

Construction activity and market outlook



United Kingdom - Q3 2018

As the government tentatively announced a relaxation of austerity in the recent budget, there was some good news for the construction industry. The notable injections of money into the industry came from an extra £500 million investment into the Housing Infrastructure Fund to support a target build of 650,000 new homes, £38 billion for infrastructure, and £675 million to help revitalise town centres. The Help to Buy scheme has been extended to 2023, and tax relief is to be introduced for new non-domestic builds.

Clearly, however, our future prospects are intrinsically tied to the outcome of the Brexit negotiations, which have reached a critical stage this week with the publication of the government's proposals for a deal, which now goes forward to Parliament and negotiation at an EU Summit. It is still quite possible that the 'transitional period' could be extended beyond 31 December 2020, or we could leave with no deal. Such uncertainty will continue to have an adverse impact on both the construction industry and the wider economy.

UK GDP rose by 0.4% in Q2 2018, and by 1.4% over the year. Following the budget, the Office for Budget Responsibility (OBR) presented an outlook for stable but unspectacular growth of around 1.5% for the next five years, based on the assumption that Britain would have a smooth exit from the European Union (EU). Treasury analysis of a range of forecasters also puts UK GDP at 1.5% in 2019, but at 1.8% over the following three years. This pattern of modest, steady growth remains the basis for our market outlook also.

The CPI 12-month rate was 2.4% in September 2018, down from 2.7% in August 2018, and the Treasury is forecasting that this may stabilise at

around 2.1% over the next four years. Interest rates remain at 0.75%, following the November review. We would consider it unlikely that a further change would be introduced before the March 2019 EU withdrawal date.

It is a positive sign that at 4%, the unemployment rate is now at its lowest since the mid-1970s, and in construction, employment rates appear to have remained fairly steady, despite the challenges of Carillion and Brexit. Construction-related compulsory liquidations are down by 5% on the year. Average weekly earnings in construction have increased by 5.9% in the year to Q2 2018.

Construction output recovered following a relatively weak start to the year, increasing by 2.9% in the three months to August 2018. This was driven by increases in both repair and maintenance and new work (up by 2.8% and 2.9% respectively). The private commercial sector is not expected to recover for at least two years; however, increases in other sectors (notably residential, industrial and infrastructure) should compensate before new work output starts to grow more sharply from 2021.

The BCIS is forecasting tender prices to rise 22% over the next five years. Our own forecasts over the same period are somewhat lower to reflect our view that any post-Brexit boost to the industry may take slightly longer to be properly realised than might have previously been anticipated. Our assessment is for continued inflation on imported goods due to sterling depreciation, and increasing demand for skilled labour, but with any steep rises in input costs being tempered by the subdued throughput of new orders pending the outcome of Brexit. Our comparable uplift for London is around 17% over the same period; lower across the UK as a whole, given



Materials and commodities costs:

The BCIS Materials Index rose 1.1% in Q2 2018 compared with the previous quarter, and by 4.8% on an annual basis; sterling exchange rates remain the primary influencing factor. [BCIS]



Labour costs:

At 4%, the unemployment rate is now at its lowest since the mid-1970s. In construction, there was a modest fall in employment of 1% in Q2 2018, but otherwise it remains fairly steady. Average weekly earnings in construction have increased by 5.9% in the year to Q2 2018. [ONS]



Inflation:

The CPI 12-month rate was 2.4% in September 2018, down from 2.7% in August 2018. [ONS] The Treasury reports that, on average, CPI is forecast to rise by around 2.1% over the next four years. Interest rates remain at 0.75%. [Bank of England]



Insolvencies:

Construction-related compulsory liquidations in Great Britain fell by 31% in Q2 2018 compared with Q1 2018, and by 5% on an annual basis. [BCIS]



GDP:

UK GDP rose by 0.4% in Q2 2018 and by 1.4% over the year. [ONS] Treasury analysis forecasts UK GDP to be around 1.5% in 2019, and 1.8% over the following three years.

