20 July 2020 bulletin

Coronavirus, communications and the built environment

#09 The digitalisation leap

ING's ninth fortnightly intelligence publication investigates how the acceleration of technology will impact on spaces, buildings and infrastructure as more people return to cities. Previous bulletins have dedicated sections to culture, creativity, collaboration, networking, content, inequality and climate. COVID-19's impact on how we live, work and move in the built environment has been substantial – our forthcoming edition will conclude the series by exploring the most important trends and innovations impacting on brands, organisations, and cities to help those working across property, architecture, design, regeneration and culture navigate complex change. This will be followed with a virtual debate on 6 August, 12-1pm to explore what comes next.

MORE GLOBALLY CONNECTED THAN EVER

Google and Apple mobility data provides a snapshot of people returning to urban life, with consumption tracking closer to pre-lockdown levels in some parts of the world. Public transport in Monaco appears to have returned to pre-pandemic levels. However, parks and residential areas remain far more visited than before, and public transport use is recovering far slower than workplaces. As consumer confidence returns in China, Shanghai, Guangzhou, and Beijing have replaced local holiday destinations more accessible by air, although global flight activity is improving[1]. Major centres with well-connected public transport networks, established public amenity, and developed urban appeal may prove resilient as more areas of the world replace national lockdowns for targeted interventions, testing

data providing the capacity to unmask an otherwise invisible pandemic. Estonia's digital nomad visa expands its e-residency scheme and may consolidate Tallinn's as one of the best places for freelancers.

Israel has imposed a partial lockdown, while Serbia backtracked after anti-government protests. The USA's unsuccessful move to deport foreign students taking online-only classes due the pandemic highlights that convergence between the physical and digital world is far from complete. It may also accelerate growing distrust of elections and government by younger generations more comfortable with technology.

Record COVID-19 cases in warm Florida suggests summer may not be significant in transmission decline in Europe and China, adding evidence that a combination of hygiene, social distancing, isolating, testing and contact tracing will remain key to managing the pandemic. In many instances, a low-tech, communal response has shown greater efficacy in lowering transmission than tech-heavy solutions, however, growing doubt about herd immunity will increase focus on a vaccine[2] and the possibility of competition to do so. Organoids – simplified versions of organs – are one of the ways scientists are investigating how COVID-19 impacts different parts of the human body, while others are exploring how animals may hold the keys to immunity. Digitalisation is not the unbundling of the physical world, but a rethinking of how we interact with it.

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1   A more rapid increase in business aviation over scheduled flights may mirror the risk of increased private car use.

2   The University of Oxford's vaccine candidate may be the most advanced, possibly completing human trials in September, however other candidates are also being secured. Treatments continue to be developed too.

SETTING A PATH OUT OF LOCKDOWN

Face masks, a basic piece of analogue technology, will become mandatory when shopping in England from 24 July, following Scotland. The UK is particularly reluctant to don masks[3], however, the increased risk or airborne transmission may see the UK follow other countries in implementing masks in more public places although offices have been ruled out. Restabilising consumer confidence may be important to get the UK to recover as quickly as European peers as tourism and more leisure activities reopen. A further easing of restrictions allows an immediate return to public transport use and places of work from 1 August, both areas which have curbed the reopening of larger city economies.

The UK's government's attempt to build its own technology[4, 5] before reverting to Apple-Google contract tracing may give technology monopolies greater policy wriggle room in future. However, a ban on Huawei 5G kit[6] in the UK and reducing data processing in Hong Kong highlights how long-term brinkmanship doesn't disappear in a digital world. Technological supremacy, data encryption, and undersea cable links may become even more important although advanced nations will find it increasingly difficult to compete in all areas. Built environment innovators will need to strategically communicate technological leadership, while navigating the possibility that where technology is produced may become more contentious.

A jobs retention plan aims to get millions of furloughed employees back into work, and

retain and develop capacity in the built environment sector ahead of an autumn budget announcement that will focus on the government's build agenda. A temporary stamp duty cut is hoped to boost housing transactions but may also increase inequality and hinder first-time buyers. Digitising the data needed for transactions like conveyancing searches may help reduce transaction inertia, as might making purchases legally binding earlier in the process as in other countries[7]. The possible reason behind the UK's lack of recovery data and calls for a review of coronavirus death data in England highlights that data is never neutral.

COMMUNICATING ONES AND ZEROES

COVID-19 has forced a rethink of daily life and the role of technology in organising it, from work to school to entertainment. For many the digital transformation of our places of work and education have been essential to remaining operational. As social animals, we embraced it – perhaps more reluctantly – to see friends and family and keep culturally engaged through sport or the arts.

But is it the major transformation that it is touted to be? And, if so, can it last?

