

CONSTRUCTION MANAGER

MAY 2020
For members of the CIOB

constructionmanagermagazine.com

THE NEW NORMAL

HOW CONSTRUCTION
IS COPING WITH
THE CORONAVIRUS



The Future of the

Construction Manager

The lives of construction managers are rapidly changing as technology transforms how buildings and infrastructure are designed and built. We call this the Era of Connection. Find out how the trends will affect you in a new video made in conjunction with CIOB, and discover how you can stay ahead of the curve.

Watch the video at
www.autodesk.co.uk/campaigns/eoc-video-study



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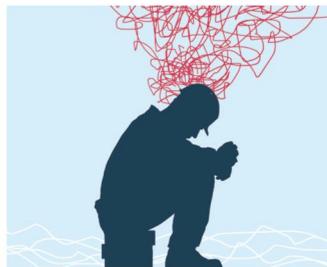
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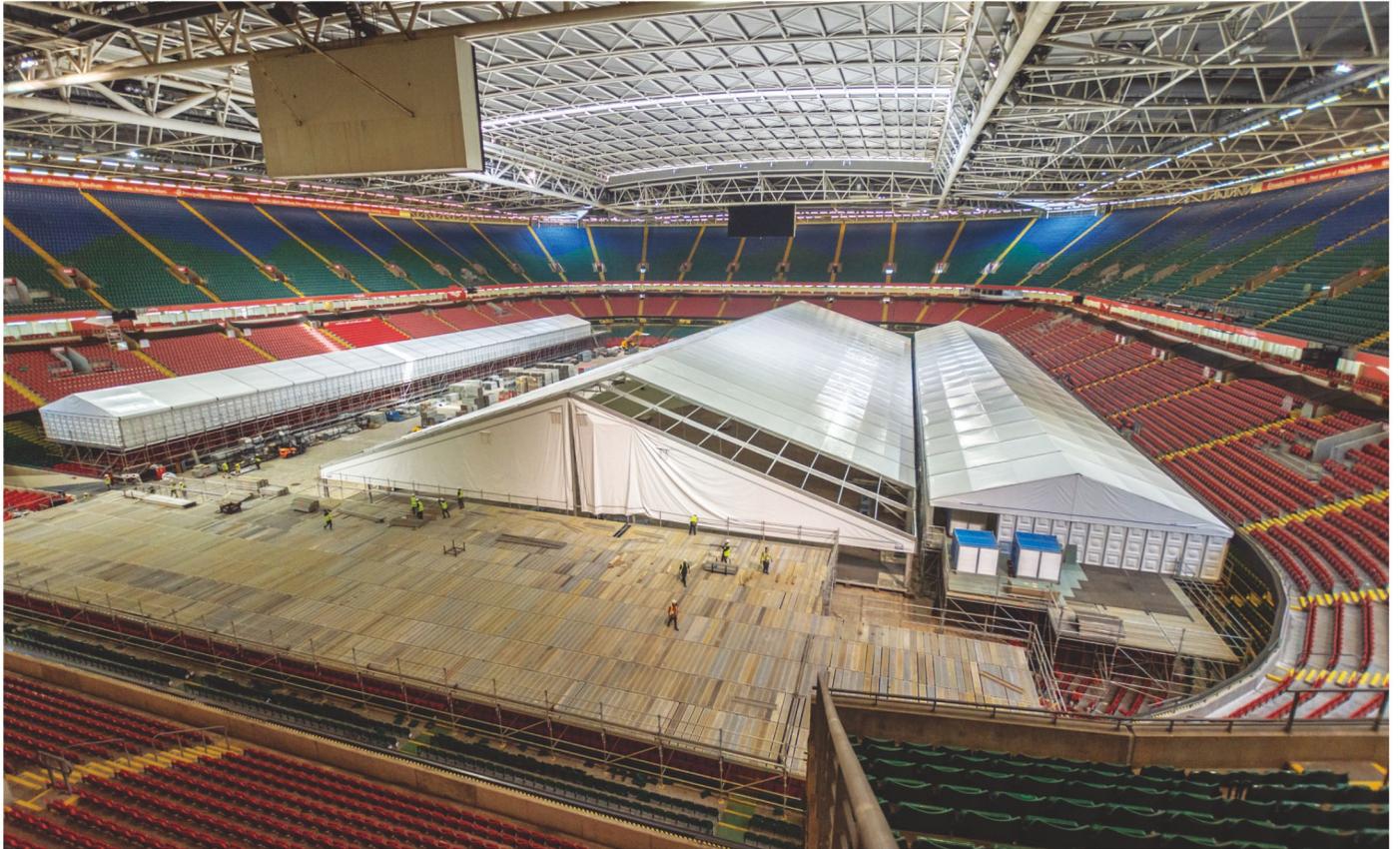
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News


▲ Principality Stadium converted into 2,000-bed coronavirus hospital

The Principality Stadium in Cardiff, which normally hosts Welsh rugby matches, is being transformed into a temporary coronavirus hospital. The first 300 operational beds are in the stadium's hospitality spaces and corporate boxes and were operational in under two weeks. Contractor ES Global worked with Mott MacDonald on the design and build of Dragon's Heart Hospital. The stadium will eventually house 2,000 beds.

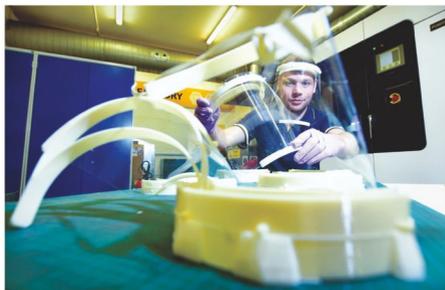
► Foster 3D prints face masks

Architectural practice Foster + Partners has designed a face visor which can be 3D printed. The open-source prototype, which is being trialled by hospitals in London, is made of three parts: a polyethylene visor, a headband and a silicone rubber head strap connecting them. Foster + Partners estimates that each face shield can be laser-cut in less than 30 seconds and assembled in a minute.



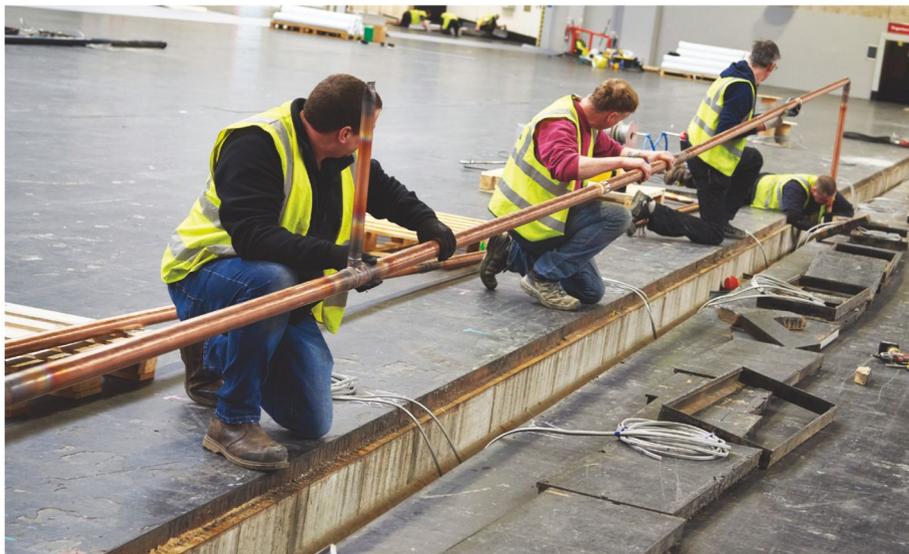
 News story for CM?
Email neil@atompublishing.co.uk

CITB creates Covid-19 testing app
The CITB has developed a free app so employers can run their own in-house interim testing. The app will allow employers to determine if an employee is safe to work on their site. The app will be available to download shortly.



▲ JCB pitches in to make PPE

JCB and volunteer employees have set up production lines for vital PPE needed by frontline NHS services. The plant manufacturer has reopened its Innovation Centre in Staffordshire, with engineer Joe Mumby (pictured) among the staff using 3D rapid prototype machines to help produce medical grade visors.

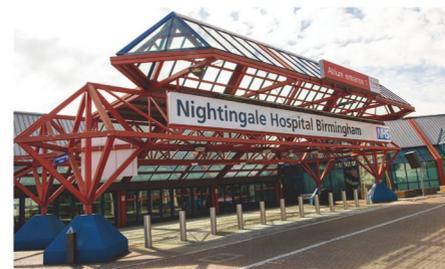


CLINICAL PHOTOGRAPHY@UHB.NHS.UK



▲► Interserve transforms NEC into Birmingham Nightingale hospital

Interserve completed the 800-bed first phase of the Nightingale Centre at the NEC in Birmingham in just seven days. Some 400 Interserve employees and contractors worked over 40,000 hours and 60 Gurkhas helped to finish the project. The works involved the use of 67 miles of cable, 10 miles of copper piping, and vinyl covering 11.5 football pitches. The hospital will eventually accommodate 4,000 beds.

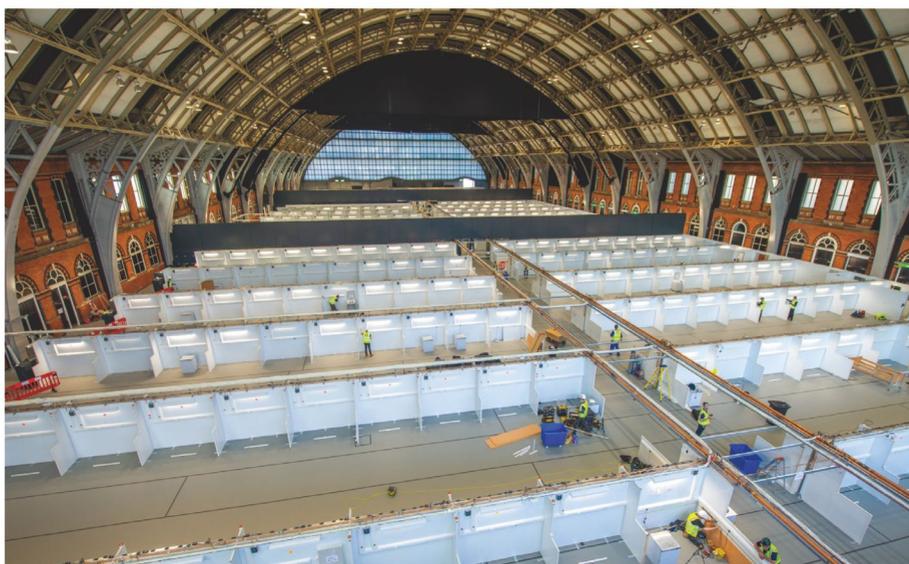


▲ Australian university develops 'pandemic drone' for Covid-19

A 'pandemic drone' designed to detect people with Covid-19 is being developed by the University of South Australia, in partnership with tech firm Draganfly. The drone will use sensors that can monitor people's temperature, pulse and breathing and detect sneezing and coughing in crowds. It can carry out its mass diagnosis from a distance of up to 10m.

► Vinci-McAlpine JV builds temporary Manchester hospital

IHP, a joint venture between Vinci and Sir Robert McAlpine, delivered the 750-bed NHS Nightingale Hospital North West, a temporary facility at the Manchester Central conference centre. Up to 1,000 people worked 24-hour days over a two-week period to deliver the hospital inside the iconic Victorian-era former railway station.



CHRISTIAN SMITH

CM CORONAVIRUS SURVEY: MOST OF CONSTRUCTION TRYING TO KEEP SITES RUNNING

A MAJORITY OF CONSTRUCTION PROFESSIONALS SAY THEIR ORGANISATIONS ARE TRYING TO KEEP SITES OPERATIONAL DURING THE CORONAVIRUS LOCKDOWN, ACCORDING TO A COMPREHENSIVE INDUSTRY SURVEY BY CM AND THE CIOB. **NEIL GERRARD** REPORTS

Below: The word cloud shows the most common keywords which came up in the survey, sized according to their frequency



Most construction businesses believe they can follow coronavirus health guidelines and still keep sites open but face a challenge to convince workers that they are safe.

Those are the among the key findings of a survey by *Construction Manager* and the CIOB of 1,740 industry professionals, conducted shortly after the Covid-19 lockdown commenced.

More than half (56%) of those surveyed said their organisations were keeping all or some sites open. Of these, 57% said their organisations believed health guidelines and rules around social distancing could still be followed.

Asked in which sectors sites remained operational, half (50%) said that healthcare, education and other public building sites were still running, 28% of infrastructure sites and 19% of social housing sites.

Perhaps surprisingly, 31% said that private commercial sites and 26% that private housing sites remained operational. One respondent noted: “Most of the projects remaining open are not essential but driven by profit.”

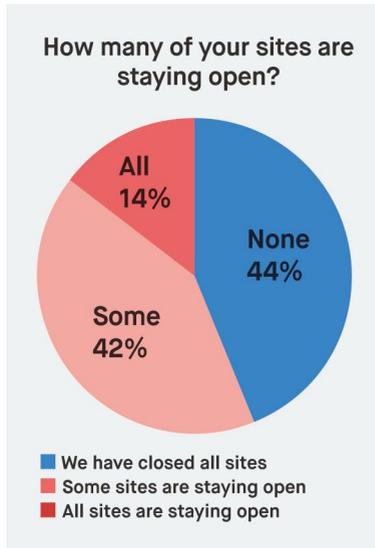
On sites staying open, coronavirus protocols were largely being followed, according to the respondents.

Some 81% said the 2m social distancing rule was being observed by workers on site. Three-quarters said there were handwashing facilities at the entrance to the site and on the site itself, and 77% had observed enhanced cleaning of all site facilities.

“We need a better idea of how long the measures are going to take and what the actual plan is so we can move forward”

81%

Some 81% said the 2m social distancing rule was being observed by workers on site



Another added: “[We need] more clarity relating to suppliers and manufacturers. Within the guidance, it appears some form of normality can continue but at reduced rates and efficiency. Construction activity may be able to continue in some form, but without the critical supply chain such as precast then critical operations will bring a project to stop. This and the guidance must be reviewed regularly. If activity was considered to be a contributor to disease spread, it should stop.”

Asked what else government could do to support the construction industry, many called for a clear path forward set out by government to stop their organisations having to take even more drastic action.

One respondent said: “We need a better idea of how long the measures are going to take and what the actual plan is so we can move forward. The company I work for can cover a two-week break in play, if we know that we can start up shortly after.”

“There must be some idea of the trajectory and impact of the outbreak that could be shared. If we are looking at more than two weeks, I do believe we will furlough staff and possibly even look to close down.”

Testing – of both industry workers and key workers – was identified by dozens of respondents as offering a potential route out of the lockdown. “[We need] more testing for Covid-19 so people who have antibodies can return to work and get the economy moving,” said one. ▶

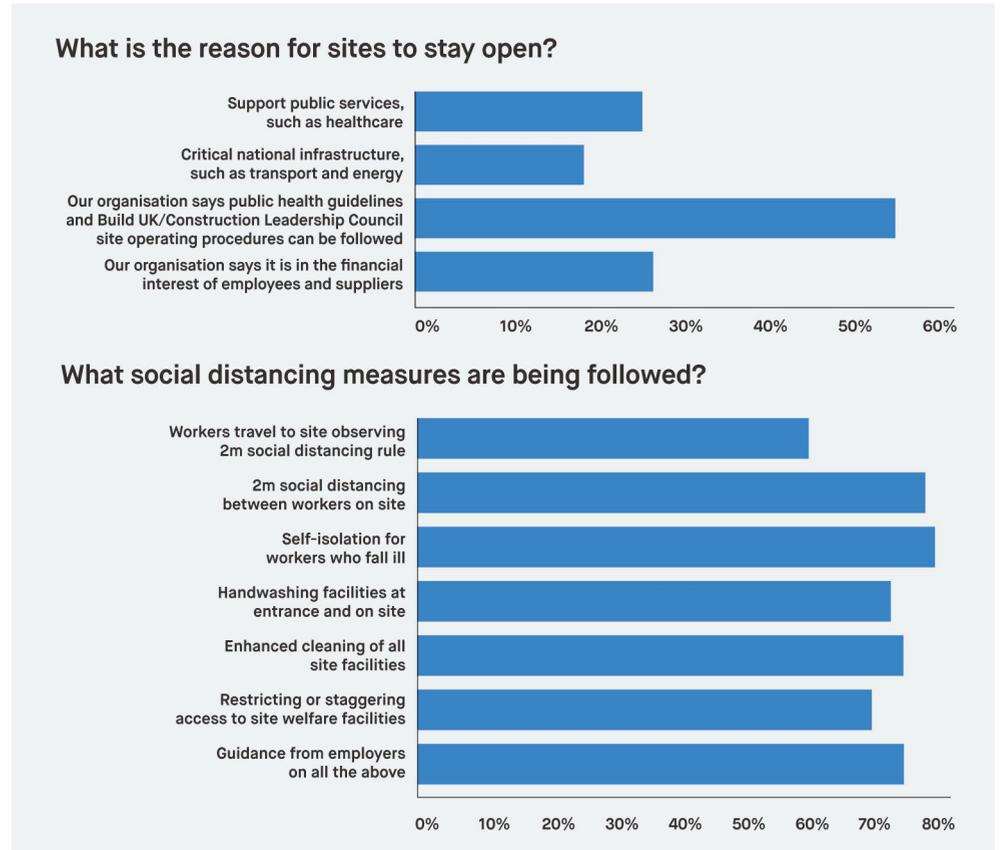
Meanwhile, nearly three-quarters (72%) reported that measures have been put in place to restrict or stagger access to site welfare facilities. A total of 76% said employers had been issuing guidance on all of the health guidelines for safe site operation. And 81% said that ill workers were following self-isolation rules.