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Total construction output rose by 1% in Q2 2018 compared to a year earlier but remains fairly static overall. Public housing rose by 10%, infrastructure by 3% and private industrial by 6%. These are currently the strongest sectors. Private commercial is not yet recovering from its post-EU referendum downturn; output fell elsewhere.

The picture regarding new orders is broadly as last reported. Total construction orders fell by 7% in Q2 2018. Within this figure there was a 21% fall in private housing, suggesting a potential cooling in certain areas of the market, and a 23% fall in public non-housing. Public housing rose by 29%.

It is to be hoped that the measures announced in the budget will give a boost to both public and private residential development, and the extra money for infrastructure will underpin regional redevelopment.

As previously reported, the industry continues to show a great deal of resilience and is actively employing new thinking to improve performance and efficiency and develop new methods of working.

In London, the draft new London Plan will have significant implications as we move towards a zero-carbon city by 2050 with energy efficiency measures, use of smart technologies, and low carbon energy sources. The issue of smart technologies is discussed in our technical article within this report.

It has to be noted, however, that Brexit presently overlays all issues, in both the construction industry and the wider economy.

In September, the CIPS noted the weakest rise in construction output for six months, a picture mirrored by the IHS Markit/CIPS UK Construction Purchasing Managers' Index. At 52.1 in September, this was down from 52.9 in August, albeit still above the key no-change threshold of 50.

Over the long term, our forecast is for continued residential-led growth within our main cities, underpinned by continued government investment in key infrastructure projects. Notably, in the budget, the government expressed support for the Cambridge-Oxford Arc, which could open the path to a million

extra homes by 2050. Consideration is also being given to a proposal for a new central railway between Cambridge and Bedford.

There is always concern that major government-led projects can get derailed by external economic and political events. In the long term, however, initiatives such as these and HS2 positively impact the need for commercial, retail, education, social and industrial development alongside the new homes proposed.

The chancellor has announced the end of PFI, but it must be assumed that in time this will be replaced by a new PPP model.

BCIS has advised that tender prices may fall slightly through 2018, before recovering to a level of around 6%pa by 2023. Consistent with the relatively

steady economic data this quarter, our TPI forecasts show only minimal movement from our previous reports. In general, these remain positive but at levels below long-term averages.

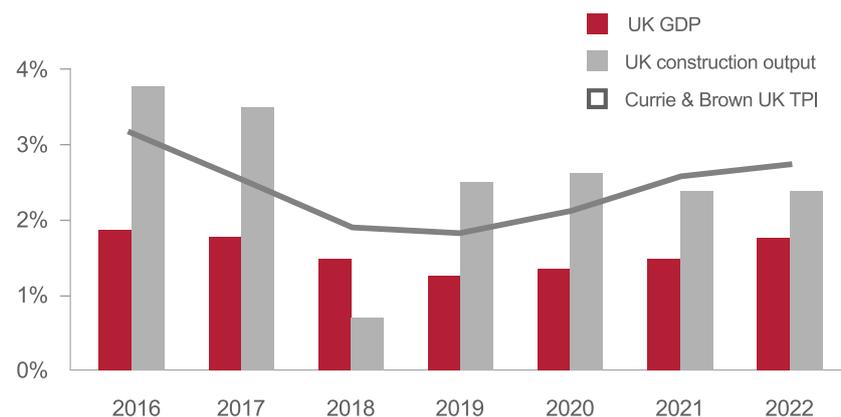
Regionally, the South West is showing particular signs of growth and this is reflected in a general uptick in the latest TPI forecast figures. Elsewhere, the situation is much as before. There is a comparative slowing of construction in London, but optimism appears strong in the regional cities, notably in the North West and in West Midlands. Northern Ireland is showing some development momentum in Belfast, despite problems at the executive level. Scotland remains constrained by the state of the oil economy and shortages in skilled labour.