While many have marvelled at watching a crowdless football match or experiencing an orchestra conducted via Zoom, we have watched football or Glastonbury by television for years. Buying a pint through an app? Most of us have already booked a table using one. For each corporate pivoting their workforce to a distributed model is a CTO who has been pushing this adoption for years. The role of digital in our lives is changing fast but it is not new. What is missing is choice; at least for now the pandemic has focused many to digital-only. In business terms this favours companies and individuals who are early adopters, embracing this direction of travel well before the pandemic.

The biggest myth around digital is that it is online, tool-based and the opposite of the physical environment. Digitalisation – and the

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3   Australia, Finland, Denmark and Sweden and the UK were significantly more reluctant to wear face masks than any of the other countries polled. Overcoming cultural and/or political traditions opposed to this will require significant leadership and creativity.

4   Australia, Turkey, Germany and India are the only countries where government contract tracing apps have been installed by more than 10 percent of the population.

5   The NHS is using predictive technology to predict and help manage future outbreaks

6   It is not only Chinese hardware that is gaining attention; TikTok, one of the world's most downloaded mobile apps, is seeing more public and private organisations banning its use.

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7   In many countries this happens as early as when the offer is accepted by the seller.

technologies clustered around it — provide possibilities for business to engage with employees and customers more fully by helping to visualise challenges and incentivises positive change.

In the built environment sector, the speed of development of digital innovation may have the effect of making physical space *more* important. If you can be anywhere online, where you are physically may take on more importance, as may the narratives which connect us to place. An address in the centre of a global city or participating in a major international event may become an essential differentiator in a more competitive market.

SENSORS AND DATA

Coronavirus has accelerated our increasing reliance on data. 'Follow the science', meaning follow the data, is a daily mantra for policy makers (although not all of them). Weekly, daily, or even real-time information has become a staple: the R-rate, tracking apps and global cases and deaths. Reliance on visualised data that tells a simple narrative is a symptom of change and uncertainty. We want numbers to make sense of a challenging reality and to plan recovery. Stark regional variations in COVID-related hospital deaths show inconsistencies in nation-wide resilience. Lack of local data is hindering cities' outbreak response, leading to allegedly unnecessary local lockdowns, and damaging local economies.

Data-driven content quickly opened new opportunities for businesses in the built environment to position themselves as leaders, based on the proprietary data they can mine. Rent collection became a new bellwether for the property sector. The market held its breath in the run up to the March quarter day and has been eagerly scanning news reports for evidence of collection levels since. Early reports were only on a case-by-case basis, emerging from individual company reporting, inevitably piecemeal and dominated by the REITs. This limited the opportunity to form meaningful conclusions about wider trends. The convergence of proptech with this appetite for rent recovery intelligence created a new indicator. ING worked with Re-Leased, the cloud-based property management platform, to aggregate and share their real-time rent

collection data from the 35,000 commercial leases their clients manage in the UK, giving the first UK-wide picture of the resilience of the commercial property market.

Unlike conventional property research, which can be survey based and inevitably reflective, mining real-time *digital* data is providing lead indicators seven days prior, collection levels on the day, and post-quarter day recovery progress, in addition to regional and sector-by-sector breakdowns. It even yields predictive data using Scotland's earlier quarter day to suggest how the rest of the UK might perform. The blanket coverage resulting from our campaign is a clear demonstration of the media's growing appetite for data-driven content.

This is the proptech sector's moment to demonstrate its power, by aggregating anonymous data from across its clients to give the market a much needed dashboard for the journey to recovery. The resulting content has the potential for compelling communications, in areas of growing importance in the post-pandemic era, from rent collection to occupational density and air quality. We may see a new generation of leading voices in real estate, shaping the news agenda and gaining increasing traction across social and digital media channels.

VISUALISING (BIG) DATA

Analysing data to contain pandemic is not new: mobile phone data and social media were used to help contain the 2014–2016 West African Ebola outbreak. The *global* COVID-19 pandemic has, however, accelerated our capacity to use and understand data. It is possible that mining large datasets for patterns may prove more efficient than complicated modelling for some applications. ING's research tracking conversation strength across billions of digital mentions, for example, provides a strong benchmark for a place's investment potential. It is likely that the need to find recovery solutions quickly will see the use of data analysis increase substantially.

Capturing, interpreting, translating and visualising data into digestible and accessible content has been a key tool to communicate the impact and reach of the pandemic across the world. Media has played a pivotal role in

providing a platform for data visualisations. The Financial Times' charts of country trend data; The Guardian's interactive storytelling; and The New York Times showing the workers at the greatest risk of coronavirus are all examples of how data has become the primary content. The impact of this goes beyond traditional news: Mona Chalabli's data-inspired illustrations communicate social injustice.

Digital literacy has accelerated, albeit unevenly, in part due to the increase of data-driven communications. Computer game Minecraft is being used to enable collaboration on public space design. In the longer term, schools introducing targeted lessons, some around digital health, and programmes to bridge the divide in digital literacy, may see employees entering the labour market with far more confidence when it comes to using data to make decisions.