Travel challenges and a lack of clarity
But travelling to and from sites while still observing the 2m social distancing rule appears to be proving more problematic, with only 61% reporting that it was possible.

Construction employers face a challenge to convince workers that they are safe on site, with only 46% of respondents reporting that workers are happy to continue working.

And there were calls for clearer rules on what was and was not permitted for construction sites during lockdown.

One respondent said they were confused by government advice. They said: “There are mixed messages of: ‘Only travel if essential’ versus ‘Go to work if you cannot work from home.’”



Some 51% of respondents said that they were volunteering to support the NHS or other charitable cause

51%

Financial worries

More than half of those surveyed are worried about managing their personal finances beyond the next three months, with some facing serious financial worries as a result of the lockdown.

The survey found that 47% were worried about managing beyond July, while 7.5% already had serious short-term concerns.

As a result of the closures, 38% of respondents reported staff being furloughed in their organisation, with 8% asked to take pay cuts and 7% seeing staff laid off. Another 42% reported staff being paid as normal, with 1% seeing staff being asked to have wages deferred and 3.5% witnessing staff being asked to take voluntary unpaid leave.

Perhaps surprisingly, 80% of respondents reported suppliers being paid as normal, with 4% saying suppliers were being asked to take reduced payments and 11.6% reporting suppliers being asked to take deferred payments. Another 4% said that suppliers have had contracts cancelled.

However, there were complaints about some firms' behaviour during the lockdown. One specialist contractor said: "We have been disappointed with a number of main contractors enforcing contract law to try and get our workers on site who are currently on furlough. Other contractors who are willing to take risks and gain financial advantage by taking contracts off us is of real concern." ●

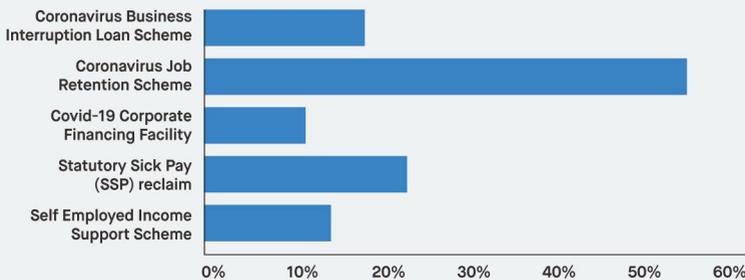


What voluntary work are you doing to support key workers or other charitable cause?

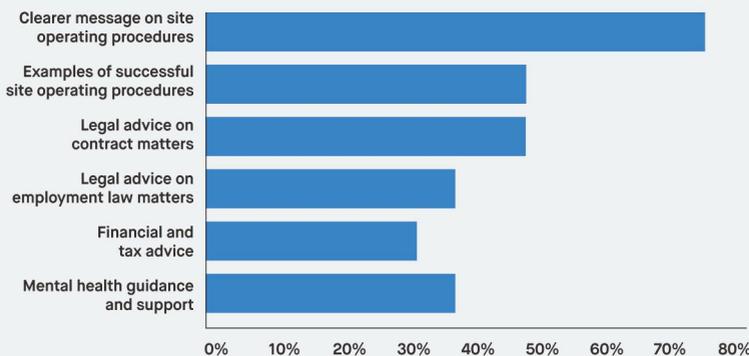
Voluntary Work	Percentage
Helping vulnerable members of society	37%
Supporting the NHS and key workers	22%
Donating PPE to public services	18%

Some 51% of respondents said that they were volunteering to support the NHS or other charitable cause in the fight against coronavirus. Of these, nearly a quarter (23%) said they had volunteered their help, while 18% donated PPE or other essentials to the NHS or other public services. And over a third (37%) were doing their bit to help vulnerable members of the community, such as by shopping for the elderly. Another 22% of respondents said they were helping in other ways, including offering food donations, looking into 3D printing masks to protect health workers, helping with maintenance jobs of local NHS facilities which were short-staffed, and offering to volunteer on a personal basis where their employer had not done so.

What financial support measures from the UK government will you or your organisation be taking up?



What further advice or support would be helpful to you from construction industry bodies?



"We have been disappointed with a number of main contractors enforcing contract law to try and get our workers on site who are currently on furlough"



architectural acoustic finishes

Oscar Elite exceptionally smooth acoustic plaster was used throughout this impressive office reception to control reverberation, give clarity of sound & reduce overall noise levels for this multi-award winning refurbishment at the Halo Building, Kings Cross, London.

With our extensive range of recycled, seamless, acoustic decorative finishes, we enable designers to create beautiful & inviting modern spaces that sound just as good as they look.

Credit to Steffian Bradley Architects & Gary Britton Photography.



OSCAR
acoustics

COPING WITH THE CORONAVIRUS IMPACT

CM READERS AND CIOB MEMBERS SHARE THEIR STORIES ABOUT HOW THEY ARE HELPING TO KEEP THE CONSTRUCTION INDUSTRY WORKING DURING THE CORONAVIRUS LOCKDOWN



Technology such as videoconferencing is allowing construction professionals to stay connected

Although the coronavirus crisis is restricting work around the industry, many construction professionals are staying busy – working remotely or volunteering to help with key public services.

CM has been in touch with CIOB members and readers to find out how they are keeping their organisations running – using videoconferencing to keep in touch with colleagues and clients, processing building control work, teaching students remotely, or helping the NHS and critical public services in the battle against the coronavirus pandemic.

For some, the transition has been relatively straightforward. Sue Hanford, principal project manager, Surrey County Council, explains that the team she works in has been encouraged to work agilely for some time, using their laptops and mobiles to work “just about anywhere”.

She explains: “Now that we cannot attend meetings, we are using the Skype facility regularly, so there has been plenty of videoconferencing, and I was introduced to a further piece of software



Mark Beard
Chairman, Beard

“We have kept 90% of our sites open, taking extra safety measures”

“We have kept 90% of our sites open while following the Site Operating Procedures set out by the Construction Leadership Council. Additional safety measures including lengthening the working day and resequencing work to allow different workers to be on site at different times and minimise the need for contact.

“The safety of all those working for us, and of the general public, is

always our top priority. We are doing everything we can to ensure our sites are as safe as possible, and we will never put pressure on anybody to work on site when they should be self-isolating.

“We respect other firms’ decision to close sites, but the government has given the industry a clear steer that it wants construction work to continue where possible. We are putting in every possible measure to follow this steer and continue to operate as many sites as we can.

“When sites close, that results in a fall in demand for materials, and builders’ merchants shutting their doors. This can lead to a vicious circle with more sites being forced to shut.

“We are determined to do our bit to help turn the current vicious circle into a virtuous cycle.”



David Rowell
Senior building manager,
Willmott Dixon

“Our supply chain delivered over 300 masks to frontline services”

“We work on an extra care facility in Ashby-de-la-Zouch, Leicestershire, and we have sourced over 300 face masks in less than 24 hours to help our client EMH Care & Support deliver frontline services.

“I spoke with my colleagues at EMH Care & Support and found out they had run out of personal protection equipment (PPE) and were unable to get a confirmed delivery

date from central government for further supplies.

“Knowing the importance of the situation, I reached out to our supply chain partners to see how we could help. Through the thoughtfulness, generosity and quick response from our supply chain, we were able to deliver over 300 face masks by the afternoon of the following day.

“During these very difficult and challenging times, we continue to serve our customers by carrying out small acts of kindness. Together we can succeed and get through these unprecedented times.

“The Willmott Dixon Midlands team have also signed up for the NHS volunteering service, offering taxi service to those needing trips to food stores.”



**“An opportunity to rethink how we use technology”:
Aecom’s David Philp on why the lockdown could accelerate digital adoption, p40-41**

today – Teams. We had a team of six on the call as we were being trained to use Teams. It was good to be able to visually, as well as vocally, interact with a number of colleagues, as working from home can at times be quite solitary, particularly under the present circumstances.”

Others like Barry Cooper-Cooke, a lecturer at in the School of Design and the Built Environment at Curtin University, in Perth, Australia, find themselves having to learn new ways of doing things rapidly.

“We have switched all student studies to an online platform. There is no face-to-face delivery of lectures and tutorials. We are now forced to learn new digital platforms and apps that allow us to deliver content to students online. In the coming weeks, we also plan to hold webinar type group meetings. The university has been keeping us well informed and up to date on measures they are implementing on a day-to-day basis as the crisis unfolds,” he says.

For Duncan Hones, building control surveyor for East Cambridgeshire District Council, site visits have been suspended until further notice but

he can still do some work from home remotely. “Works that don’t need inspections can continue, or works carried out up to the point of inspection can be carried out and then wait for inspections to recommence for us to visit. One amazing thing about the construction industry is that we can always find a way,” he says.

And the lockdown has given rise to some interesting technological developments, with Kingdom Housing Association employing augmented reality (AR) technology to assist tenants with routine repairs without stepping food in their homes. Using a mobile phone app, workers can see an issue in real time using video technology and offer support and advice, and can even help show how to fix things by having their hand superimposed on the screen in the tenant’s home. ●

As the lockdown progresses, there are likely to be even more stories of clever innovations brought about by the necessity to limit the spread of Covid-19. Share your stories by emailing: construction-manager@atompublishing.co.uk.



Ken Smyth
President,
Heritage Building &
Consulting Services

“We limit operatives to three per property, at least 2m apart”

Ken Smyth has shifted his construction and conservation firm based in Halifax, in the Canadian province of Nova Scotia, to renovating vacant housing stock. He says: “As a family business, we are doing our best to keep some level of normality for our teams and their families during these uncertain times.

“Safety and the health of our teams are a priority and we are following government advice on sanitising, washing hands and social distancing.

“We limit the number of operatives to three people at any time and they must keep at least 2m away from each other. This has been a scheduling challenge, and jobs are taking a little longer.

“Before entering the property, we let each unit sit for three days at least after the tenant vacates, because we’re advised the virus can live on surfaces for up to three days.

“We then disinfect all surfaces, place wipes, soap, gloves and masks at the entrance and ensure that everyone entering the property has cleaned up, and has signed the declaration stating they don’t need to self-isolate or quarantine.

“Once work starts, property doors are kept closed, with access by appointment only.

“Suppliers leave materials outside, and we wait until the drivers leave before we go out, and wipe everything down before taking it in.”

How the CIOB is supporting members during the Covid-19 crisis

As CEO Caroline Gumble explained in her recent letter to members, the CIOB is “working differently” but is still “open for business”. Below, we set out the CIOB services that are available to support members during the coronavirus crisis, how they can access them, plus information on other useful resources

● **Customer services**

The CIOB customer services team is working remotely and is ready to help with any questions about membership. Contact them here: www.ciob.org/customer-services/contact-us.

dependent families of our members. CIOB student members are eligible from their second year of membership onwards. The fund offers confidential advice, financial assistance and wellbeing and mental health support.

● **CIOB Academy**

The CIOB Academy (www.ciobacademy.org) is continuing to run online courses as normal, which can be booked and accessed through the website. The Academy’s extensive CPD section (www.ciobacademy.org/cpd) includes hundreds of free learning packages and courses which can be accessed here.

● **Events and meetings**

All CIOB local hub events and meetings have been postponed until the end of April 2020. The CIOB will review the situation at that point and advise on any changes here: www.ciob.org/coronavirus-and-ciob. Some local events will be adapted so they can run online where possible.

● **CIOB Library**

The CIOB Library (www.ciob.org/library) is a free online service for members and member applicants and provides a vast resource on built environment topics.

● **Craft your future**

Those members who are working at home and have children to occupy could take look at the CIOB’s Craft Your Future Minecraft lessons (www.ciobmc.org). These are aimed at switching young minds on to the world of construction. More than 50 million young people play Minecraft and the CIOB’s free lessons can inspire the industry’s next generation.

● **CIOB Benevolent Fund**

All current and past members have access to the CIOB Benevolent Fund (www.ciobbenevolentfund.org.uk). The service is also accessible to the



Call for mandatory sprinklers in all blocks over 11m

CIOB PRESIDENT-ELECT MARK BEARD URGES GOVERNMENT TO EXTEND MEASURES

Contractor Beard has called for the government to extend new fire safety measures aimed at residential blocks over 11m, including mandatory sprinklers, to all high-rise buildings.

Housing secretary Robert Jenrick announced the measures at the start of April, but Beard chairman Mark Beard said he wanted to see the new safety standards go even further.

Beard, president-elect of the Chartered Institute of Building, said: "Safety of building occupants ought to be at the top of everyone's list when it comes to construction.

"In the wake of the Grenfell Tower disaster, the focus has rightly been on high-rise residential buildings. The new measures proposed by



Robert Jenrick: announced new measures in April

"The industry itself needs to take responsibility for ensuring these standards are rigorously applied in practice"

Mark Beard, Beard

the government go a long way to addressing the issues exposed by that calamity and I look forward to seeing them enacted.

"But all building occupants need to be safe and feel safe, regardless of use. The government has said it will look at extending the scope of safety standards during the passage of the relevant legislation. I would strongly welcome such a move, with initial focus on the highest risk buildings."

Beard called for a practical approach that had wider industry buy-in. He added: "The industry itself needs to take responsibility for ensuring these standards are rigorously applied in practice. This means getting it right first time, not waiting for enforcement action to be taken. At the end of the day all our reputations are at stake."

Last month, Jenrick also announced that the government's construction expert David Hancock has been appointed to review the progress of removing unsafe aluminium composite (ACM) cladding from buildings.

And the latest testing results for non-ACM cladding have been published, showing that none of the materials, including high-pressure laminate and timber cladding, behave in the same way as ACM.

But the government said that external wall systems on high-rise buildings using Class C or D HPL panels are unsafe "and should be removed as they do not comply with Building Regulations". ●

Government plans building control shake-up

The government has set out plans to shake up building control in a new document looking at reforming the building safety regulatory system.

The document, part of the government's response to the Building a Safer Future consultation, confirms that on residential buildings of more than 18m in height or more than six storeys, dutyholders will no longer be able to choose which building control body oversees the construction of refurbishment of buildings.

Instead, the new Building Safety Regulator will rely mainly on the support of local authority building control, complemented by approved inspectors where required.

Meanwhile, the government plans to beef up the way in which competence among building control professionals is assessed. The Building Safety Regulator will be responsible for oversight of the competence and performance of those professionals, with a "unified approach" for building control covering both local authority staff and approved inspectors. A single body will oversee public and private sector building control, either within the regulator itself, or in a body under the regulator's control.

The document said: "The professional structure would be designed to increase regulatory standards across the sector under a single robust set of standards for competence. It would enable greater collaboration and knowledge-sharing across a profession that is currently separated into private and public sector branches and establish clearer career paths – helping to address entry hurdles and retention issues to increase capacity. There will be a responsibility to promote building control competence and to deliver a strategy to improve this over time."

The legal framework for the building control profession is expected to be established through the Building Safety Bill, 2019-20, which has yet to progress through parliament.

Specifying Legal and Sustainable Timber

More than half of the world's population live in urban areas and by 2050, that figure is likely to hit 6.5 billion people. While cities cover less than 3% of the earth's surface, they account for 78% of carbon emissions, 60% of residential water use and 76% of wood used for industrial purposes.



So across the built environment, the pressure is increasing on all aspects of the construction industry and design communities to improve productivity, drive energy efficiency and in particular, source materials in a more sustainable and responsible way. While timber is increasingly being adopted as the material of choice to deliver low carbon, sustainable buildings, it is important that it is sourced from well managed forests. These are forests that meet internationally-recognised standards of legality and sustainability.

Sustainable Timber Supply

Credible forest certification systems such as the Programme for the Endorsement of Forest Certification (PEFC), provide a range of benefits that contribute to a wider sustainable built environment. PEFC is an international non-profit, non-governmental organisation dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification. It works by endorsing national forest certification systems and has recognised certification systems in 47 countries. Today over 750,000 forest owners manage more than 326 million hectares of forests – 62% of all certified forests – according to PEFC's strict Sustainability Benchmarks, making PEFC the world's largest forest and timber certification system.

PEFC-certified Timber

Timber is a renewable and readily available construction material and the potential that certified wood offers in re-shaping how cities are built cannot be underestimated. More and more building projects are now opting for PEFC-certified timber and both public authorities and private

companies are choosing wood as their material of choice. Only recently, the French government announced that from 2022, all new public buildings must be constructed using a minimum 50% wood or other sustainable materials.

Market Drivers for Certified Timber

PEFC-certified timber can help achieve Excellent and Outstanding BREEAM ratings and has huge energy efficiency, thermal and acoustic benefits. As a natural and organic material, wood is now widely recognised as providing a sense of 'wellness' and cleaner, healthier environments for building occupants.

Certified timber also is a central component of the Ska environmental performance standard

and PEFC-certified timber is accepted in other green building procurement schemes around the globe, including the US Green Building Council's LEED environmental assessment programme. These green building standards, together with responsible sourcing policies, are helping drive demand for certified timber.

Forestry operations, conducted in accordance with Sustainable Forest Management (SFM) practices, maintain and boost ecological, social, cultural and economic values of the area where the wood is harvested – many of these aspects are reflected in the UN's Sustainable Development Goals and their overarching drive to instil the concepts of a global circular economy to reduce our impact on natural resources.