UK tender price inflation by region (%)

Region	2017	2018	2019	2020	2021	2022
East Anglia	2.4	1.6	1.4	1.5	1.8	2.0
East Midlands	2.4	1.7	1.5	1.7	1.9	2.3
West Midlands	2.5	1.7	1.6	2.0	2.5	2.7
North East	2.1	1.4	1.6	1.8	2.1	2.2
Yorkshire and Humber	2.4	1.9	1.8	2.1	2.4	2.5
North West	2.5	2.0	1.9	2.0	2.4	2.6
Northern Ireland	2.5	1.2	1.2	1.5	2.0	2.0
Scotland	2.0	1.7	1.6	1.9	2.1	2.2
Central London	3.0	2.4	2.5	2.7	3.4	3.5
South East	2.5	2.1	1.7	2.3	2.9	3.0
South West	2.6	2.0	2.1	2.1	2.4	3.0
Wales	2.2	1.2	1.3	1.7	1.8	2.0
UK average	2.5	1.9	1.8	2.1	2.6	2.8

Our forecast provides guidance on the general level of tender price inflation, based on major and medium-sized projects across all sectors of the market. Project-specific commercial factors can have a significant impact on the level of pricing - size of scheme, attractiveness of scheme (eg complexity, location, risk, etc), procurement route (eg single-stage, two-stage, negotiated) and keenness of tenderers (eg local market dynamics, workloads, hot spots, realisable margins, etc).

Annual UK tender price inflation (%)



How smart technology is changing the way we design and operate our buildings: applications for the commercial/retail sectors

For some time now, technology and its applications have been fundamentally changing the way we interact with buildings and the wider perception of what a building is. In London, the new London Plan provides the vision and policies that underpin the aspiration for a zero-carbon city by 2050, and smart technology will play a key role in this, alongside energy efficiency measures, and low carbon energy sources. Given the growing challenges of climate change and the importance of energy efficiency as well as the increasingly important nature of data capture and analysis, it is evident that smart buildings are set to become an important part of the new built environment. This article focuses on the applications of smart technology on commercial and retail buildings.

The concept of smart buildings

The point that needs emphasising from the outset is that there is no single model for what a smart building contains. The smart building concept is constantly evolving. It is elastic in its nature and absorbs different components, functions and preferred outcomes into the concept to fit a project brief or the perception of an individual development team. At the same time, many existing definitions do share a few central ideas as to what a smart building is, notably that the smart building should be interconnected, flexible, automated, energy efficient and comfortable for the occupants.

Initially, smart buildings were defined as those that integrated various systems to effectively manage resources with an aim to maximise technical performance. For example, the integration of

heating, ventilation and air-conditioning systems (HVAC) in order to optimise temperature, air flow and humidity levels for occupants. However, the rapid evolution of technology has stretched the smart building concept to now include the internet of things (IoT) and its wider applications. The incorporation of IoT has in turn led to, and introduced us to, the term 'intelligent buildings', which is effectively the natural evolution of the term 'smart building'. For consistency, we will only use the term smart buildings.

Overall, smart buildings revolve around the principle of connectivity. Specifically, this means:

- how a building is connected with its systems
- how it is connected with its occupants
- how it is connected with its surroundings