The impact of the pandemic on the data science market is already apparent, in a push for further investment in data analytics, recruitment and upskilling. Google search data can identify pandemic related challenges and opportunities for businesses, providing invaluable trend analysis.

While 3D visualisations have long been used to shape the built environment, the use of data and virtual reality, which is making its way onto mainstream TV, may provide for a creative jump. However, balancing the curiosity to innovate against a desire for preservation may become more important, particularly as people try to find footholds to navigate change. Following the devastating fire at Notre Dame the design world responded with fantastical engineering feats of how the landmark could be reimagined. It will be reconstructed exactly how it was before, however, significant technological intervention will likely still be required to achieve this.

The division of the so-called 'old' city and the new 'smart' city has already taken shape pre-pandemic; embedding technology within the built environment is not new. The retrofitting of public transport and sewerage systems to reduce cholera outbreaks in 19th century London and New York shows the long-term

value investing in new technologies can have in cities. It is likely concerns around hygiene and social distancing will fast-track the digitising of buildings, infrastructure, and services. The digital integration of cultural markers will require careful consideration given sensitivities around the loss of authenticity in much the same way each new use of technology to determine sports outcomes raises controversy.

A MEASURABLE RETURN TO CITIES

The pandemic has made us realise cities matter. Yet leadership decisions taken at a national (and sometimes global) level impact on what city leaders can achieve and how we understand urban risk. Increased calls for linking devolution and recovery will need to be balanced to ensure cities and wider urban areas are still able to deliver strategic infrastructure. The blocking of temporary cycle lanes by local interests may be indicative of a need to consolidate planning at a more metropolitan scale.

Empty cities across the world have emphasised how important integration between transport infrastructure, urban form and building use is. Increasing confidence in public transport is key to unlocking the UK's biggest economy: London[8]. Thermal scanners on buses may support this as might better air filtration, real-time monitoring, or stricter vehicle emissions controls given a strong correlation between COVID-19 fatality risk and NO_2 and PM2.5; however messaging highlighting that public transport may not be as unsafe as feared may help too: studies in dense Hong Kong, Paris and Vienna found no links between infection clusters and transit. At current intervention levels, public transport use in the capital may not reach pre-pandemic levels before November, far slower than many other global centres. Many smaller UK centres are close to recovery, however, major cities lag substantially even though studies are increasingly debunking as assumed link between urban density and infection. A quicker return on weekends suggest unlocking the return to offices is key;

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8   The central two percent of London contributes 10 percent of national economic output and is arguably the UK's most important real estate.

in the longer-term, greater residential densities in urban centres and shorter commutes may become more important for resilience.

Better open source mapping could highlight opportunities for using land better. Government car parks alone could free up land for 110,000 homes and better integrate fragmented land parcels. The London Data Store and Colouring London[9] are just some of the initiatives to increase access to geospatial data; it may become more important for public[10] and private organisations to support recovery by contributing and using open datasets more strategically. Unlocking Land Registry and Ordinance Survey data will likely form part of a longer term effort to digitise planning and reduce the unevenness of data supply across the UK. It may also provide the framework to rationalise disparate local planning regimes, which may make it easier for smaller organisations to compete nationally.

As more buildings invest in digitising access, it is likely technology will no longer be a USP, with digital connectivity as important as sustainability metrics. It is likely this conversation will merge: a thermostat controlled by a remote app may be a quick way to make homes greener. Online booking systems to access gyms or having to use apps for haircuts, or to order drinks in pubs or food in restaurants for touchless crowd management suggests physical and digital will increasingly integrate. Expanding logistics may need new tech to manage goods from order-to-door, with consumers increasingly expecting easily to understand, real-time data. This will partly be in exchange for people becoming the most important sensors in understanding urban performance as more data scientists try to crunch mobile data, search patterns and user-generated social media content. However, integration will be patchy and rudimentary at first given the significant uplift in skills and knowledge that will be required to navigate this.

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9   The project has expanded to Colouring Beirut, Bahrain and Dresden.

10   Adding narrative to numbers will be important for making data accessible to decision-makers and transparent to the electorate, and advancing strategic capacity, which is part of the rationale behind Cape Town's Open Data Portal.

The pandemic may accelerate e-scooter adoption in cities like Berlin and Seoul and Google Trends data shows a global surge in interest for e-bikes, suggesting shared and private micro-mobility is likely to accelerate. A 200-year-old piece of technology continues to dominate searches, with sales leading to a worldwide bicycle shortage. Bikes still provide the most rapid opportunity for places to improve mode share sustainability – especially where low densities or limited mixed use limit walking by making journeys too long.

