a design and build contractor is seen as a risk that is not carried by the borrower. Never has that been more false.

Change on the horizon

Positive change is happening. Tier 1 contractors have become more discriminating within the markets in which they bid, the risks that they will accept and the procurement approaches that they will engage in. Ultimate risk is not accepted in an uncapped way and governance processes are improving exponentially.

From a client and funder angle, the changing market gives rise to a need to look beyond a fixed price design and build option.

Large projects and MMC will see new models of package contracting, taking some of the principles of construction management but with individual packages aggregated into logical managed groups for stages or elements of the work. There will be an aggregator of risk remunerated in a way that more

closely reflects the success of the project. MMC suppliers will take risk in and reward from the project. There will be intelligent options to provide a fixed price wrap for the works, but only once an agreed stage of project delivery is reached and the prices of all packages known; Design for Manufacture and Assembly will assist that.

Clients will need to know that those who construct are properly remunerated. Funders will expect clients to have clear plans to manage cost overruns.

This is not quite the end for the Tier 1 contractor or design and build lump sum contracting. Rather, it is a time of rebasing the way in which the process works. There will be much more supply chain involvement in the tender or pre-construction stages. Where a Tier 1 contractor “wraps” risk there will be a transparent fee for accepting that risk. Tier 1 contractors will be able to self-manage that risk but insurance options will emerge.

In Construction 2025, the Department for Business, Innovation & Skills outlined its ambitions for 50% faster delivery, 50% lower greenhouse gas emissions, a

50% improvement in exports and 33% lower costs - all by 2025³. Five years on and this is demonstrably unrealistic; but Rethinking Construction⁴ has started, even if it has taken 20 years to get going.

The term “contractor” is misleading. As contractors become less likely to enter a contract to deliver a whole project and delivery becomes a genuinely collaborative exercise, the term “constructor” is perhaps more appropriate.

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³ Department for Business, Innovation & Skills, Construction 2025 (July 2013), page 5

⁴ The Report of the Construction Task Force, Rethinking Construction.

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