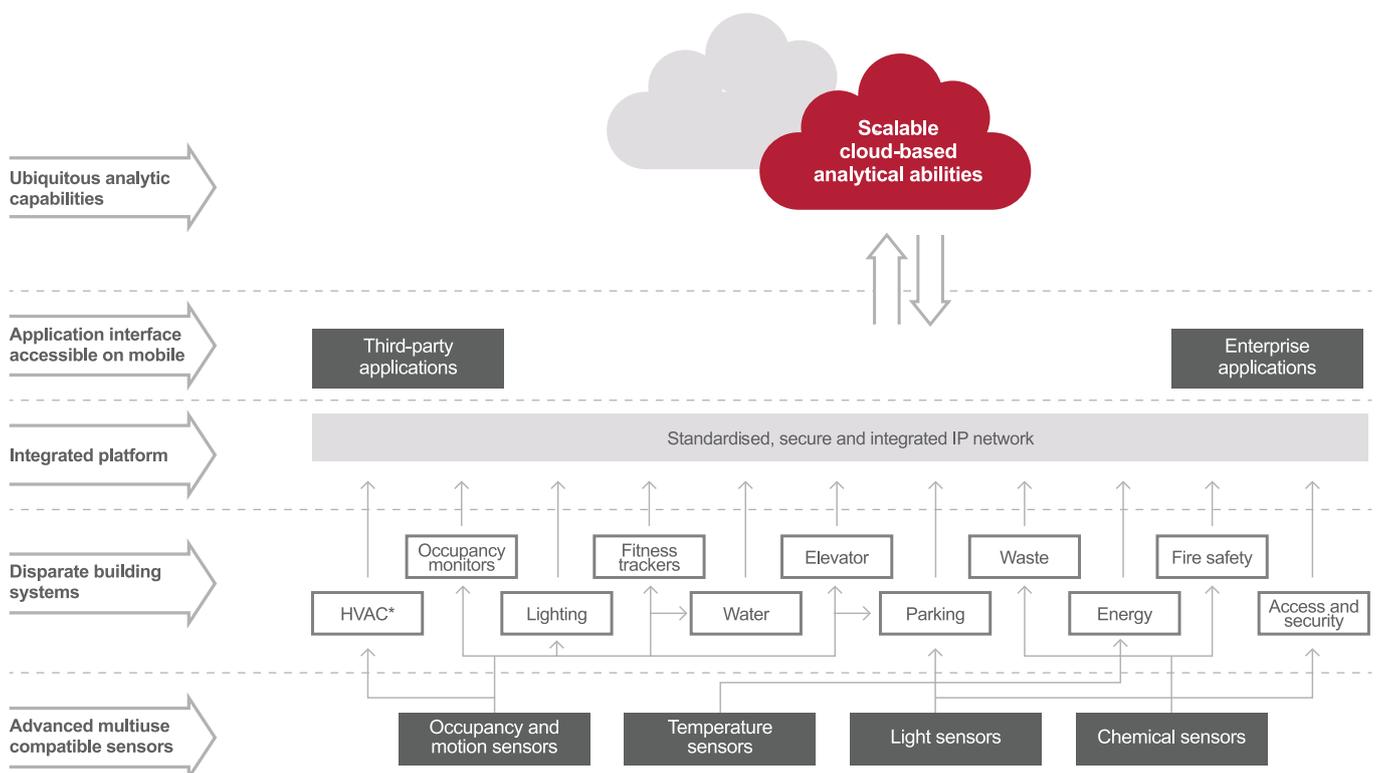


Figure 1: IoT information value stack for CRE buildings

* HVAC refers to heating, ventilation, and air conditioning

Smart building's characteristics and current trends

Systems

Modern buildings contain complex mechanical devices, sophisticated control systems and a suite of features to improve the safety, comfort and productivity of occupants. If the benefits of all of this technology are to be fully realised, then smart buildings require connectivity between all of these equipment and systems. For example, it is quite possible to use the data from a building security system to turn off lights and reduce cooling loads when occupants are not present in a space. Such a relatively simple piece of integration of a building's systems can lead to energy efficiencies and a tangible reduction in a building's operational costs. However, within buildings of multiple occupation, such as in the commercial and retail sectors, the movement towards fully connected devices and systems within a building is likely to require co-operation between multiple parties and system providers. The principles may take a while to become established. At a system level, the levelling of the playing field may take the form of the adoption of open standards between different systems. Eventually, however, the result should be a building where lighting, air conditioning, security systems and every other system are constantly communicating by the exchange of data. This will lead to higher efficiency, more safety and comfort and lower operational costs.