Buying Legal & Sustainable Timber

Be confident that you are only sourcing legal and sustainable timber by specifying timber and wood products with full Chain of Custody. Acceptable claims under PEFC are **xx% PEFC Certified** and **100% PEFC Origin**. To help timber buyers, PEFC has produced a pocket-sized timber procurement and delivery guide that is available free of charge.

Email: info@pefc.co.uk stating quantity required.



For more information on PEFC visit: www.pefc.co.uk



Covid-19 slump: lessons from past recessions

As the Covid-19 outbreak slows construction activity, Turner & Townsend economist **Kristoffer Hudson** examines what can be learnt from past economic downturns



As the UK began to implement emergency measures and a national 'lockdown' to prevent the spread of coronavirus, construction saw the biggest drop in output for almost 11 years, according to the IHS Markit/CIPS UK Construction PMI.

The UK Construction Total Activity Index fell sharply from 52.6 in February to 39.3 in March, with works halting across many sites and new orders stalled in the first weeks of the lockdown. Along with weak performance in service and manufacturing industries, the March PMI data is another early indication that the Covid-19 crisis has caused the UK economy to contract in the first quarter of this year.

This is likely to extend into the next quarter with the Office of Budget Responsibility already warning that GDP could fall up to 35% between April and June.

Analysis of the past three UK recessions illustrates that the period of recovery is dependent on how deep a recession bites into the economy. The weaker the economy becomes, the longer it takes to recover.

There are some crumbs of comfort, however, that once restrictions are lifted there could be less lasting damage to growth than in prior recessions.

What are the implications for industry pricing?

Recessionary periods create deflation in pricing. Looking at the peak-to-trough movements in tender prices over the past three recessions, tender prices fall by an average of -16.9%. In terms of duration, this ranges from five quarters in 1980/81 to 12 quarters in 1990/91, before they hit their trough. To return to the peak seen in the tender price index prior to its fall, it takes around 24 quarters on average – or six years.

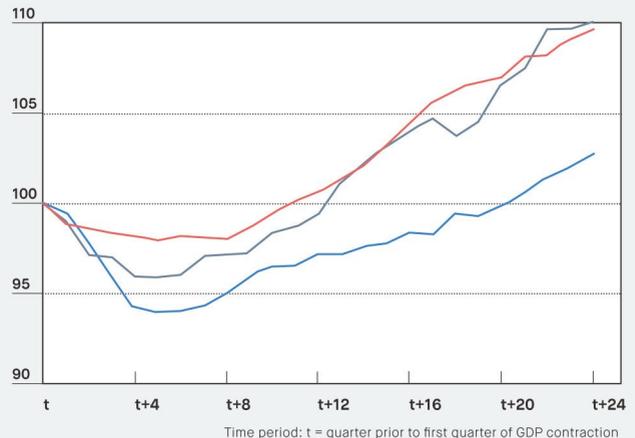
There will undoubtedly be downwards pressures on pricing due to weakened demand as clients wait for the pandemic to pass. Future tender pricing will be determined by a unique confluence of factors because there is a big difference in the circumstances we face today. The weaker pound, restarting of Brexit trade negotiations plus interruptions to domestic supplies and imports of construction materials and components from virus-hit countries could all result in cost spikes.

Added to that, accelerated insolvencies will diminish supply chain capacity and greater risk allowances could be factored into bids. As construction sites reopen, there may be fewer pressures from labour shortages, but productivity will certainly be impacted as contractors grapple with social distancing measures on sites.

7 Seven NHS Nightingale Hospitals are being set up across the country as temporary high dependency care units for patients with Covid-19 symptoms – in London, Manchester, Birmingham, Bristol, Harrogate, Washington and Exeter.

UK GDP performance during recessions

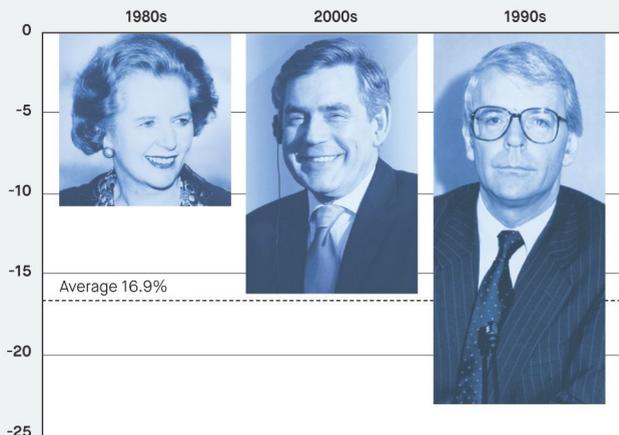
Index t=100 — 1990s (peak to trough change: -2%)
— 1980s (peak to trough change: -4.2%) — 2000s (peak to trough change: -6%)



SOURCE: OFFICE FOR NATIONAL STATISTICS

Tender price performance during recessions

Percentage change from peak to trough (%)



SOURCE: BUILDING COST INFORMATION SERVICE

News in numbers

237

Daily cost in £m to construction of the coronavirus lockdown through interruption of projects, according to the CEBR thinktank.

2

Value in £m of an emergency Covid-19 relief fund for small heritage construction businesses, set up by Historic England.

5

The amount, in £m, allocated by Taylor Wimpey to its 'Pay-it-Forward' scheme, which will make advance payments to self-employed subcontractors, to keep skilled trades in the industry.

71

Percentage of respondents to a Turner & Townsend survey that reported the construction materials and goods supply chain was continuing as normal in April.

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Opinion



CIOB mental health survey results, p22



Peter Whitmore
Morgan Sindall
Construction

A sense of community is key to construction's mental health

CREATING A SENSE OF COMMUNITY AND LOOKING OUT FOR EACH OTHER'S MENTAL HEALTH – PARTICULARLY DURING THE COVID-19 OUTBREAK – IS CRUCIAL TO CONSTRUCTION WORKERS' WELLBEING, SAYS **PETER WHITMORE**

Covid-19 will only exacerbate construction's struggle with mental health which, as the CIOB survey results on p22 show, is a major industry problem. Building is the deadliest profession in the UK – but it's not onsite accidents that are killing us. Over 450 of our construction industry colleagues took their own lives in 2016, three times the national average for men.

We're an industry staffed by people used to working under pressure and we struggle to admit vulnerability or accept that we might not be able to solve what's bothering us on our own.

Over the last few years, Morgan Sindall Construction has been on a real journey with mental health as a key priority and the steps we've taken are now ingrained in our approach across our business and our key supply chain partners.

Many of our teams on site are young men, often working away from home. This lack of family and community support, coupled with a highly pressured working environment, can be toxic. So a big part of our commitment to our teams' mental health is to be the community they need.

We recognised early that good intentions are not enough; people need training to respond confidently and consistently to colleagues in distress, recognise mental health warning signs early, and guide people in crisis to the help they need.

Twenty-four people across our offices in the eastern counties have now been trained as Mental Health First Aid officers and we continue to build on this.

In one instance, we had a young man on site who was experiencing severe depression after being put on the wrong medication. Our mental health first aiders were able to respond to early warning signs and support him in getting the right medication and care.

He returned to work a changed man – able to continue to be a great husband and father to his young family and a valued colleague. Experiences like this have really shown us the importance of investing in training for our team; it is literally lifesaving.

Habitual changes have also taken place in the way we speak to our people in every interaction – from induction to appraisals. Our inductions

are very different now than they may have been 10 years ago; we welcome rather than induct, and work consciously to ensure everyone who sets foot on our sites feels included and valued.

Our entire senior management team has also had mental health first aid training, and our focus is on the individual's development in the context of their wider personal experience. This enables richer conversations, which build deeper levels of trust, and our senior team are equipped to work through personal or professional issues team members may face, in an open and safe space.

Building positivity and resilience

Mindfulness training in partnership with the mental health charity MIND across our offices has also helped build positivity and resilience and we encourage people to practice meditation and mindfulness.

Technology plays a huge role in enabling our teams to feel connected across sites. Virtual meetings via Microsoft Teams provide valuable face time and connect people even when they are working remotely. Morgan Sindall Group also operates a 24/7 free helpline for anyone in the business in need of support.

We know from experience that almost everyone suffering wants to share, they often just need someone to start the conversation. A company-wide commitment to mental health means that now our most vulnerable team members can have a potentially life-changing conversation with someone who wants to go the distance with them and is trained to help them get the support they need. ●

Peter Whitmore is managing director of Morgan Sindall Construction East.





Graham Harle
Gleeds

Could the coronavirus crisis herald a new era of collaboration?

ONCE THE CORONAVIRUS PANDEMIC IS OVER, CAN WE GAIN ANY POSITIVES OUT OF SUCH A CATASTROPHIC SITUATION? ASKS **GRAHAM HARLE**

As an industry, we imagined that the most we would have to worry about over Easter would be the state of the Brexit negotiations or decrying the latest chancellor’s budget announcement, not a new threat to the worldwide economy and, indeed, to human survival.

With lives still being lost at an alarming rate and no significant data [at the time of writing] to reliably indicate that the tide is indeed turning, it seems somewhat crass to raise the issue of how it might impact upon business practices in the long term. While there is no doubt that, for all those operating in the built environment this virus poses a real threat to both life and livelihood, perhaps there are opportunities emerging, too.

Countries are working together to identify prevention and control mechanisms, sharing resources and information like never before. By utilising technology to promote data sharing and by finding ways to ensure huge swathes of the workforce are able to maintain, and in many cases accelerate, productivity remotely it has been possible to mobilise the supply chain from the top down and deliver complex projects at record speed.

Digital tools like BIM have shown their worth – allowing businesses to come together to create plans and technical drawings for

new facilities within just a couple of days, while construction and fit-out phases have been expedited and coordinated in real-time via online platforms. Teams can meet virtually to discuss digital plans which can be examined in minute detail.

Smart city infrastructure

I am hopeful that we, as an industry, retain some of the flexibility which has been forced upon us and embrace chances to work together for mutual gain going forward. Looking ahead to how the global landscape may evolve off the back of this catastrophe, it seems inevitable that the demand for smart cities will grow further still. If we consider South Korea, for example, we can see how tech has been instrumental in limiting the human cost of Covid-19 and it is likely that other nations will seek to install this kind of infrastructure in tomorrow’s cities.

I would like to think that businesses and politicians alike will not only learn from the mistakes made during these unprecedented times, but also consider what has been achieved and acknowledge the very real benefits of encouraging continued cooperation in the long term. ●

Graham Harle is chief executive officer of Gleeds.

Construction needed intensive care before the coronavirus



The coronavirus has exposed construction’s failed business model. Contractors have been underpinned by low

expenditure and minimal investment for decades and the business model must change – urgently.

Fundamental action is needed in offices and on sites to address health and safety failings: long and demanding hours to meet deadlines are underpinned by long commutes or working away from home; intense site working for self-employed and agency staff put people at risk; responsibility is inexorably pushed along supply chains to the self-employed construction worker.

Witness the danger construction workers were put into as Covid-19 worsened – compounding their already vulnerable employment status as low-paid workers, on insecure contracts, working long hours, under stress and physical fatigue.

Over recent years, safety statistics have plateaued in developed countries, the UK included, and the main hindrance seems to be organisational behaviours associated with the main contractor business model. Health and safety is driven by legal compliance rather than care for the workforce.

Outside construction, companies have strategic templates for international operations – they develop customised and contextualised health and safety plans, focusing on employee and workforce care, rather than compliance – and we should learn from them.

Current research, funded by UK Research and Innovation through the Transforming Construction Network Plus, is bringing technology together to change the construction business model. The aim is to join up existing technologies, such as Fitbits, tablets or even CCTV and drones, to triangulate real-time data. This could help share and integrate safety learning in construction, improving safety and ultimately productivity.

In a post Covid-19 economy, society needs a healthy and innovative construction sector, so let’s reconsider the business model and put construction into intensive care. We might even achieve a reasonable rate of return along the way. Hedley Smyth is professor of project enterprises at the Bartlett School of Construction and Project Management, UCL.



Caroline Gumble
CIOB

Making the best of a bad situation

FINDING SAFE WAYS FOR CONSTRUCTION WORK TO RESTART WILL BE CRUCIAL TO SUPPORTING THE ECONOMY AS CORONAVIRUS RESTRICTIONS ARE LIFTED, SAYS **CAROLINE GUMBLE**



“Our sector innovates and adapts... in getting used to new ways of working, we must capture what we’re learning and continue working differently”

At the time of writing, the UK is in lockdown. By the time you read this, it may be that restrictions are being lifted here as they are being lifted elsewhere in the world. There’s no doubt the coronavirus has not only changed the way we’re living and working on a short-term basis but is likely to change the way many of us work for many years to come. I’d like to focus on the changes for the better and what we can learn.

For a long time, the CIOB, our sister professional bodies and other sector organisations have talked about the need to be more collaborative; the pandemic has created a requirement for this to happen in a timely and effective fashion. I’m proud to be part of this period in which we have put our brands and egos to one side for the sake of our

industry – long may that continue. It’s also been a reminder that in times of uncertainty, as leaders we have to make tough decisions and communicate them, clearly, concisely and at the right time.

As a society and as an industry we will not be the same when this is over. We’re adapting to working differently quite successfully (my steep learning curve with Skype notwithstanding!). But in getting used to new ways of working, we must capture what we’re learning and then continue working differently, where it’s working for people, in the future. I suspect there are many office-based construction roles that can be done at home and this period is likely to have proved that such flexibility is viable and should be more widely accepted.

Our sector innovates and adapts. I have no doubt that those qualities will be called upon when the sector goes back to work. It’s important to remember that process won’t just be about individuals getting used to going back to work, it’s about restarting work safely on site and all the many logistical tasks that involves. It’s also about playing the important part we have in supporting the economy. It’s a big task and we are more than up to the challenge.

Once again, my call to members is to share your stories. What are you doing differently and what would you like to continue doing differently when the current crisis is over? Most of our members will be aware that I’m on Twitter and LinkedIn and that the CIOB is active on both those platforms and on Facebook. Do reach out and tell us what you might be doing differently after this is over. ●

Caroline Gumble is CEO of the CIOB.

Online learning in challenging times

Educational institutions must think carefully when going digital, says **Tharindu Liyanagunawardena**



Social distancing implemented by countries across the world has posed a great challenge to educational institutions worldwide, causing them to cancel lectures and graduation ceremonies.

In adapting to the situation, most institutions have adopted online learning. For many traditional institutions this is the first time that they are trying to use technology on such a large scale.

In their hurry to adopt technology, there is always the danger of institutions rushing into using it without proper appraisal – accessibility, security and privacy concerns, for example – or adequate user training.

There is also the possibility of excluding groups of users who are not able to engage with the technologies because they lack the digital literacy required, because of disabilities, or because they lack broadband connectivity.

I hope these points are considered by leaders at institutions currently going digital.

In my role as a learning technology researcher and chair of the Online Learning Research Centre at University College of Estate Management (UCEM), I scan the horizon, assess educational technology and consider how we can use it to enhance our students’ experience. We are always thinking about the practical aspects and accessibility of the technology we appraise.

As the leading provider of supported online education for the built environment, UCEM is better placed than most to face this difficult situation. As a result, UCEM is advising other institutions in order that the sector can keep educating students to the highest possible standards.

Tharindu Liyanagunawardena is a learning technology researcher and chair of the Online Learning Research Centre at UCEM.

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 Construction courts deliver first coronavirus-related ruling, p44

 **Feedback**

A selection of readers' comments about news and issues in the industry from www.constructionmanagermagazine.com

Interserve delivers the NHS Nightingale hospital in Birmingham



 **CM 01/04**
CLC call for emergency construction help

Harry Escott
As a director of a micro-business I cannot get any government help, so pushing for this is very welcome.

I work as a freelance chartered construction manager so can't currently work. I am forced to use my savings while we self-isolate and do not qualify for any grants or other help as I am not self-employed but work through my company.

IR35 changes are delayed by a year now, so one minute we were going to be treated as self-employed but now we aren't. We don't get any other help either.

Any government help specifically for the industry will be good, especially as it seems the banks are doing exactly what they did in 2008, which is holding on to our taxpayers' cash and not lending it to the companies that need it.

P Bonnel
I am myself a site manager. Unfortunately, I was laid off NOT because there was no work. I managed to get a three-month contract. I was laid off because the majority of our subcontractors lived up north and could not find any digs, since all the hotels were closed. Let's hope everything gets back to normal.

 **CM 09/04**
Interserve completes Birmingham Nightingale hospital

R Wilson
I do hope the Queen recognises the outstanding service the building trade and this company, in particular, delivered to the nation during this crisis, I am amazed at what has been done. Thank you. Some achievement.

Mel Prichard
Many congratulations to all the people involved in this critical facility for the Midlands. It truly shows what the workforce are capable of in the UK.

Martin Blake
The Chinese were feted for their speed in constructing new hospitals in Wuhan but I think the efforts in the UK demonstrate a degree of lateral thinking and excellent project management.

The buildings will revert to their former purpose whenever this pandemic is resolved and I'm sure the materials will be recycled. Well done all.

Brian Wood
Good to see the construction industry getting recognition for delivery, especially as earlier focus seemed to be on the armed forces delivering (though credit to them too, of course). I hope lessons will be learned in terms of working together effectively and engendering trust. Well done all.

 **CM 06/04**
Coronavirus 'costing construction £237m a day'

Tom Parsons
As a domestic building contractor we are facing a very unsure time ahead of us with an order book that has fallen off a cliff. Our clients have postponed – if not cancelled – projects with a value of £1.5m.

