

COVID-19 AND THE REINVENTION OF THE CONSTRUCTION INDUSTRY

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In February 2018, Canadian Prime Minister Justin Trudeau told the World Economic Forum: “The pace of change has never been this fast, yet it will never be this slow again.” The COVID-19 pandemic has accelerated that pace of change, demanding rapid and far-reaching social and economic adaptations – and construction has not been immune. With little prospect of a return to a pre-COVID normality, how must industries such as construction adapt to survive and thrive? This paper looks at recommendations from the UK’s Construction Leadership Council which has urged a three-step programme of restart, reset, reinvent. Enforced home working has already revolutionised many workers’ reliance on technology. Digital working has also been at the heart of ongoing efforts to improve industry productivity. But true productivity gains will only materialize if construction businesses use digitization to support new business models and new, more collaborative ways of working.

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The global COVID-19 pandemic has had a profound effect on almost every single nation. And within each country, almost every major industry sector is now facing an uncertain future. Governments have been forced into unprecedented interventions to maintain essential services and to mitigate the economic and social

impacts arising from trying to limit the spread of the virus. During the first half of 2020, workplaces were shut down, people’s movements were curtailed, social distancing became mandatory, and governments began to spend billions to support businesses and households during their enforced lockdowns.



For the global architecture, engineering and construction (AEC) industry, some impacts were immediate. Construction sites shut down, offices closed, millions of workers were either furloughed or required to adapt to a 'new normal' of working from home, and governments were forced into major interventions to keep the AEC sector afloat. In the UK, for example, over 80% of construction businesses furloughed staff, with the government funding wages for around 1.5m construction workers, at a total cost (to the end of June 2020 alone) of £5.4 billion. Simultaneously, the industry was also plunged into the deepest recession in living memory.

Other pandemic impacts have been more slow-burning. Economic uncertainty about the speed and extent of any future recovery

prompted some industry clients to put projects on hold or even to cancel them altogether. In an already volatile, notoriously low-margin industry, this has been enough to put some employers out of business, while others have started to downsize so that resources match the forecast new reality.

The medium- to long-term impacts of the pandemic are still being debated, but governments are increasingly conscious that they may need to implement measures to ensure their countries' societies and economies can be more resilient in the face of future global threats. Entire industries including the AEC sector are now being urged to help respond to current challenges and to plan short and medium-term changes.



RESTART, RESET, REINVENT

In the UK, the Construction Leadership Council (CLC) played a key role in coordinating the industry's initial response to the pandemic. It worked with the UK Government to agree what activities were essential (rapidly expanding health facilities, and keeping vital utilities and transport

networks operational, for example). Then, as the national lockdowns slowed the pandemic and some constraints began to relax, it helped to formulate national guidelines on safe site operating procedures, while also encouraging prompt payment and measures to encourage collaboration.



On 1 June 2020, the CLC then produced a [*Roadmap to Recovery*](#), a strategy to drive the recovery of the construction and built environment sectors following the COVID-19 pandemic and resulting economic downturn. This is a three-phase program to be delivered over the next two years:

- 1. Restart:** increase output, maximize employment and minimize disruption (0-3 months)
- 2. Reset:** drive demand, increase productivity, strengthen capability in the supply chain (3-12 months) and
- 3. Reinvent:** transform the industry, deliver better value, collaboration and partnership (12-24 months).

Arguably, similar approaches could be taken by the AEC sector in every developed economy. The UK is not alone in having to respond to COVID-19 and to tackle more deep-rooted systemic issues which have hampered productivity for decades. According to McKinsey research, productivity growth per worker in construction has lagged most other industries across different countries including the US and European countries. In the US, for example, construction productivity per worker has declined by half since the 1960s.

Achieving a step change in AEC industry productivity is potentially transformative, helping boost entire economies. On average,

construction comprises 10% of national GDP, while it delivers buildings and infrastructure which also add value in other sectors. In February 2020, just before the pandemic took hold in the UK, a Confederation of British Industry report ([*Fine Margins: Delivering financial sustainability in UK construction*](#)) said every £1 spent on UK construction created £2.92 of value to the UK.

Thus: rebooting a country's construction industry potentially multiplies the benefits to other sectors and to the whole economy (while this paper focuses on UK challenges, we believe investing in similar approaches and ideas will benefit other economies too).





FIRST, RESTART...

To apply a computing analogy, sometimes a seemingly intractable problem is best tackled by turning a device off and then switching it back on. In construction, the pandemic effectively switched the industry off, and we are now restarting. However, we can also use digital working to support these vital restart activities.

For example, in its restart recommendations, the CLC talked about a rapid resumption of all projects and program, maximizing employment of all those working in the construction industry and supply chain, and minimizing disruption due to contractual disputes. As millions of individuals

working from home can already testify, projects can be resumed - and even accelerated - through the adoption of digital ways of working such as video conferencing (at Asite, we have incorporated support for Microsoft Teams, Zoom and Google Meet into our platform) and online collaboration platforms.

With digital capabilities now vital to continued employment, one-time IT luddites have become digital warriors, their eyes opened to the productivity gains of remote working and to the transparency of information enabled by electronic document and drawing management or common data environments.



SECOND, RESET...

Into the second half of 2020, after remobilizing existing projects and programs, the next nine months will, according to the CLC, be about developing a robust pipeline of work across the whole construction ecosystem, applying new approaches to offset the changes brought about by COVID-19 guidelines, and investing in training, collaborative business models, fairer contracts and payment.

Some building blocks for this phase have already been announced. For example, in June, the UK Infrastructure and Project Authority's (IPA) published its [Procurement Pipeline](#) which identified 340 procurement contracts across 269 projects, and a spending projection over the next year of up to £37 billion. And at the end of the month, UK Prime Minister Boris Johnson backed

the key role of the construction industry in kickstarting the economy with his much-hyped "*Build, Build, Build*" speech promising a £5 billion investment plan.