BUILDING TECHNOLOGY

Technology may be a significant consideration for how organisations bring people back to work and return to a stable business activity. From a landlord and investment perspective, the stakes are high on the return to the office. In the UK alone, the office sector is valued at £273 billion. But as several large corporates and tech giants including Standard Life Aberdeen, Google, Amazon and Facebook extend their remote working policies, the pre-pandemic value offices held requires recasting.

Many are looking to tech for solutions and expect the pandemic will accelerate proptech innovation. The wider smart building narrative – which may consolidate under a new certification for smart buildings – has begun to diverge to include how we use technology to protect health and safety. While the language used to define good buildings around wellbeing, sustainability and smart living may shift or converge, it is very likely that buildings able to communicate solid tech, green, and health and wellbeing credentials will attract a premium. Building owners are increasingly embracing proptech as part of recovery and long-term resilience by improving ROI and occupancy. In the short-term, much of this may be focused on improving the monitoring and reporting of health indicators and using tech to sanitise buildings.

Technology will not only reshape the experience at a building scale. While Google may have abandoned its plan to turn Toronto's waterfront into a smart precinct, the concentration of user data held by large tech firms will likely encourage more to reshape the urban experience. Tencent, one of the world's biggest

technology companies by market value, has [plans for a car-free city](#) on the edge of Shenzhen. Most proptech innovation will help us better use what is *already* built.

OFFICE ZOOMIFICATION

The accelerated integration of video calling and remote working to everyday life has major potential to shape the impact of COVID-19 upon the design of offices – in arguably a more lasting way than urgent need for hygiene and social distancing while we remain in a state of high alert about potential outbreaks.

The British Association of Aesthetic Plastic Surgeons has joined similar groups internationally in reporting a ["zoom boom"](#) – with some practitioners reporting a 60-70 percent rise in requests for consultations; pressure to look good during video conferencing has led to [a 300 percent increase](#) in cosmetic rhinoplasty procedures in Australia. While these examples demonstrate an extreme, linking them to video calling does illustrate the pressure many feel to present well online – and this pressure is something we expect to see expressed in office design, where the need to get good images and sound through a webcam will have an impact on layout, lighting, acoustics, desk furniture and backdrop.

Video calling will continue to be a primary communication tool following lockdowns and the evolution of [professional YouTuber's](#) home-filming setups may give some clues to potential trickle-down techniques that designers may begin to deploy to make workplaces ready. Noise cancelling technology used in call centres may also become more mainstream.

OFFLINE PLANNING

While most if not all local authorities in the UK have adapted their planning decision-making process to take place online or through delegated powers, questions remain about the accessibility of online [public consultation](#). In Cornwall, [councillors objected](#) to the small number of people that had responded to an early stage online Development Plan Document consultation. Local planning officers clarified that 328 responses[11] was good compared with

traditional consultation methods, suggesting that a benefit of digital consultation tools is that [scrutiny of their use](#) may provide a stronger indication of performance and benchmarks to increase quality and inclusion, whether physical or online.

Planning consultants frequently cite 16-24-year olds as the hardest group to engage with, but this demographic's high levels of social and political awareness and digital access suggests digital platforms have a role to play. Create London, OPDC and the Young Brent Foundation [have begun an exercise](#) to give younger voices more prominence in planning processes, supported by [DK-CM](#) workshops to question the meaning, tone, audience and openness of planning language.

DK-CM has also been exploring how digital can be used to amplify [democratic planning system principles](#), including an [Instagram-based consultation tool](#) created on behalf of Hemel Garden Communities in Hertfordshire. [Commonplace](#) is another example of engagement moving online.

MARKET SHOCK

The UK's largest economic decline [in 300 years](#) may give an indication of remarkable long-term stability. EIU forecasts suggest most G7 and BRICS countries will recover from recession in Q3 this year, with China the only country expected not to enter into recession after reporting [growth in Q2](#). Mukesh Ambani's holdings in India's most valuable company by market value see him become the [only Asian](#) on the top 10 Forbes wealth rankings. Technology disruption linked to real estate activity may see greater diversity in these rankings, which are typically [dominated by US billionaires](#).

British Airways [early retirement of its 747 fleet](#) suggests many organisations will use the downturn to refresh technology. In industries without monopoly advantages, those not advancing technology investment may find it less easy to compete. It is likely [demographic decline](#) in many countries will advance investment in automation too to prop up shrinking labour forces.

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11   Cornwall has a population over 500,000.

FINAL THOUGHT

The digitisation leap may have an impact on the physical world in unexpected ways. [Interactive theatre](#), for example, may provide new ideas of what is possible on stages around the world. It is likely that the expanding integration of digital into the built environment will have the same effect, impacting on how we understand and consume cities.

While many parts of the world ran out of hand sanitiser, some are turning it into a [connected service](#), including auto-ordering refills. And yet, [basic tech innovations](#), may still be sufficient.

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