With the works largely facilitated by subcontractors, this crisis has a huge reach for the 'everyday' person that works in the sector.

The government grants to other, less affected, sectors have left me as a business owner feeling a little deflated.

I feel the industry as a whole needs some real support that falls in line with real needs for large and small companies alike. I hope we can all stay healthy to allow us to continue once the crisis is over.

Raymond Lee
How many lives is that financial loss saving each day?

 **CM 06/04**
HSE crackdown on sites not following Covid-19 guidelines

Steve
Very interesting when the HSE have said their inspectors are staying at home to keep themselves safe.

I can't see how they will do this. When you actually need them to do something to keep workers safe, they run and hide.

The government has said construction is essential to keep the economy going. The HSE should show some backbone and get out on the sites alongside the guys on the front line, making sure they are working and operating safely.

Pete Tomlinson
Ah well, nothing will happen there then.

Provide your own feedback on latest industry issues by posting comments online at www.constructionmanagermagazine.com or by emailing the editor at construction-manager@atompublishing.co.uk

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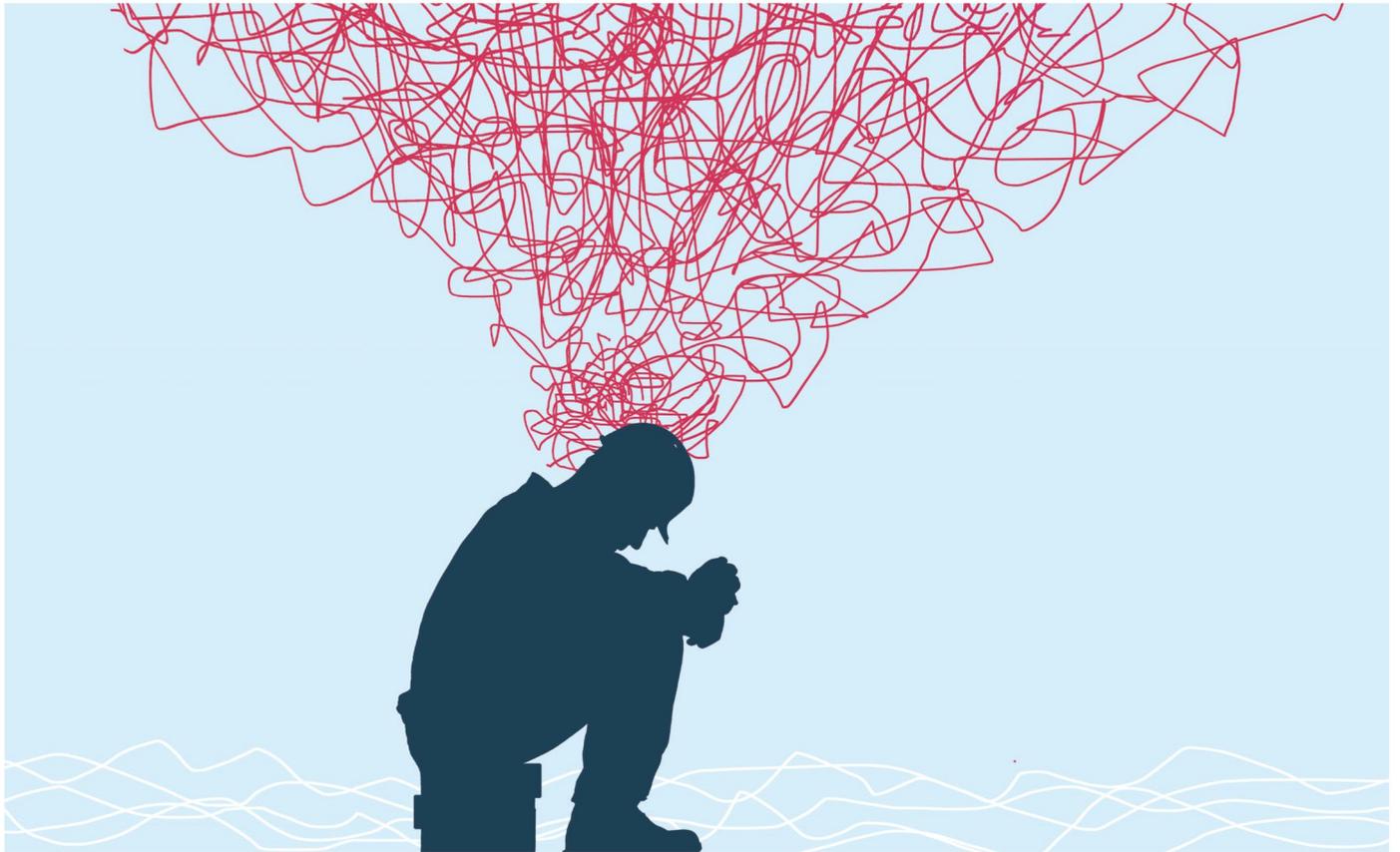
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 **Analysis**

CORONAVIRUS ADDS TO CONSTRUCTION'S MENTAL HEALTH PRESSURES

AHEAD OF MENTAL HEALTH AWARENESS WEEK, A CIOB STUDY WARNS THAT MEASURES TO SAFEGUARD WORKERS WILL BE CRITICAL IN REBUILDING THE INDUSTRY AFTER THE COVID-19 LOCKDOWN. **NEIL GERRARD** REPORTS

Mental health in construction was already a key concern for the construction industry before the coronavirus crisis started. As the industry grapples with the fallout from the pandemic, the issue could become absolutely critical, new research conducted by the CIOB shows.

The CIOB's report, *Understanding Mental Health in the Built Environment*, launched to coincide with Mental Health Awareness Week (18-24 May), has uncovered some stark findings. According to the survey, which received 2,081 responses from construction workers of all levels around the world, 26% of construction workers had experienced suicidal thoughts and 97% experienced stress at some point over the past year.

“We know that the coronavirus outbreak is affecting the way many of us live, work and play, and in recent days it has become extremely difficult for individuals who are doing their best in extreme circumstances”
Charles Egbu, CIOB

Having been conducted in August 2019, the CIOB’s survey takes no account of coronavirus. But CIOB president Professor Charles Egbu, pro-vice chancellor at the University of East London, cautions that the Covid-19 pandemic could easily exacerbate construction’s “silent mental health epidemic”.

He says: “We know that the coronavirus outbreak is affecting the way many of us live, work, and play, and in recent days it has become extremely difficult for individuals who are doing their best in extreme circumstances.”

Egbu urges those whose mental health problems have been compounded by coronavirus to seek help. “We encourage those who are experiencing anxiety, stress or other mental health issues to use resources such as the Construction Industry Helpline, Anxiety UK, and the CIOB Benevolent Fund during these difficult times,” he says.

Industry pressures

Mental health issues are not specific to construction, with one in four people experiencing poor mental health each year – ranging from common problems like depression and anxiety to less common conditions like schizophrenia and bipolar disorder.

But the CIOB’s report asserts that several features of the industry, including limited-term contracts, long hours, long commutes, time away from family, and the pressure to complete

on time and within budget are just some of the contributing factors to poor mental health within construction.

Egbu explains that the CIOB decided to launch its report for these reasons: “In recent years, mental health and wellbeing has gained more attention in the media, leading to increased public and business awareness. For construction, this issue runs through the industry, affecting decision-making from the boardroom through to site. The CIOB’s *Understanding Mental Health in the Built Environment* report helps shed light into the current state of mental health within the industry.”

Stress, in particular, appears to pervade the industry at all levels. Egbu notes that 97% of respondents said they had experienced “some degree” of stress over the past year. Some 90% of manual workers said they experience moderate to extreme levels of stress due to poor communication within their organisation and 64% said they also experienced stress due to bullying. Meanwhile 65% of senior staff find inadequate staffing causes moderate to extreme levels of stress.

How mental health affects manual workers

71%
found lack of adequate toileting stressful

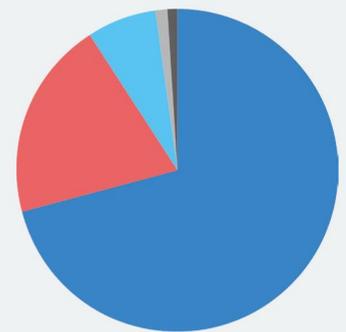
80%
found noise levels stressful

79%
found inadequate temperature control stressful

66%
found the uncertainty of working location stressful

% Mental health training received in last three years

- 0 (no event attended) 71%
- 1 event/course 20%
- 2-3 events/courses 7%
- 4-5 events/courses 1%
- More than 5 events/courses 1%



SOURCE: RESPONDENTS TO CIOB MENTAL HEALTH SURVEY 2019

The nature of construction work means that tight deadlines are likely to cause stress, and the report found that 94% experienced stress due to time pressures.

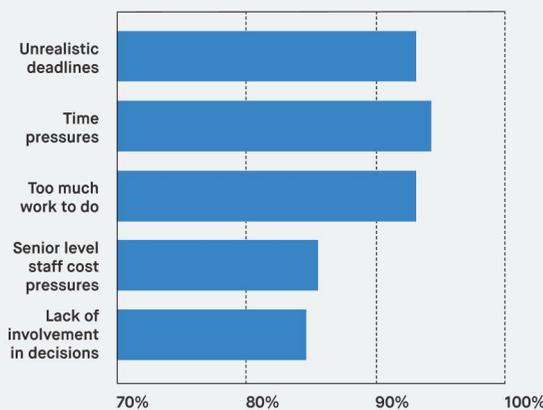
Physical factors involved in construction work can also manifest themselves in mental health problems. A total of 80% of respondents to the CIOB’s survey said noise levels were stressful, while 79% found inadequate temperature control difficult to deal with.

Some 71% of manual workers report experiencing stress as a result of inadequate toilet facilities, while 66% struggled to deal with the uncertainty of their working location.

The good news is that the industry is waking up to how important it is to maintain good mental health among its workforce.

The CIOB study found that 38% of respondents said their organisation offered helplines, while just over a third (35%) said their organisation offered mental health first aiders. But only 5% offered fatigue management plans and less than a third (31%) ▶

What causes stress in construction?



SOURCE: RESPONDENTS TO CIOB MENTAL HEALTH SURVEY 2019

How construction organisations manage mental health

44%

said their organisation had no policy in place for mental health

65%

said their organisation had no mental health first aiders

71%

had received no mental health training over the past three years

95%

said their organisation had no fatigue management plans

said their organisation would treat a mental health issue seriously.

Many companies have not yet even developed a policy for mental health, with 56% of respondents claiming that their organisation had one. Meanwhile, fewer than three in 10 have received any mental health training over the past three years (see pie chart, p23).

The CIOB report describes the issue of mental health in construction as a “silent epidemic”. Of course, that terminology is now inextricably linked to the coronavirus crisis, which could well overshadow concerns about mental health in construction.

Tackling the issue

The CIOB has come up with a series of recommendations to tackle the issue of mental health, directed at the industry itself, as well as government, and professional bodies (see box).

In an age where the coronavirus has effected huge changes in every aspect of people’s lives, as well as placing huge burdens on their mental health,

“We all need to work together to address the silent epidemic that is mental ill health”

Charles Egbu, CIOB

such measures are likely to be even more important than ever.

But, Egbu concludes, the situation could lead to change for the better when it comes to construction workers’ mental health.

He says: “The crisis has forced many of those in construction to work from home and to take a more flexible approach, and it has pushed the industry to communicate more and work collaboratively to meet shared goals. This report explores the support out there for those who need it, and that we all need to work together to address the silent epidemic that is mental ill health, both during the coronavirus outbreak and after.” ●

The CIOB’s recommendations

How organisations can tackle mental health in construction

Industry

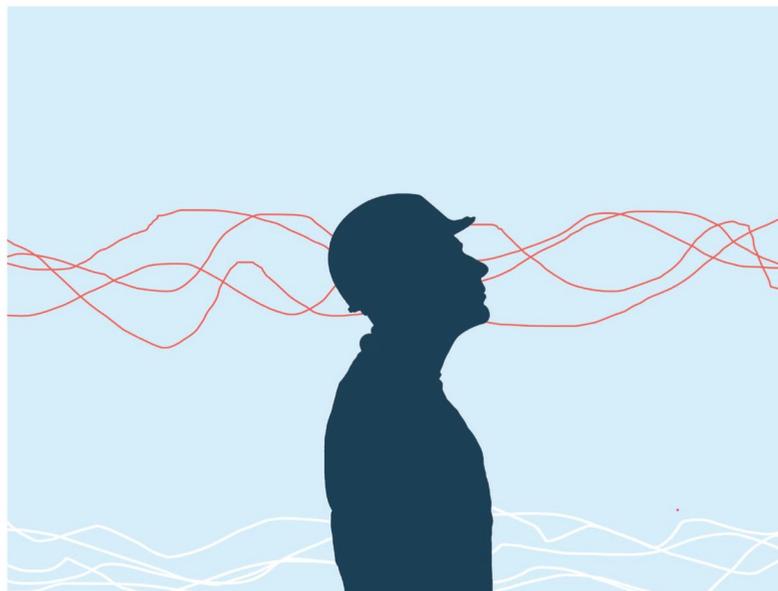
- Produce, communicate and implement a mental health at work plan.
- Develop mental health awareness among employees.
- Encourage a culture of openness around mental health and the support available for all employees.
- Train managers and supervisors in mental health awareness and promote effective people management.
- Routinely monitor employee mental health and wellbeing as well as identify risks that could contribute to poor mental health.
- Ensure employees have access to good quality mental health support and training, such as counselling skills or mental health awareness training (BACP).
- Offer stress reduction approaches to work, such as mindfulness, to support those experiencing stress.
- Recommend a more targeted mental health approach for individual workers experiencing mixed anxiety and depression, such as talking therapy treatment.
- Larger organisations should look at how they can support their supply chain and smaller organisations who work on projects with them.

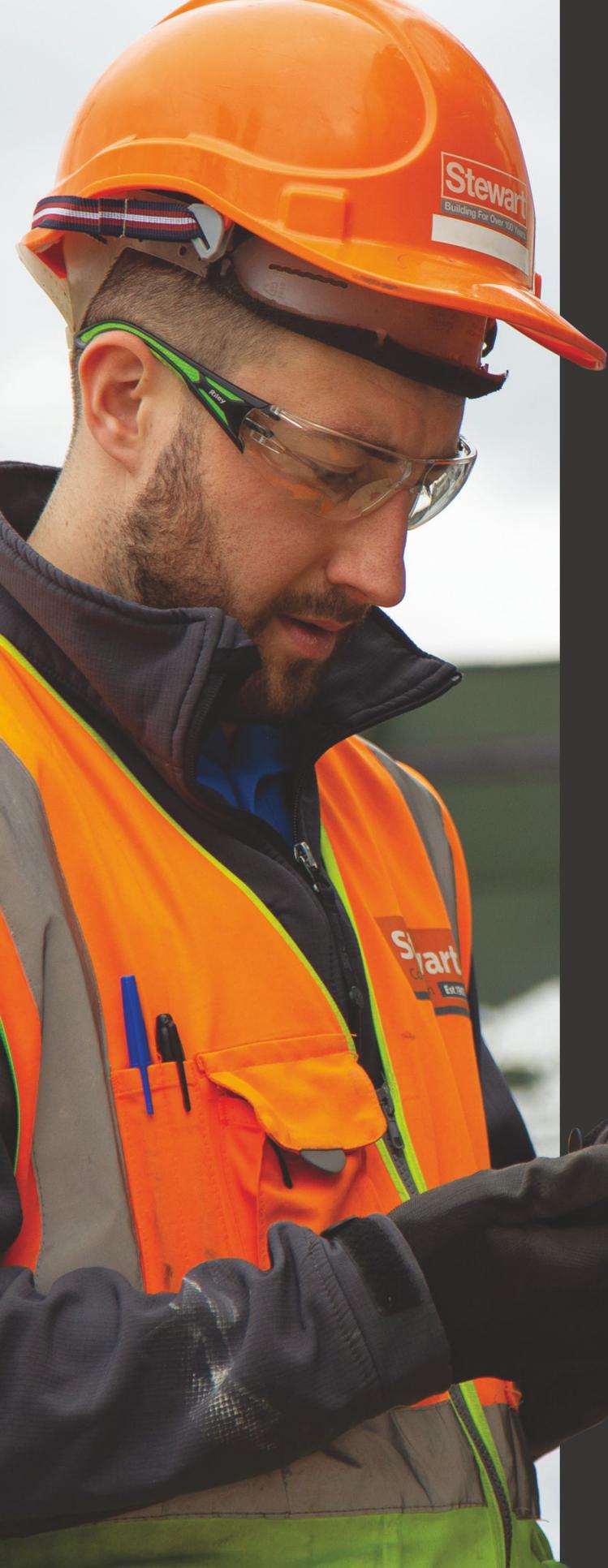
Government

- Create a government-led root and branch review of health and safety legislation with a view to strengthening protection and promotion of mental health.
- Act on calls from campaigners, businesses and the general public to amend the Health and Safety (First Aid) Regulations 1981 so they are explicit that First Aid obligations relate to both mental and physical health.
- Implement the recommendations from the *Thriving at Work: A review of mental health and employers* report.
- Work with employers to ensure they support the mental wellbeing of their staff and implement the recommendations.
- Continue to fund the Time to Change campaign at its current level to help end the stigma and discrimination often experienced by people with mental health problems.
- Appoint the first minister for suicide prevention.