As part of its reset strategy, the CLC says wider adoption of digital technologies across clients and throughout the supply chain will enable better data and information sharing across the built environment to improve efficiency, productivity, sustainability and building safety.

This includes ongoing programmes such as [Transforming Construction](#) and the [Construction Innovation Hub](#) which are championing continued investment in building information modelling (BIM), design for manufacture and assembly (DfMA), digital twins, smart cities, and other process innovations.

Such processes are at the heart of productivity improvements already demanded across infrastructure and transport, and rooted in the production and use of high quality reusable data. Three reports produced at the end of 2017 set the scene. First, the IPA's [Transforming Infrastructure Performance](#) strategy says:

“... the IPA will continue to work across government, and with regulators, clients and asset owners and operators, to support and champion initiatives for promoting uptake of digital technology that can help unlock the benefits of smart infrastructure for new and existing assets. This includes supporting the Digital Built Britain programme, as part of the wider development of capabilities (with due regard to security considerations) for capturing, communicating and making best use of digital data.”

Second, the [Transport Infrastructure Efficiency Strategy](#) identifies seven core challenges, No.7 of which is to “Exploit digital technologies and standardise our assets”. It says:

“Digital technology and lessons from manufacturing present considerable opportunities to industry to innovate, invest and upskill in order to boost productivity. Suppliers need to be supported and incentivised to accelerate the use and application of Building Information Modelling (BIM) and digital technology in the design and project delivery of transport infrastructure. Digital tools will enable a more extensive adoption of modern construction methods, such as off-site construction and standardisation of assets, which will unlock industrial capacity across the UK.”

Third, the National Infrastructure Commission's [Data for the Public Good](#) highlighted the opportunities of artificial intelligence techniques such as machine learning, big data and data analytics. It said key infrastructure organisations will need to collaborate to develop appropriate data standards, building on existing regulations and guidelines.



THIRD, REINVENT...

If the CLC recommendations are carried through, from mid-2021, government and UK construction should be focused on applying such digital approaches to deliver better value, collaboration and partnership. These areas are not new additions to the mix in light of COVID-19.

They reflect the UK Government's continued commitment to its Construction 2025 goals (lowering project delivery costs, delivering projects quicker, with lower carbon emissions, and making UK plc more competitive) first set in 2013. They also reflect a consistent response to the 2016 Farmer report *Modernise or Die*, the latest in a long string of reports (eg: Latham 1994, Egan 1998, Wolstenholme 2009) bemoaning UK construction's inefficiency and waste.

The UK Government's 2017 Industrial Strategy and the July 2018 Construction Sector Deal reiterate the 2025 targets. The Sector Deal stresses three strategic areas: digital techniques, offsite manufacturing technologies, and whole life asset performance, and all three are included in the CLC's Roadmap to Recovery.

The CLC says: *"Adopting digital and manufacturing technologies at scale has the potential to transform construction productivity, with efficiencies estimated to be worth £7-15bn pa, and delivering high-quality, better-performing buildings for clients."*



The CLC also supports the Sector Deal call to *“work to ensure construction projects ... are procured and built based on their whole life value, rather than just initial capital cost”*. This is perhaps the hardest change to make. It demands a change to decades of industry procurement practices which have often focused on achieving the lowest price rather than seeking to deliver maximum value to the client and/or end users.

However, amid job losses and numerous profits warnings from UK AEC businesses affected by COVID-19, there are already reports ([Building, 10 August](#), for example) of ‘suicide bidding’ as businesses seek to win work at any cost to bolster their cashflow.

If we can look beyond such panicked responses, the CLC believes businesses need to overhaul their business models to reflect the new digitally-enabled normal. Hastily negotiated one-off project relationships might be replaced by long-term collaborative partnerships with customers who reward suppliers who deliver measurably better outcomes for their end-users.

And to help support such outcomes-based approaches, the July 2020 launch of the Construction Innovation Hub’s [Value Toolkit](#) is particularly timely for both clients and their supply chains.



REINVENTING CONSTRUCTION AFTER COVID-19

A return to the old ways of working, or, maybe a slightly improved ‘new normal’ might be attractive to some. However, this poses the risk, particularly if the AEC industry does have to withstand a deep and prolonged recession, that many firms resort to approaches that made it vulnerable in the first place. Low margin, lowest-price

procurement approaches, managed by fragmented supply chains, working under onerous and often-adversarial contracts, with maximum passing of risk and minimal investment in digital working and collaboration, have resulted in a sector with low productivity, low profitability and low resilience.

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Adopting a more progressive approach which uses the current crisis as a catalyst for change could deliver a very different industry sector. The CLC says the risks of not reinventing the construction industry are stark:

“Failure to act ... risks the industry lapsing into a longer term recession, which erodes capability and skills, and leaves a smaller, weaker sector as a legacy.”

However, if we act boldly, the CLC’s roadmap outcomes will be:

“a more capable, professional, productive and profitable sector, which delivers better value to clients, better performing infrastructure and buildings, and competes successfully in global markets.”

CONCLUSION



“Reinventing construction after COVID-19 is necessary to ensure that the industry not only survives, but thrives.

We have many solutions and technologies around us that are already being used to advance the industry into the future but we must work collaboratively and apply them together with meaningful intent to create the largest impact. Taking an ecosystem view of the industry will see communities and economies continue to build a resilient, vibrant society we can all be proud of.

I believe our built environment needs an open platform to capture the golden thread of structured and open data we all need. The team at Asite intends to keep working hard to help make this a reality!”