Occupants

The connectivity with occupants is a major emerging trend in smart buildings through the introduction of the IoT and the wide use of data capture sensors. Different types of sensors can track features such as motion, pressure, light and temperature creating vast amounts of data around building operations and the environment. This is highly relevant in commercial buildings where such data can be used to optimise working conditions and ultimately contribute to increased productivity. Further, the potential impact of IoT applications is not limited to machines. IoT technologies can track and help to improve employee and occupant health and productivity as

well. The use of wearables can facilitate this. These can track the condition of each occupant and feed relevant information back to the building's integrated management system. Such systems can also create revenue-generating opportunities including direct marketing based on occupants' fitness and nutrition habits.

The concept of smart buildings is becoming increasingly important in the retail space with an increasing number of operators investing in such technologies to enhance customer experience in a disrupter to the traditional retail environment. This is based on both software and hardware applications. IoT technologies can help operators draw key insights around preferences and decision-making behaviours of end-consumers, such as identifying 'buyers' and 'browsers' by using footpath technologies. Additionally, marketing strategies can be implemented: the provision of smart offers through mobile phones; increasing operational efficiencies via the communication of parking and restaurant availability through mobile phones; and beacons based on knowledge about end-customer location and condition.

Surroundings

Truly smart buildings will leverage knowledge that resides outside its walls and windows, and smart building technology has the potential for change at a macro as well as a micro level. Smart building technology has the potential to provide interconnectivity between buildings as well as a city's infrastructure and transportation network, creating the concept of 'smart cities'.

An example of this is the smart grid, where buildings would incorporate the algorithms to decide on optimal energy usage based on weather conditions, current electricity prices, as well as opportunities to trade energy with the grid on pre-agreed prices based on supply and demand dynamics.

Implementation

From a construction perspective, it is important to decide on the technology strategy of a building from the outset since this will enhance the efficiency of the design and effectively lead to cost savings. Technology can be

incorporated either at the core of a building, with all features centrally provided, or as add-on options for tenants who can then decide for themselves what hardware and software they would want to install. The latter option, however, still requires a considerable input to the scheme's base build design in order that the necessary infrastructure is in place for a tenant to install the desired technology. Additionally, given the speed of technological evolution, particular thought should be given to the future-proofing of buildings and how these will be able to address and adapt to the technological advancements of the coming years.

Given the all-too-familiar pressures on costs and margins in commercial development, commercial real estate (CRE) owners may be predisposed to seek to improve margins first through the more tried-and-true methods of cost savings and operational efficiency, rather than connectivity. It should be appreciated, however, that IoT applications offer substantially greater possibilities to build upon those efficiencies, enabling CRE owners to use data generated through connected systems to differentiate their services and identify new revenue opportunities. The continuous monitoring and predictive capability of IoT-enabled buildings can also anticipate a repair or maintenance issue by enabling a building manager to take appropriate corrective action before tenants even notice a problem.

Conclusion

The significance and role of smart buildings will become increasingly relevant to the cities and communities of tomorrow. The rapid technological advancement allows for technologies to be used that were considered unaffordable a few years ago. Moreover, the need for energy efficiencies and optimal consumption is becoming critical to our environment. Smart buildings can address this challenge by using sensors and integrated platforms to predict a building's energy needs at any given moment, driving energy savings as well as providing operational cost efficiencies to a building's owner. Similarly, such technologies can increase employee mental wellbeing, and in turn their productivity, while assisting retail operators to maximise revenues and enhance a customer's experience.

The future-proofing of buildings is of crucial importance and a scheme should be designed with this in mind from the outset. It is without doubt that technology will not only keep changing the way we build but will also change the way we interact with buildings.



Dar Group's headquarters, which Currie & Brown is providing cost consultancy and project management services on, has been designed to become a future-proofed smart building. Tenants can install the sensors and systems that best match their needs and requirements.

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