Professional bodies

- Develop mental health awareness among members.
- Provide guidance for members to help them manage their own mental health.





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MORGAN SINDALL TAKES THE STAGE IN CAMBRIDGE

ON THE REDEVELOPMENT OF THE WORLD-FAMOUS CAMBRIDGE UNION SOCIETY BUILDING, MORGAN SINDALL CONSTRUCTION HAS COMBINED HERITAGE RESTORATION TECHNIQUES WITH MODERN OFFSITE CONSTRUCTION. **STEPHEN COUSINS** REPORTS

Use of CLT panels on the student accommodation has reduced disruption in the tight city-centre location

Few buildings have a political and cultural history as rich as the Cambridge Union Society (CUS). For over 150 years, it has hosted the likes of Winston Churchill, Margaret Thatcher, Bill Gates and the current Dalai Lama in its famous debating chamber. The Footlights venue in its basement was where Stephen Fry, Emma Thompson, Sue Perkins and David Mitchell honed their comedic skills.

Opened in 1866, adapted and enlarged over the decades to meet the Union's evolving needs, the Grade II-listed building is now undergoing a major redevelopment, including the repair and reinstatement of key Victorian features.

 **Technical story for CM?**
Email will.m@atompublishing.co.uk

“The temporary works people have really ‘earned their corn’ on this job in coming up with a system that both holds up the building and allows adequate space to build up the new facade”

Nigel Arnold,
Morgan Sindall Construction

The revamp will give the Footlights venue a refit, extend the existing bar, and replace a section of facade, added in the 1930s, with a replica of the Victorian original. The adjoining development will house a new graduate accommodation block for 45 students at Trinity College with a restaurant on the ground floor.

In construction terms, the project is a play of two acts as main contractor Morgan Sindall Construction juggles offsite manufacturing, including prefabricated concrete and a cross-laminated timber (CLT) superstructure on the student accommodation, plus traditional techniques and materials, including stone, handmade brick, timber joinery and leadwork on the CUS building.

Just-in-time deliveries and CLT panelisation on the student block have helped reduce disruption and noise at the city-centre site, on the corner of Round Church Street and Park Street, a major junction with live bus routes.

An intricate facade retention scheme for the Union building, designed to support the facade while a lower section was demolished and reinstated, had to squeeze within a narrow footprint and incorporate a scaffold for bricklayers to work from (see box, p30).

Nigel Arnold, contracts manager at Morgan Sindall Construction, says: “The temporary works people have really ‘earned their corn’ on this job in coming up with a system that both holds up the building and allows adequate space for workers to build up the new facade.” ▶



Left and below:
The CLT sections that form the stairwell in the Trinity student accommodation building are craned into place

Cambridge Union Society site redevelopment

Value (CUS refurbishment):
£4.3m

Value (Trinity College student accommodation):
£10m

Project team:

Main contractor (both projects):
Morgan Sindall Construction

Project manager (both): Bidwells

Architect (both): Bland Brown + Cole

Structural engineer (CUS): Mott MacDonald

Structural engineer (Trinity): Smith and Wallwork

M&E (CUS): Cunnington Clark

M&E (Trinity): Integral D&B

Groundworks and concrete frame (Trinity): MJS

Brickwork (both): Proctor

Windows and curtain walling (Trinity): Elliston, Steady and Hawes

CLT frame (Trinity): KLH

Structural steel frame (CUS link): Crofton Engineering

Programme:

Start date: December 2018

Completion dates: CUS, December 2020
Trinity, January 2021



“Temporary propping for the piling had to be installed in different stages, to match the sequencing of three months of planned archaeological work”

**Panayiotis Papastavrou,
Smith and Wallwork**

Funding frustrations

The redevelopment project follows years of uncertainty over what form it should take and how it should be paid for. The Union, which is a self-funded charity, had explored various options for investment without success until it agreed a deal allowing Trinity College to lease the adjacent plot of land and build a £10m accommodation block.

A joint development plan was approved by Cambridge City Council in 2017, which later had to be redesigned to bring it within the CUS budget of £4.3m. Approval for the revised redevelopment was granted in January 2018.

Andrew Lightfoot, associate at architect Bland Brown + Cole (BB+C), says: “The Union see this as an initial phase of work needed to make right the elements that are slowly failing, to increase the frontage and renovate the bar area to bring in money that should enable future developments and improvements to the building.”

Morgan Sindall Construction is constructing the student accommodation as a design and build, and the CUS building through a traditional form of contract. BB+C is architect on both, working for Morgan Sindall Construction on the Trinity scheme and for the client on the Union building. There are two structural engineers: Smith and Wallwork detailing the Trinity Project and Mott MacDonald on the CUS project.

The two sides of the redevelopment are separate, but share a party wall and a common foundation extends below



A steel-framed link building will provide a new entrance and vertical circulation (CGI, top, and during construction, above)

Trinity and a steel-framed ‘link building’, which provides a new main entrance into the Union on Round Church Street and vertical circulation, including a lift.

Creating the foundation required close communication to ensure both sides completed simultaneously, ready for follow-on work to begin. The complexity of sheet piling used to form the basements and related temporary propping made this a particular challenge.

“Traffic from buses meant the loading situation was quite onerous and sheet piling had to be installed around the perimeter,” says Panayiotis Papastavrou, senior structural engineer at Smith and Wallwork, responsible for the Trinity building. “Temporary propping for the piling had to be installed in different stages to match the sequencing of three

months of planned archaeological work, with archaeologists digging on both sides of the basement at the same time.”

The CUS building was designed by prolific English architect Alfred Waterhouse, the man behind Manchester Town Hall and the Natural History Museum. Modifications included a major expansion in 1886 to create space now occupied by the bar and library, and several art deco elements in the 1930s, most notably a section of facade running from basement to first floor level along the frontage on Round Church Street.

Most of Cambridge escaped the Second World War with little damage, but a bomb landed on the building causing significant damage to the Library, where some older books still display shrapnel wounds. ▶



DIGITAL TRANSFORMATION – OVERCOMING CULTURAL AND BEHAVIOURAL BARRIERS



Digital Transformation is a huge opportunity for the AEC industry that has struggled for decades with low productivity and low profitability. Fully embedding digital tools into business as usual offers a way out of this trap. However, many companies are struggling to make the most of existing products and few are on top of the possibilities created by emerging technologies.

What can engineering and construction firms do to accelerate adoption?

Focus on digital leadership

The industry is not making the most of the technology available because of unawareness about what it can do. At the same time, when technology is deployed it can fail to deliver its potential because of a lack of fit with existing processes and ways of working – or its effectiveness is undermined by the existence of out of date legacy IT systems.

Chief technology officers or chief digital officers are an increasing presence in engineering and construction firms. This trend does point to the industry acknowledging that digital transformation is both an organisational change issue and a technology issue. Now is the time for more organisations to consider if they have the personnel in place to deliver digital leadership.

What can be done at the industry level?

Use technology to develop new business models

We have already seen that E&C firms typically struggle with low margins. This inevitably reduces the appetite to invest in technology and the human capabilities needed to exploit them.

Digital transformation does point to a way out of this trap. Digital tools combined with increased volumes of data mean consultants and contractors know more about the assets they design and build than ever before. This insight can be the basis for new business models in which firms are rewarded for the value they deliver to their clients, rather than the inputs they put into projects.

Establish industry standards and improve interoperability

Volumes of data are generated in different formats via a multiplicity of incompatible systems. This is as a barrier to unlocking the benefits of digital transformation. One size will never fit all but establishing industry standards and improving interoperability would be a big step forward. If industry players can agree to a basic framework, opportunities to develop scalable products and services could be huge.

Read the full report created in collaboration with the Institution of Civil Engineers for more insights.

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“I have never seen a facade support as intense as this. We had to open up and survey multiple layers in the CUS to ensure the props wouldn’t clash with the rest of the structure”

**Nigel Arnold,
Morgan Sindall Construction**

The art deco facade was poorly conceived and executed by today’s standards, so the client proposed to replace it with something more in keeping with the original and with the location in a conservation area. “Over the years, the render had blown, the Crittall windows were pinned back because they were rattling around and the whole facade was getting to the point where it was becoming unsafe,” says Arnold.

Hidden structure

The designers pored over the original plans, kept in the V&A museum in London, to develop appropriate details for the masonry, timber windows and other heritage features. Subsequent site investigations revealed hidden elements not included in drawings. The external render concealed an array of steelwork and fabric in varying conditions.

Council planners wanted the CUS and Trinity College buildings to resonate with each other, so the external facade of the student block will also feature stone and brick but detailed in a more contemporary way: pared back with fewer profiles in the stonework and deeper reveals. Skilled craftsmen using traditional construction materials, such as solid masonry and handmade bricks are working across both projects.

The outer skin of the student accommodation will conceal a distinctly 21st century structure comprising multiple elements of in-situ concrete frame, up to first floor level, and a CLT superstructure rising to the fourth floor.

The groundworks contractor, MJS Construction, joined the project early and proposed that the ground and first floor slabs were cast using a Bamtec reinforcement system, by Hy-Ten.

Papastavrou comments: “The large rolls of prefabricated reinforcement provided an enormous advantage in terms of programme and labour. In addition, precast concrete stairs lifted in by crane helped minimise time on site.”

The superstructure will comprise 500 cu m of engineered timber, delivered in 11 truckloads by supplier KLH and installed by a team of six. A self-erecting crane distributes the panels around site.

This approach helped minimise noise and vibration. CLT is well suited to student accommodation, in terms of strength and achievable spans, says Papastavrou. “Clients like the idea of using the material because time on site is precious.”

The timber structure is now virtually complete, whereas on the CUS side, bricklayers have only reached about eight courses high, which demonstrates how modern construction has managed to innovate despite its reputation for being slow to adapt.

With the frame up, work has begun installing aluminum windows and curtain walling elements. M&E first fix and screeding in the basement are underway.

Next door, the Union building exterior will get a makeover, including repairs to timber windows and slates and a thorough cleanup, ready to welcome the next generation of budding British politicians, actors and comedic talent. ●



Heritage trades work behind the scaffold

Tricky temporary works

The facade retention system is a complex engineering design on a narrow footprint



A compact solution avoids encroaching on the road

To reinstate the Cambridge Union Society (CUS) building’s masonry facade from ground to first floor level, Morgan Sindall Construction worked with structural engineer Mott MacDonald to devise an elaborate facade retention system, comprising a network of galvanised steel internal and external props, plus 18 mild steel needle beams, each weighing around 140kg, that thread through the existing masonry wall at first floor level.

The introduction of the painted needle beams has made it possible to remove the 1930s steelwork, brickwork, blockwork and Crittall windows at the lower levels of the building, and then to install replica Victorian brick, stone and timber windows.

The solution had to be compact, in order to fit within the 1.5m-wide footpath that runs alongside

the building without encroaching on the road, and to integrate with a highly bespoke access scaffold that enables tradespeople to carry out repairs and restoration on the facade.

“I have never seen a facade support as intense as this,” says Nigel Arnold, contracts manager at Morgan Sindall Construction. “We had to open up and survey multiple layers within the CUS to ensure the props wouldn’t clash with the rest of the structure.”

He explains: “Foundations underlying the structure had to be designed to reduce loads from the props to an acceptable level and take into account the poor ground conditions. Maintaining access and egress for labour and materials through the propping and the scaffold is an ongoing issue because it is such a tight space.”

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Construction Equipment

THE PLANT SECTOR'S ECO REVOLUTION

CONSTRUCTION EQUIPMENT IS GETTING GREENER, DRIVEN BY EMISSIONS REGULATIONS AND ADVANCING TECHNOLOGY. **CM** LOOKS AT THE PLANT SECTOR'S ENVIRONMENTAL INNOVATIONS



Polluting emissions from plant and machinery have long been one of the less appealing features of construction sites – but they are falling fast as manufacturers clean up their engines.

This has been largely driven by the Euro emissions standards, introduced in a series of increasingly stringent stages since 1999, and, more recently, the introduction of low emissions zones (LEZs) in major cities like London. Meanwhile, leading clients are also raising the emissions bar, with HS2 requiring that all plant on its sites must be powered by the cleanest available Euro VI stage engines.

Plant manufacturers have responded with technological innovation. Engine redesign has slashed emissions by 97% since 1999, through the introduction of particulate filters and more efficiency. Electric machines are now being produced by most major OEMs (original equipment manufacturers), while hydrogen fuel cells are also being explored.

“Since the European standards came in, 70% of OEM R&D has been spent on looking at emissions,” says Rob Oliver, CEO of the Construction Equipment

Electric mini excavators are suited to indoor or urban sites. JCB says its 19C-1E can work a full day's eight-hour shift on a single charge



Kubota unveiled its prototype electric mini excavator last year in Kyoto, Japan

“In urban environments in particular, contractors are understandably very keen to operate zero-emissions equipment whenever possible”

Tim Burnhope, JCB

Association (CEA), which represents OEMs. “Now the focus is on electric.”

These machines are still a relatively low proportion of all construction equipment, but Oliver says there has been “impressive progress” made by OEMs with electric technology over the last five years.

“The challenges are the same as for cars; there isn’t the supporting infrastructure for charging yet,” he notes. “It’s even harder for construction as sites by their nature are remote and temporary.”

For this reason, lithium-ion battery power has been largely limited to smaller machines to date. These are becoming common for work indoors, in confined spaces and on inner-city sites, particularly in LEZs. With little noise during operation, they are popular for night-time utilities work.

“In urban environments in particular, contractors are understandably very keen to operate zero emissions equipment whenever possible,” says JCB’s chief innovation officer, Tim Burnhope.

“With increasing urbanisation, machines are operating more closely to people as well as digging underground, indoors, near hospitals and in food production environments. As a result, there is a new zero emissions sector emerging. It is for this reason we have put ourselves at the forefront of alternative power technologies and developed our first ever electric machines.”

JCB started production of its first fully electric mini excavator last

summer. The manufacturer says the 19C-1E can work for a full day’s eight-hour shift on a single charge and offers the same performance as a conventional 1.9-tonne mini excavator. It is five times quieter than its diesel counterpart and its battery pack can be fully charged in under two hours.

JCB estimates charging costs will be 50% cheaper than for a conventional diesel machine and servicing costs will be 70% lower.

Other OEMs are also entering the mini electric excavator market.

In January, Kubota unveiled its prototype last year in Kyoto, Japan, which it says can operate with the equivalent output of existing diesel engines. Meanwhile Volvo will shortly launch its ECR25 Electric compact ▶

The new Volvo ECR25 electric compact excavator



Identifying eco-compliant construction equipment

How do construction managers check machines on their sites conform to emissions rules?



JCB has signed up to the CESAR compliance scheme

With emissions regulations getting tougher, the challenge for contractors is identifying compliant machinery when it arrives onsite. But the CEA is getting to grips with this issue.

“We had received feedback from manufacturers and hirers that their machines were receiving much more scrutiny at the site gate,” Oliver explains.

“Main contractors wanted to know that machines on their sites did actually conform to the European emissions standards stages, as they were supposed to. Because if they do not comply, the main contractors could face enforcement action.”

“However, surveillance and policing has been a challenge. The enforcement responsibility for LEZs sits with planning, so the planning officers have to supervise. The Greater London Authority felt that only 28% of sites in London were compliant with its LEZ. This was partly due to planning departments lacking the resources to inspect construction

equipment and having to scabble around in the mud when they did go to sites.”

The CEA’s solution was to extend its CESAR (Construction and Agricultural Equipment Security and Registration) marking scheme, which has existed for 10 years to help combat plant theft, to explain the emissions stage of each machine.

The CESAR Emissions Compliance Verification (ECV) was launched at the Plantworx exhibition in 2019, following discussions with HS2 and the Energy Saving Trust.

“From a practical perspective, the ECV labels are fixed to the machine and have QR codes that can be scanned using an app by planning inspectors,” explains Oliver.

With JCB and Hitachi already using the scheme on all new machines, the uptake is set to further accelerate as major clients including HS2 encourage use of the ECV labels. The CEA is also planning to promote and explain the system to local authorities.

88%

The Kobelco 22-tonne hybrid excavator's efficient diesel engine, combined with electric slew, battery-powered generator motor and smart control unit, cuts exhaust emissions by 88%



“The issue of carbon and fuel consumption in the plant sector has to be viewed far more holistically”

Chris Matthew, Flannery

excavator. The manufacturer says the machine can be operated for an eight-hour working day and charge to 80% in less than one hour using a fast-charger.

Where bigger machines are required, which need to work long shifts away from charging points, OEMs offer hybrid solutions.

Lynch Plant Hire supplied the Kobelco 22-tonne SK210LC-10 hybrid excavator to the Costain Skanska JV on the HS2 Euston project, where it has been working alongside JCB's 19C-1E.

The machine's efficient diesel engine, combined with electric slew, battery-powered generator motor and smart control unit, reduces fuel consumption by 20% and cuts exhaust emissions by 88%, the hirer says.

It has also improved productivity by 8%, as measured by load volume per hour.

Another hybrid machine is the CAT D6XE dozer, which has been supplied by Flannery Plant Hire to Balfour Beatty's M4 Smart Motorway project team for trial. The machine has an electric drive, which results in 30% lower fuel consumption while delivering increased pushing power.

Alternative fuel technology

Then there is alternative fuel technology. Kubota is developing an alternative fuel model mini excavator using LPG (liquid petrol gas), with a launch planned for this year and mass production in 2021

And Hyundai's construction equipment business recently announced a partnership with its car manufacturing sister to start the development of hydrogen-fuelled excavators, with a target date for mass distribution set for 2023.

Meanwhile, environmental regulation looks like it will only get tighter.

Lynch Plant Hire supplied the Kobelco 22-tonne hybrid excavator to the Costain Skanska JV on the HS2 Euston project

Before the Covid-19 crisis, chancellor Rishi Sunak announced an end to the red diesel subsidy, which would add an extra 47p per litre to fuel used by construction machines.

However, his plan has been put back to 2022 following lobbying from the plant sector, which feels that – even with recent eco advances – there is still a role for diesel.

“For large-scale excavators, electric power is quite simply too costly both financially and environmentally,” says JCB's Burnhope. “It would cost £160,000 for a lithium-ion battery large enough to power a 20-tonne excavator for an eight-hour shift – not to mention the vast amount of carbon dioxide produced in the battery's manufacturing process.”

Oliver points out: “There are some specialist machines, such as cranes which do very heavy lifting, which are not used very often, so does the economics work out to convert these machines to electric?”

“We should get away from the idea that diesel is all bad, particularly

L What security should contractors have for shut-down sites? p43

“We should get away from the idea that diesel is all bad, particularly considering the dramatic reduction in emissions achieved over the past two decades”

Rob Oliver, CEA



considering the dramatic reduction in emissions that has been achieved over the past two decades.”

And some in the plant sector feel low-carbon machinery is only part of construction’s environmental equation.

“The issue of carbon and fuel consumption in the plant sector has to be viewed far more holistically,” believes Chris Matthew, strategy manager for Flannery.

“Yes, we need more fuel-efficient and alternative energy powered equipment, packed full of technology to make it more productive, but we need to consider how to tackle the whole site fuel cost. We also need to look at how we can reduce the carbon impact of people travelling to the site itself.” ●

Flannery Plant Hire has supplied a CAT D6XE hybrid dozer to Balfour Beatty’s M4 Smart Motorway project



Plant theft warning for closed sites

Construction sites shut down due to the coronavirus crisis have been targeted by plant thieves

Plant and tool thefts from construction sites have risen sharply since the Covid-19 lockdown came into force, the construction equipment sector is warning.

The CEA, which owns the plant marking and registration scheme CESAR, says that the closure of sites, with most personnel including onsite security leaving as a result of coronavirus social distancing measures, has allowed criminal gangs to exploit the situation.

CM understands that industry chiefs including Build UK are increasingly worried about the problem.

One exasperated contractor told CM: “There’s so much going on at the moment, and so many challenges to the business because of coronavirus – to have to start worrying about valuable plant and tools going missing from our sites is the last thing we need to contend with.”

The CEA has called on the police to be vigilant where construction plant and equipment has been left on site, and warned that any transport movements for construction plant at unusual times of day, or if a vehicle is moving numerous items of plant belonging to different companies could be a sign of thefts.

The association, which is part of pan-industry anti-theft organisation Combined Industries Theft Solutions (CITS), is also advising owners of construction plant to ensure that tracking companies are alerted to the location of their plant.

“Move plant away from sites” Ian Elliott, group head of security, Clancy Docwra and CITS vice-chairman, says: “Firms should be aiming at removing the majority of tools and plant away from site compounds.

“Where traditionally companies would perhaps have used plant containers – during these challenging times – companies are advised to



A stolen Caterpillar dozer that was later recovered in Gloucester

leave these almost empty and remove plant and tools to a head office, where possible, or placing the tools and small kit, within brick or concrete buildings well out of sight of the criminals.

“For sites where a company can’t physically remove machines, it should be placed within containers and the containers then blocked with vehicles or large concrete blocks.”

DC Chris Piggott, rural vehicle crime intelligence officer, NaVCIS (National Vehicle Crime Intelligence Service), adds: “Many construction and agricultural vehicles now have so-called smart keys containing electronic information needed to start the machine, so it’s vital that keys are removed from machines and stored securely in a remote location.

“Other measures include the CESAR marking and registration system, immobilisers and tracking devices which are effective in deterring thieves and aiding police recoveries.”

The CEA is still progressing agreements with the police and key insurers to support a new Agricultural Construction Equipment (ACE) national police unit, which will be the successor for the original Plant & Agricultural National Intelligence Unit (PANIU).

The new unit was originally due to launch on 1 April 2020 but this has now been postponed until 1 October 2020.



HS2 – THE CATALYST FOR UPSKILLING THE PLANT SECTOR

WEST MIDLANDS MAYOR ANDY STREET RECENTLY LAUNCHED A NEW PLANT SKILLS EVENT NEXT TO BIRMINGHAM'S CURZON STREET STATION, AS THE SECTOR LOOKS TO ATTRACT NEW RECRUITS THROUGH DIGITAL TECH. **PETER HADDOCK** EXPLAINS

Even before it was given the official go-ahead, HS2 was being heralded as a catalyst for growing skills across the construction industry.

One sector set for a particular boost is the plant and equipment sector. In February, just days before the government greenlight for HS2, the West Midlands Combined Authority's mayor Andy Street launched a specialist skills

event, Plant Construction Careers Live, at the Millennium Point in Birmingham, opposite the site of Curzon Street Station, terminus of the new railway.

CM caught up with Street at the event, which also coincided with National Apprenticeships Week.

"With work already underway for this part of the project, the economic argument for HS2 really adds up," the

Above: McAuliffe is working on the vast Curzon Street earthworks project

"The first phase from London to Birmingham is a shovel-ready project, so now what we need to do is begin to recruit and train people in anger"

Andy Street, West Midlands mayor

West Midlands mayor reasons. "Most importantly, the first phase from London to Birmingham is a shovel-ready project, so what we now need to do is begin to recruit and train people in anger.

"This is even more important for the plant sector, as the demographic will see a lot of skilled operators retiring before the project is even finished. This is why we need to attract young people and individuals that want to retrain into the industry. What is important about events like this is that we have a great opportunity to bring the plant and construction sectors to people that perhaps have a traditional image of the sector that is not quite right.

Street continues: "Plant is a very high-tech sector embracing the latest in technology in its equipment with 3D machine control, augmented reality and more, whilst also helping to reduce emissions. So people joining the industry have the opportunity to get a skill that will see them through their working life. What is also clear is the rapid pace of digital adoption, which is what we want to support across the wider economy."

One of the companies busy on the vast earthworks project for Curzon Street station is specialist contractor McAuliffe. The company says its work on HS2 has helped it recruit apprentices from less traditional backgrounds, including one temporary administrator who is now on a civil engineering apprenticeship supported by Wolverhampton University.

"This industry is all about having the right attitude – it is not just about



Simulator training replicates site conditions

skills – and this is why we look to create apprenticeships around the people we employ, to develop a true career path for them,” director Steve McAuliffe explains.

“We are also fortunate to run our own recycling facilities, so we can get plant apprentices training safely on real equipment in these yards, ensuring they learn the practical skills we need.”

The West Midlands Combined Authority is also supporting the sector through City of Wolverhampton College, where it has provided funding via its ‘Construction Gateway’ programme for a plant operator training facility. This will in turn support a new construction plant apprenticeship, which will enable new or existing staff to combine working for an employer with studying for their plant qualifications at college.

Filling the skills gap

Michael Dixon, head of faculty, explains what the college will now be capable of delivering.

“With the new plant training ground set to be complete for the autumn, in addition to our new apprenticeship programme, we will be able to offer a full training and upskilling package for the wider community,” he says. “This will allow us to train and accredit unemployed people, to fill the plant operator labour market and wider industry skills gap.

“In addition to practical training on machines like the new JCB electric mini-digger provided to us by A-Plant, we will also be able to offer maintenance training and softer employability skills. And thanks to our connections with the industry, we will guarantee unemployed people an interview at the end of the process, which is fantastic.”

Where colleges like Wolverhampton are tackling the shortage of staff, others are tackling the wider skills conundrum of upskilling existing operators on newer technologies like 3D machine control.



Machine control training in the cab

to think outside the box to develop and support new accredited training.

At Weston College in Weston-Super-Mare, plant hirer Plantforce has supplied its latest excavators and simulators to the college, to help deliver training. Together with machine control providers like Leica Geosystems, the machines and simulators are kitted out with the latest in 3D machine control.

Practically this means the college can put new and existing operators on simulators to prove competency, before walking 50m to the training ground. Here they put the simulator training into completing tasks ‘in the dirt’.

The college also recently launched a ‘dynamic training programme’ aimed at driving an up to 15% increase in fuel efficiency for plant operators.

Sam Mercer, Plantforce operations director, explains: “What we have recognised is that, even though as an industry we have access to some really exciting technologies like 3D machine control, without operators knowing how to use these properly, we are missing the carbon reduction potential they can deliver.

“With this in mind, we have worked with the college, and simulation specialist Tenstar, to develop a programme using simulators to help plant operators and the sites they work on become more eco-savvy. It brings together many new equipment innovations from hybrid excavators to advanced battery-operated mini diggers, matching them with other technologies to reduce a project’s fuel consumption and impact on the environment.

“The key focus on this classroom-based training programme is teaching operators best fuel-efficient practices on operating different types of machinery. This includes familiarisation with work modes on new machines, how to move the machine around the site, best practices for setting up on the dig, how to load trucks and how to increase productivity.”

He adds: “Importantly for those participating, we have also created a new ‘eco’ card standard that can be used to identify and recognise advanced operators, capable of operating to consistently high standards of efficiency.” ●

Mayor Andy Street tries out a JCB electric mini-digger at Plant Construction Careers Live



Conexpo visitors use tablets and a scale model to understand the digital twin on the Florida project



DIGITAL TWINS ON EARTHWORKS PROJECTS

A 'CONNECTED SITE' CONCEPT UNVEILED AT AMERICA'S BIGGEST CONSTRUCTION EVENT COULD BECOME THE NEW MODEL FOR INFRASTRUCTURE SCHEMES. **PETER HADDOCK** EXPLAINS

Below: Accessing the digital model using the in-cab display
Bottom: Sensors on the kit connect with GPS systems



In March this year at **Conexpo 2020**, America's showcase event for the construction equipment sector in Las Vegas, the infrastructure site of the future was on display.

Hexagon, the parent company of surveying and machine control technology specialist Leica Geosystems, was displaying its 'connected site' concept. Digital tools on site, including tablets used by construction managers and machine control technology, connect with 3D models. Meanwhile augmented reality shows the actual worksite overlay and the levels achieved in the 'as-built' model.

Data capture and management

As work progresses, data is captured, structured and managed to create what is essentially a digital twin of a large civil engineering project.

Vice-president Holger Pietzsch says his company has been following a 'real world' project, the earthworks for a residential development in Florida, carried out by contractor Gardner.

"We worked with the Gardner team to provide all of the equipment needed to create a 'digital twin' of the site," says Pietzsch. "We then followed the project from the planning stage, right the way through its earthworks construction phases, which included validation and the delivery of its 'as-built' final earthworks model to the client.

"We then took this information and mapped it against the digital workflows involved in its creation, so we could demonstrate how data was managed throughout the project."

At Conexpo, Hexagon created a scale model of the Florida site, plus tablets which visitors could use to access and understand the digital twin. "This allowed us to prove how technology can simplify the delivery of a project and that different sensor-led devices can work together," says Pietzsch.

In the UK, the construction sector has been making steady strides towards the model unveiled by Hexagon at Conexpo.

"The level of adoption with connected assets is much further ahead of the US and the learning curve is sharper," says Neil Williams, heavy construction director for Leica Geosystems.

"This adoption is also accelerating since Highways England recently has mandated the use of 3D machine control on all its projects and HS2 is looking closely at the connected site model.

"On projects like Hinkley C, data are making a productivity difference. For the construction manager, comes the ability to access information from any connected location and even to drive around the site and see progress against the model on a connected tablet.

"This level of connectivity allows the individual to monitor different parts of a project, to determine progress against plan, and ensure every machine is working to the most up to date model, reducing errors and the reworks associated with them.

"For earthworks, this approach works not only for the big projects, it can work for all sites."

Maintenance benefits

The digital twin offers numerous benefits for infrastructure projects. Data insights will allow maintenance to be planned and executed more effectively, such as repair of potholes using 3D as-built model data. Utility strikes will be a thing of the past. Lessons will be learnt and taken from one similar site to the next, supporting faster delivery.

But as Williams says: "A connected site is only as good as the connectivity available and the data that it depends on. So, what we now need to do is make sure data is correctly captured, validated and inputted into models much more swiftly and accurately." ●

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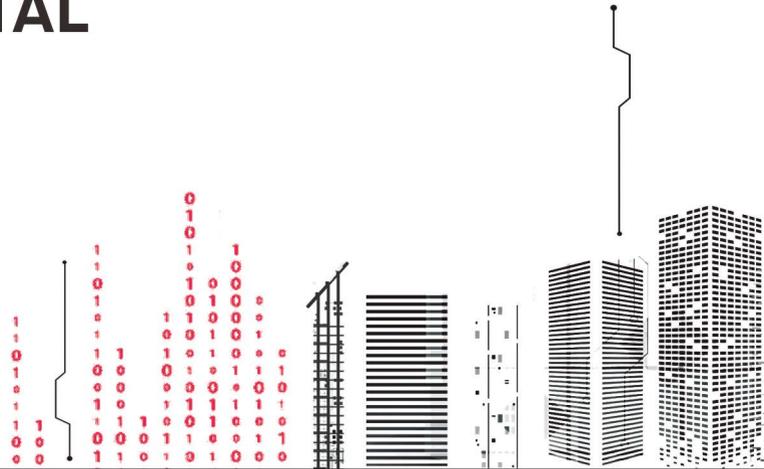




BIM & Digital

WILL COVID-19 ACCELERATE CONSTRUCTION'S DIGITAL TRANSFORMATION?

WITH MANY INDUSTRY PROFESSIONALS FORCED TO WORK REMOTELY, IS NOW THE PERFECT TIME FOR CONSTRUCTION TO GET UP TO SPEED WITH ALL THINGS BIM AND DIGITAL? **CM** FINDS OUT IF THE CORONAVIRUS WILL CHANGE THE WAY WE WORK FOREVER



David Philp
Global BIM/MIC
consultancy director,
Aecom

“An opportunity to rethink how we use technology and innovate”

The coronavirus pandemic is forcing us to strive for more innovative and rapid solutions. From increased home working needs, maximising performance of our healthcare estates and ultimately how we can recover from the looming economic challenges, we need to usher in new ways of working.

This crisis will be an opportunity for us to rethink construction priorities, how we can better use technology and innovate in the use of joined-up data to support immediate societal needs and the creation of a more resilient built environment.

In these testing times we cannot afford to waste this crisis – innovation and new ways of thinking are the priority and will help both businesses and society survive and accelerate recovery.

Digital has already helped us collaborate but perhaps the pandemic will help us make better use of these tools to ‘hyper-collaborate’ virtually and share information more freely to help us cope and recover.

Social distancing will undoubtedly spark technological innovation and we will think up new ways to congregate online and better communicate via our digital channels.



Garry Fannon
Technology director,
Turner & Townsend

“Early digital adopters will be reaping the rewards”

Our technology team have all been set up to work from home for some time and the early adopters will reap the rewards from the coronavirus lockdown.

Work with clients on their visions and the next steps they need to take to get there is carrying as normal via videoconferencing. Design teams are able to continue working – creating a fully designed digital model that can be constructed to an excellent quality standard when work is able to begin on site.

This could also be an opportunity for offsite manufacturers, where projects are delayed. Projects where design has begun would need to go back to first principles and require some redesign work. Clients with projects at a less advanced stage might think modularising will accelerate the programme.

The situation will help understanding of cloud technology, and also test how well the cloud works, as we’re not used to so many people accessing it at once. There are also security questions about home working – we need to educate people and show them how to make home routers more secure.

But overall, the enforced lockdown could show the industry how we can use digital technology to be much more efficient and productive.



Mark Boyle
Global design director,
Robert Bird

“Our digital processes lend themselves to remote working”

Our staff are well used to collaborating and working with their counterparts in other countries via videoconference and screen-sharing technology – 95% of our work is office based and can be done remotely.

So it was a relatively easy transition from office to home working once we initially got the systems working and hardware distributed. Hardware was especially important for CAD technicians who benefit from larger multiple screens.

We have been bringing in more digital processes into our design approach which also lend themselves to remote working. Early indications are the current crisis is speeding up the rate of adaption of these more efficient processes.

We are having to find ways of communicating and working with clients and collaborators who have different technology to us or who are not as familiar with remote working techniques, but this is no doubt a journey all businesses are on and we are confident it will not be a significant barrier to continued working together.



Andrew Gamblen
Digital manager,
Willmott Dixon

“People will become more comfortable collaborating remotely”

The effect of Covid-19 and social distancing is going to have a long-lasting effect on both the construction sector and the UK as a whole. There has been a huge increase in the use of technology and software that allows individuals and teams to communicate and collaborate remotely.

While this technology has been around for a while, and because we are in a position where we have to use it to keep working, people are starting to become a lot more comfortable with it and this is building up simple routines that will have a lasting effect.

It won't be long until these simple routines are augmented with further digital software and techniques that will give even greater momentum to adoption of digital construction across the industry. I don't know what things will be like by the end of the epidemic, but I do know we definitely won't be working in the same way as we were before.



Richard Saxon CBE
Chairman of JCT,
client adviser at
Deploy BIM Strategies

“‘Wartime scenario’ will push the digital agenda”

The Covid-19 crisis is looking very like a war scenario. Organisations are sending out messages saying they will play their part through staff working from home. It's Keep Calm and Carry On again.

Technology has always developed rapidly in wartime. The Second World War saw the birth of computing, radar, jet aircraft and nuclear power. Now we have a design and construction industry in lockdown, starting to rely on tools which only a few firms have used so far.

Companies with multiple offices or overseas projects have long been able to share work down the line with colleagues and associate firms. Now cloud-based teamwork applications allow staff to work from home or on the move with full access to their firm's common data environment.

The leaders are showing the way after stress-testing remote working arrangements. The rest will follow faster than they otherwise would have, pushing tech adoption down the supply chain. The pressure to roll out superfast broadband and 5G will be immense.



The need for human connection is not being ignored either. Social media apps allow for virtual co-working, so that you can see your colleagues and they you. Online meetings are well supported now and soon we will use virtual site visit technology as normal.

Assuming we get on top of testing for the virus, site work will be aided by augmented reality headsets and BIM caves, which support better briefing and error-free execution. Offsite construction will also advance as it can provide safer working conditions.

By the time a vaccine is available, a year or more of forced advance in technology use is likely to have passed. News of what others are doing will spread through networks and webinars. Things will not go back to where they were before: productivity will have improved; flexible working will have become normal; whole-life thinking will have advanced.



Legal



“It is important to note that sites must remain safe, so inspections or checking of sites may be necessary. Full health and safety risk assessments should be carried out”

Occupiers’ Liability Act of 1984. However, it is now established in statute. Therefore, every site must be secured and safe. Walkways should be clear and the usual tenets of ‘good housekeeping’ ought to be observed.

Even what might be regarded as ‘trespassers’ must be protected from harm. Additionally, the ‘standard of care’ – what might be expected in terms of protection, varies according to situation.

Children, for example, might attract a much higher standard of care, due to them being unable to read or understand risks, than adults. Simply erecting warning signs, and locking gates, may not be enough to discharge a duty of care to many classes of ‘unwanted visitor’.

CDM Regulations 2015

Added to the general duty, there is a specific duty to secure sites from the public and make them safe. This comes from the Construction Design and Management Regulations of 2015. These include the statement:

“Where necessary in the interests of health and safety, a construction site must, so far as is reasonably practicable, and in accordance with the level of risk posed, comply with either or both of the following: have its perimeter identified by suitable signs and be arranged so that its extent is readily identifiable; or be fenced off.”

Health and Safety at Work Act

The Health and Safety at Work Act also covers more than just employees. It has a duty upon employers to ensure that those not in its employment, including visitors and the public, are safe.



Joanna Lewis
Beale & Co

What security should contractors have for shut-down sites?

JOANNA LEWIS EXAMINES THE SECURITY MEASURES THAT CONSTRUCTION FIRMS SHOULD TAKE ON SITES SUSPENDED DUE TO THE CORONAVIRUS

Although no construction site has been required by law to shut down because of the coronavirus crisis, in the week following the ‘lockdown’, many sites started to close in response to public pressure and safety concerns.

There are many considerations to be noted in the event of such a shutdown, not least those of security and insurance cover. The first question a responsible contractor should ask

is: “Am I complying with the law”? Followed by: “Is my site safe to leave?” Let’s look at the primary sources of regulation and legislation which cover site safety and security.

Occupiers’ Liability Act

Every occupier – a person with control of land or property – has a duty of care with regard to the safety of persons on that property. This general principle existed before the



 **Coronavirus legal hub:**
CM is providing Covid-19 legal updates
and answers to reader questions online at
constructionmanagermagazine.com/legal

How will coronavirus impact construction contracts?



What are the contractual provisions that contractors could rely on for projects impacted by the coronavirus outbreak? **Elizabeth Vago** explains how to apply them



The exact wording of the act is ‘lawyerly’, but the relevant paragraph for site security is as follows:

“It shall be the duty of each person who has, to any extent, control of premises... to take such measures as it is reasonable for a person in his position to take to ensure, so far as is reasonably practicable, that the premises, all means of access thereto or egress therefrom available for use by persons using the premises or, as the case may be, provided for use there, is or are safe and without risks to health.”

In other words, any person must be safe from harm.

This is an ongoing responsibility. It is important to note that sites must remain safe, so inspections or checking of sites may be necessary. Full health and safety risk assessments including fire, water ingress, electrical and mechanical installations should be carried out.

24-hour security staff

Often, 24-hour security staff are employed to ensure ‘unwanted visitors’ are not put at risk when a site is in operation or closed. This may be a provision of the contract, or it may be to fulfil the requirements of an insurance policy or other specification document.

It seems unlikely that where a site closed for the night requires overnight security staff, such security would become unnecessary in the event of a long-term closure. In fact, it may be that the need for security increases. ● **Joanna Lewis is a partner in the construction, engineering and infrastructure team at law firm Beale & Co.**

The coronavirus crisis has already had a severe impact on the construction industry, despite attempts to keep sites open by following public health guidelines. But delays may be inevitable to projects due to material shortages, restrictions on movement, shutdown of sites or illness of workers.

Construction companies will have to examine their contracts to see what provisions there are for this scenario.

What first steps should you take?

- Look at the operational provisions in your contract.
- Provide an updated or revised programme if there is disruption and flag to the client that the programme may not be met.
- Give early warnings of delays or cost overruns if the contract requires this. You could lose your entitlement to an extension of time or additional costs if you don't do this promptly.
- Provide regular progress reports if the contract requires it and clearly set out all impacts that the disease has had on the project.

Can you make a claim?

None of the standard form contracts (eg, JCT and NEC3/4) refer expressly to epidemics or spread of diseases. So, contractors may have to rely on other clauses, such as:

- suspension;
- force majeure and prevention;
- change in law;
- instruction by the engineer;
- delay in delivery of materials;
- variation;

- delay as a result of the engineer's flexible working arrangements; or
- special circumstances.

If you have an unamended NEC contract, coronavirus may be a compensation event. However, it will depend on the form of NEC contract. Under an unamended JCT design and build contract, clause 2.26.14 identifies force majeure as a relevant event which entitles the contractor to an extension of time and an event which entitles either party to terminate the construction contract under clause 8.11.1, but it is not a relevant matter and gives no entitlement to losses and expenses.

Is it force majeure?

Look at the definition of force majeure in the contract. Is the event covered? If so, make sure that you give the right notice to your client with all of the necessary contractually required information.

When looking at whether or not an event amounts to a force majeure, the following questions should be asked:

- Are you relying on the outbreak of the virus itself or something relating to the virus (such as governmental restrictions)?

- Does the event meet the relevant contractual test?

Consider the consequences of invoking a force majeure clause because typically, the clause will specify that neither party is liable for a failure to perform its contractual obligations where that failure

is caused by the force majeure event and parties are often required to mitigate the effect of the force majeure event. Failure to mitigate may undermine a party's ability to rely on the force majeure clause.

What about frustration or prevention?

What if the effects of the coronavirus itself or the effects of government action have prevented or frustrated the performance of your contract, or made performance impossible? If you can neither make a claim nor classify coronavirus as an event of force majeure, frustration might release you from further performance.

However, it is difficult to establish frustration. It cannot be used if you already have a force majeure clause, there is an alternative method of performance available, it has become too expensive to perform the contract or because a supplier has let you down.

Frustration is a more radical remedy than force majeure because rather than suspending performance, frustration can lead to the contract being automatically discharged by operation of law.

Remember that if you are planning to assert force majeure or frustration, then if it turns out to be incorrect, this could amount to a breach (or anticipatory breach) of the contract and the injured party could claim damages or be entitled to terminate the contract.

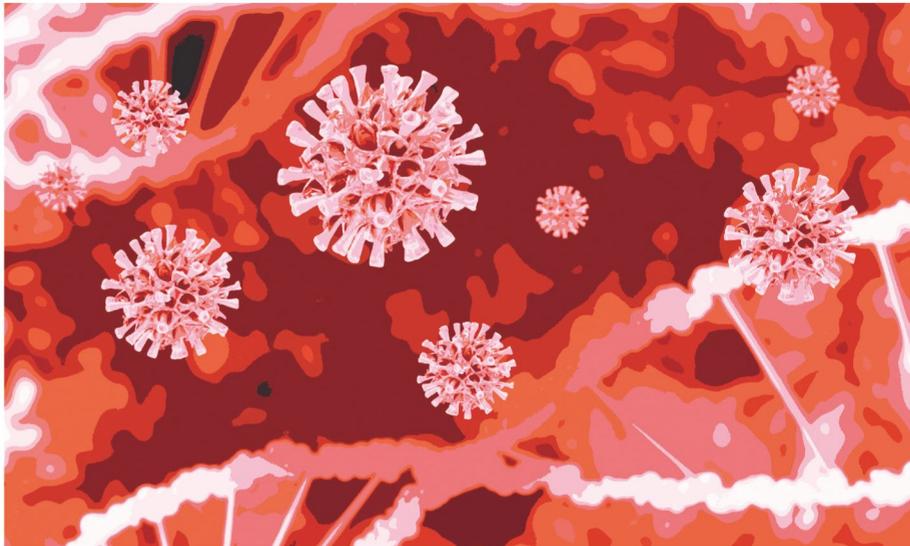
Elizabeth Vago is a partner at law firm Spencer West.



William Brown
Quigg Golden

Construction court gives first coronavirus decision

WHAT CAN THE INDUSTRY LEARN FROM THE FIRST COVID-19 CASE TO REACH THE COURTS?
WILLIAM BROWN ANALYSES THE VERDICT IN *MILLCHRIS V WATERS*



The Technology and Construction Court (TCC) has just handed down its first decision relating to a construction adjudication – where the coronavirus was the key factor.

In *MillChris Developments v Waters*, the developer asked the court to grant an injunction in an ongoing adjudication because it believed Covid-19 issues would result in a breach of natural justice. The TCC gave its verdict on 2 April.

The facts of the case are straightforward:

- In September 2017, MillChris carried out works at the residential home of Waters;
- In November 2019, MillChris ceased trading;
- In March 2020, Waters commenced an adjudication against MillChris, claiming the developer had overcharged by £45,000 and some of the works were defective.

An adjudicator was appointed and set a timetable which required the developer

to submit evidence by 3 April 2020. The adjudicator also requested permission to carry out a site inspection on 14 April 2020.

On 26 March, the developer wrote to the adjudicator and claimed it was not possible for it to comply with the deadline due to the Covid-19 pandemic. It asked for the process to be postponed until the lockdown measures were relaxed. The adjudicator proposed a two-week extension to the timetable instead.

But MillChris did not agree to the extension and applied for an injunction to stop the adjudication process. It argued this was necessary because, if the adjudication went ahead, it would breach the rules of ‘natural justice’ because it would have insufficient time to prepare its evidence due to the lockdown.

Specifically, MillChris claimed:

- It would not be able to obtain evidence from witnesses within the proposed time frame;

- Its solicitor was self-isolating; and
- It could not attend the site inspection.

‘Natural justice’ is a cornerstone of our entire legal system and the developer was arguing that the lockdown meant its defence would not be fairly heard so the adjudication process would breach these fundamental rules.

What the court decided

The court rejected the developer’s application and did not grant the injunction.

The TCC applied the guidelines set out by the House of Lords in the case of *American Cyanamid v Ethicon [1975]*, commonly used in injunction decisions. These are complex, but essentially the courts will only consider injunction applications if they feel there is a serious issue to be looked at – and they will only grant them if a very high threshold has been met.

The court decided that:

- The developer’s difficulties in contacting factual witnesses were not a consequence of the Covid-19 outbreak;
- The necessary papers could have been scanned or delivered to its solicitor; and
- The parties to the adjudication did not have a right to be present at the adjudicator’s site inspection.

Therefore, the TCC concluded there would not be a breach of natural justice if the adjudication continued. However, it noted that it is unprecedented to have an adjudication enjoined because of a pandemic, and that there might be circumstances where an injunction may be granted.

It seems likely there will be further Covid-19 adjudications heading to court in the coming months. In a case such as this, for instance, what if the key witnesses were hospitalised with coronavirus, or the adjudicator requested a hearing but would not let someone attend because they displayed symptoms of Covid-19?

Depending on the answers to these hypothetical questions, the outcome of this case could have been very different. ●

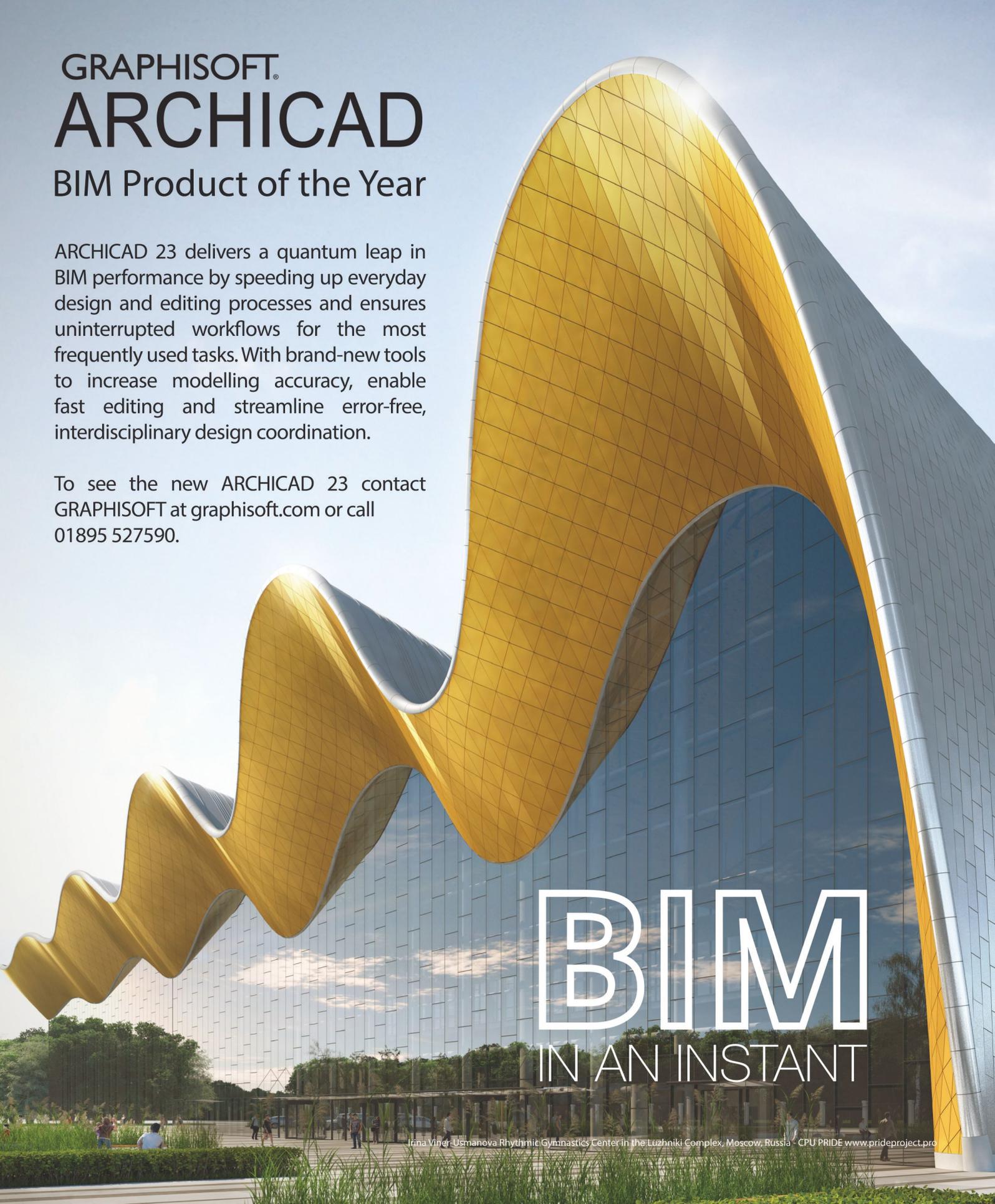
William Brown is a senior associate with Quigg Golden.

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BIM

IN AN INSTANT



Rebecca Rees
Trowers & Hamblins



John Forde
Trowers & Hamblins

High-rise rules: the government's Hackitt response explained

THE GOVERNMENT'S RESPONSE TO THE CONSULTATION ON DAME JUDITH HACKITT'S REPORT SETS OUT HOW DESIGN AND CONSTRUCTION OF HIGH-RISK RESIDENTIAL BUILDINGS WILL BE AFFECTED. **REBECCA REES** AND **JOHN FORDE** EXPLAIN THE KEY POINTS

The government's formal response to the Building a Safer Future consultation, which drew almost 900 responses, provides further detail on the new regulatory regime that lies ahead for the construction industry. A new Building Safety Bill will be tabled this year, though there are no firm timescales for either the bill or when the new regime will take effect.

The government has confirmed that the new regime will cover all multi-occupied residential buildings of more than 18m or six storeys. The scope will be extended in due course to other tenanted buildings, based on "emerging risk evidence". While these aren't named, we know from last year's consultation that it is eyeing other non-residential buildings where people sleep, including schools, hospitals and prisons.

As expected, the new Building Safety Regulator will sit within the Health & Safety

Executive (HSE) and report to the secretary of state for housing. A new chief inspector of buildings will be appointed, and the regulator will be supported by fire and rescue services, local authority building control, the HSE, a register of approved inspectors and external consultants. There is a question mark over who will staff the regulator and whether the industry has sufficient expertise to fill the new roles.

The new regime will adopt the dutyholder roles familiar from the Construction (Design and Management) regulations. 'Designer' includes anyone who instructs a person under their control to prepare or modify a design, whereas 'contractor' covers everyone who manages or directly appoints construction workers. The government acknowledges it may not always be possible to name individuals as 'accountable persons', and promises further guidance.

There has been a significant change to the 'approval gateways' system outlined in the consultation (see box). All three gateways will apply to 18m or six-storey buildings, extending the scope of gateway one from its original coverage of buildings of 30m and above.

The response sets out further detail on the safety case requirements, which must be maintained throughout the design, construction and occupation of in-scope buildings. Dutyholders and accountable persons must include written explanations and justifications of the approach taken to risk management, and reference supporting evidence.

Accountable persons will be required to identify potential hazards and at-risk persons, evaluate the risks, decide on necessary controls and mitigation measures, and record, evaluate and monitor the risks on an ongoing basis.

The "golden thread" of building information must be maintained digitally and made accessible to key stakeholders. While the government has not yet mandated BIM for the new regime, most respondents agreed this should be used to meet the new requirements.

The government has confirmed that the regulator must be notified about refurbishments subject to Building Regulations, and works may not commence until residents' safety can be assured. This also applies to refurbishments not subject to the regulations, but which could impact on fire or structural safety. The regulator retains the right to inspect any refurbishments and stop unsafe works if necessary. ●

Rebecca Rees is a partner and John Forde a managing associate at Trowers & Hamblins.

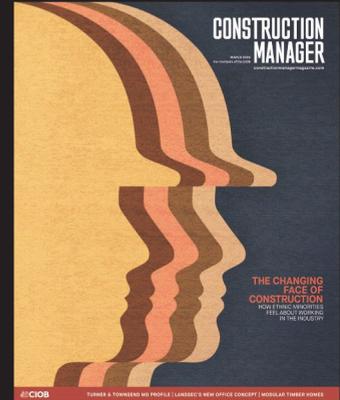
Approval gateways

1 Gateway one: Local authorities reviewing gateway one applications will be required to consult with fire and rescue services, to which the government has promised an additional £20m to increase fire inspection and enforcement capability.

2 Gateway two: This must be achieved prior to the start of the design and construction phase. Clients must ensure the principal contractor and principal designer demonstrate the necessary competence to discharge their duties effectively.

The government says the regulator will assess gateway two applications "within a reasonable timeframe" but does not promise specific timescales. The regulator will be able to permit staged approvals for complex projects, provided the safety case can be demonstrated.

3 Gateway three: To reach this stage, the client, principal designer and principal contractor co-sign a declaration confirming the building complies with Building Regulations to the best of their knowledge. Where liability will sit between dutyholders should be made clear in legislation.



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CIOB Community



Careers

Member plays part in new campaign to win young people over to construction

CITB'S FUTURE MADE CAMPAIGN USES SOCIAL MEDIA TO GET THE MESSAGE ACROSS

The CITB has launched a new campaign to help get more young people on the tools. The move comes as research shows that 71% of under-25s are currently turned off by the idea of construction jobs.

Future Made is a new campaign to change their perceptions of construction. Social media influencers will post content to show young audiences their

Above: Images from Future Made focus on the experiences of young people in the industry

adventures in trying out bricklaying, roofing, painting and decorating, and more as part of the campaign.

Day-in-the-life videos of inspirational young bricklayers, carpenters, painters and decorators will also be promoted to young people on social media.

Anjali Pindoria, 24, is a project surveyor, a member of CIOB and will be contributing.

She said: "I absolutely love coming on site. Not only do I learn new carpentry and joinery elements but I also get to learn about construction in general. You get to see the different parts of the logistics and you just get to be inquisitive about what is going on on site."

Billie-Jo Judd is a 22-year-old plasterer who's submitted one such clip. She said: "It's always something new, I just love it - it's amazing. It's probably the most therapeutic job in the whole world. The reaction from the customers is probably the best feeling ever."

Content showing the positive experiences in the industry of their

"I absolutely love coming on site. Not only do I learn new carpentry and joinery elements but I also get to learn about construction in general"

Anjali Pindoria, project surveyor

peers will attract young people, before they are directed to detailed information on applying for apprenticeships and to local training providers on Go Construct.

During a small-scale test phase last autumn posts received over 88,000 views in one month, with over 16,000 engagements. The Future Made campaign will take place throughout the next three years with annual results evaluated through surveys of young people's attitudes to the industry. ●

Watch Anjali Pindoria, Billie-Jo Judd and other contributors on the Future Made content hub at www.future-made.co.uk.



Story for Community? Email Nicky Roger
nicky@atompublishing.co.uk

Training

Graham supports Women into Construction initiative with wind turbine project

GROUP TAKES PART IN HANDS-ON THREE-DAY COURSE IN SCOTLAND

Young women from across central Scotland participating in the Women into Construction programme have completed a three-day course to build a wind turbine, facilitated by leading contractor Graham.

Women into Construction has been devised by Action for Children to encourage more females into the construction industry, where women currently only account for 14% of the workforce.

Graham is a lead partner of the initiative and arranged for the group of young women to take part in the wind turbine project with ConStructEd Scotland at Sibbald’s training facility at Blackridge, to further develop their learning and gain practical, real life construction experience.

The hands-on course has seen the group manage all aspects of the wind turbine construction project from the ground up. Working outdoors in the elements, the team have built formwork, tested and poured concrete before erecting the turbine mast and assembling the electrics to generate power.

Each stage of construction has involved the group learning and using a variety of materials, tools and skills which can then be put to good use in the working world when the programme ends.

Across the duration of the seven-week training programme, the young women from Edinburgh, East Lothian and Midlothian will learn about

various sectors of the construction industry, each aspiring to secure an apprenticeship in their chosen field after they graduate from the course in May.

Suzanne Stevenson, social impact advisor for Graham, said: “As a company, Graham looks to provide as many opportunities as possible to the younger generation, including apprenticeship schemes and funding further education.

“It’s been a pleasure to watch the young women progress throughout the course and we look forward to supporting them in their futures where possible.”

Graham is a member of the 5% Club, an organisation consisting of companies committed to ensuring 5% of their workforce over the next five years is comprised of young people on structured learning schemes. ●

Those interested in applying for an apprenticeship with Graham in Scotland are encouraged to send a CV and covering letter to: Glasgow.GrahamAcademy@graham.co.uk.

“We look forward to supporting them in their futures where possible”

Suzanne Stevenson, Graham

Participants Belle Love, Charlie Douglas and Jade Thompson, with Graham’s Suzanne Stevenson



Events

Liverpool lecture series success continues

INTERPRO SERIES COVERS THE WATERFRONT

The seventh in the Liverpool Waterfront InterPro Lecture Series was held recently at RIBA North in Liverpool.

In 2016 14 built environment institutions – including the CIOB – joined forces to deliver a lecture series to celebrate the Albert Dock, which is due to celebrate 175 years in 2021. In 2019 the lecture series evolved to also focus on the Liverpool Waterfront.

The lectures are intended to study heritage-led waterfront regeneration, while providing a forum for networking and knowledge sharing. An event is held every six months in venues on Liverpool Waterfront. Each institute will lead a talk to explore the rich history and activities of the docks on the Mersey.

Each event will take the form of up to four lectures: one or two lectures focused on a facet of the Liverpool Waterfront and the others to explore how experience and knowledge gained has influenced, or is being reflected, in other projects elsewhere.

Organised and sponsored by RIBA North West, the most recent lectures were chaired by Paul Monaghan, Liverpool City Region design champion and director of Allford Hall Monaghan Morris, with speakers including writer and critic Stephen Bayley, architect Matt Brook and landscape architect Pete Swift.

The next series of lectures is currently planned for autumn and will explore servicing historic buildings, UN sustainable development goals, technology in buildings and sustainability.

Past formal write-ups are hosted on the Royal Albert Dock website: <http://albertdockinterpro.com>.

Visit

Chartered builder Greendale welcomes CIOB CEO

DORSET FIRM GREENDALE CONSTRUCTION TAKES CAROLINE GUMBLE ON A SITE TOUR



During a tour of the UK and other CIOB regions, CEO Caroline Gumble made a visit to Dorset Chartered Building Company Greendale Construction. The visit was structured around engaging with the staff and visiting some of the firm's sites around Dorset.

Greendale Construction has been intrinsically linked with the CIOB

CIOB CEO Caroline Gumble with Rob Hooker, director of Greendale Construction

since 1990 and has become a Chartered Building Company and CIOB Training Partner. It has 10 members and one FCIQB.

Gumble was particularly interested in the career journey of Greendale's HR/finance director, Maria Seabright, who has been with the company for 23 years, having first joined as a receptionist.

Seabright has been heavily involved with the mental health and wellbeing aspects of the company, as well as all the school and college engagement and apprenticeships Greendale offers.

Bid manager Richard Tite delivered a short presentation on the history of Greendale and staff joined in with discussions about membership and fellowship progression with the CIOB.

The tour of sites included Canford School to see the work being completed on the library and assembly hall, as well as the Priest's House Museum in Wimborne, where Greendale is in the final stages of a major refurbishment for this historic building.

Ed Gibson, a Greendale carpentry apprentice, talked about the traditional

"I was delighted to meet Rob and the team from Greendale, not least because they became one of our first Chartered Building Companies"

Caroline Gumble, CIOB

skills incorporated into the project, with great examples of stonework, lime pointing, carpentry and joinery.

At Highcliffe Castle the group was taken on a behind the scenes tour of the whole building, including walking through the phases of refurbishment.

Greendale Construction director Rob Hooker, commented: "Caroline was interested to hear of the successes of our site-based managers who have achieved MCIOB working through trade apprenticeships and college to achieve this. She was also interested to hear about our two CMYA finalists Simon Copping and Stuart Harrison whose coveted prize was to be designated MCIOB."

Gumble said: "Since I became CEO of the CIOB, I have made it my mission to meet the companies and people who make up our membership to understand the issues facing the industry. I was delighted to meet Rob and the team from Greendale, not least because they became one of our first Chartered Building Companies and signed up as a Training Partner more than 25 years ago. ●

Diversity

Building Equality celebrates LGBT progress

HOST OF NATIONAL EVENTS

During LGBT History Month in February, Building Equality hosted events, talks and discussions from prominent industry figures.

These included the Birmingham region launch, where the organisation hosted a discussion on diversity and

inclusion in construction, as well as an open Q&A session in the north east, at BIM Show Live, where it opened the floor to answer Everything You Ever Wanted to Know about Being #LGBT+ in Construction.

In Greater Manchester Building Equality hosted an

event titled The Importance of Role Models and Real-life Reflection. Guest speakers included Sue Sanders, the founder of LGBT History Month UK. This was followed by a panel discussion.

The evening raised over £400 for LGBT History Month.



Careers

Helping a trainee realise his dreams

HOW AN ISG/CIOB LECTURE LED TO AN APPRENTICESHIP

A trainee construction manager is putting his best foot forward in the career that he loves, thanks to international contractor ISG and the CIOB.

Ben Sewell from Birstall, West Yorkshire, started his working life as a mechanic, but started a part-time course at Bradford College not long after turning 30.

Juggling a young family, part-time work and studying towards a HNC in Construction and the Built Environment, he was helped into work after hearing a joint lecture from the CIOB and ISG, and being given an opportunity to join the company on a placement. This led to formal work experience, then the construction manager apprenticeship he is currently undertaking.

Sewell is still in the classroom, working towards an NVQ Level 6 in Construction Management at the University College of Estate Management and in two and a half years will be a fully trained construction manager.

He is now involved in one of ISG's flagship projects in Leeds, regenerating the old Yorkshire Post building into an 18-storey PRS scheme. ●

Left: Ben Sewell is now working on site with ISG

“He was helped into work after hearing a joint lecture from the CIOB and ISG, and joined the company on a placement”

Education

Fellow goes back to school

DORKING HUB VICE-CHAIR GIVES CAREERS TALK

John D Green FCIQB, the Dorking Hub committee vice-chair and a construction consultant, recently returned to his former school to give a presentation on career opportunities in the construction industry.

Speaking to pupils at King Edward's School in Witley, Surrey, as part of a careers fair for students in year 11 and 12, he described his personal journey in the industry, explaining the variety of roles and types of projects he has been



involved with, as well as describing the various roles and disciplines that make up a project team.

The CIOB animated video describing the roles involved in creating the built environment, together with the Build Yourself a Successful Career in Construction and Careers in Construction pack, reinforced the message.

Green has recently applied to become a construction ambassador.

Youth CIOB Think Construction animated video on careers in construction

CBC

Employees take ownership of business

NEW CHAPTER FOR PACIFIC



Scottish Chartered Building Company Pacific Building has completed a two-year process of

becoming fully employee owned.

Based near Glasgow, the construction and fast fit-out firm was established in 2005 and has grown to number businesses such as McDonald's, Mitchells & Butlers, Wetherspoons, Wembley Stadium, and Manchester, Glasgow, Edinburgh and Aberdeen International Airports among its clients.

In 2018, the then managing director (now chairman) Brian Gallacher (pictured) announced he was moving Pacific into employee ownership.

Gallacher said: "I had been considering my business succession options for about 18 months, and I was keen to identify a mechanism that allowed me to exit as a shareholder, while ensuring that our loyal staff were rewarded and continued to have job security.

"Furthermore, our customers and suppliers needed the reassurance that they could continue to rely on us as trusted business partners.

"Also, I wanted a mechanism that would allow the company to continue to flourish – and remain one that truly fulfils our mission statement 'We exist to build great things'."

This status – under which every staff member is a beneficiary of a trust that owns Pacific Building – has heralded the start of an exciting new chapter in the history of the company.

Gallacher said: "The employees are enjoying the benefits of sharing the success of the company as well being given more responsibility through inclusion in key decision-making aspects of the business.

"Nobody knows Pacific's business better than the people who work here, and we have created a culture together, in which the values of professionalism, ambition, consideration, innovation, flexibility, integrity and courage underpin everything we do."



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Project

Carbon count

GORDON BROWN LOOKS AT HOW HENSTAFF CONSTRUCTION IS TACKLING ITS CARBON FOOTPRINT ON A CURRENT PROJECT



We're constantly looking at how Henstaff Construction can make a difference in what we do. The issues over climate change, carbon reduction, plastics and many more can all appear to be too large an issue to make it worth attempting to start to be better. So where do you start?

To manage any process we believe that you need to measure. Get that data and then you can start the journey. So at Porthcawl Watersports Centre, now called the Rest Bay Cafe Bar, we used BREEAM, the BRE, our assessor Melin – and not to forget the hard work and diligence of our site team.

Targeting to do better than the client's aspiration of BREEAM Very



Gordon Brown (above) is monitoring carbon emissions in construction of the Rest Bay Cafe Bar (top and right)

Good, we looked at the BREEAM Man 03 credit and the metrics and data behind the credit. By the site team monitoring energy, diesel and water use, alongside waste journeys and materials delivery, we are able to extrapolate the carbon emissions on this project.

Carbon dioxide equivalent

We realise that this is just the start of our journey and only covers the carbon from the energy consumption of power and transport. We also admit that we have some gaps that will impact the figures – elements of subcontractors' deliveries, such as M&E and others, are more difficult and time-consuming to record and assimilate.

But in starting this journey we can start to iron out these issues as we move forward.

For the Porthcawl project our carbon dioxide equivalent is 6,940kgCO₂e. This equates to 4.6 tonnes per £1m of build. I would love to hear from others as to what their figures are and to get the conversation started on carbon budgets. Let me know.

“By monitoring energy, diesel and water use, alongside waste journeys and materials delivery, we are able to extrapolate the carbon emissions”

From where we are today we are planning the following actions:

- Looking at how we improve on the accuracy of the data collection, without overburdening the guys and girls on site.
- Reviewing the data to see where the easy wins may be and how we can work with enlightened clients and stakeholders to ensure these are attained.
- Looking at the offsetting of the above 7 tonnes with the planting of trees.

The project team includes Bridgend County Borough Council (client), EPT Partnership (architect), Holloway Partnership (services), Austin Partnership (structures) and TC Consult (QS).

To offset or not?

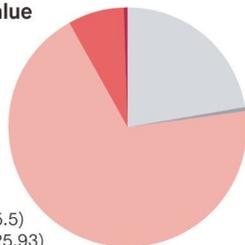
We're aware that this is not the silver bullet and some may disagree, but being a Cardiff-based company we would love to know if there are local/Welsh tree planting scheme(s) that we could get involved in and make this project at least carbon neutral – well at least in the next 40 years or so. ●

Gordon Brown MCIQB is business development manager at Henstaff Construction. Contact via LinkedIn.



Total KgCO₂e/£100 project value
CO₂e = carbon dioxide equivalent

- Electricity consumption (2)
- Diesel consumption (105.9)
- Water consumption (2.25)
- Construction material to site (325.5)
- Construction material from site (25.93)



Challenge

Bright Futures students impress the judges

LONDON/SOUTH EAST AND NORTH WEST FINALS

The CIOB Bright Futures Student Challenge 2020 took place recently with finals in the London/South East and the North West regions.

This annual student competition pitches teams of four built environment students from regional universities.

The final for the London/South East started off on a football stadium site with VolkerFitzpatrick, the event sponsor, giving the students a tour to help them gather information for their upcoming presentations. Each team was randomly assigned a question covering a different aspect of the site and construction and given two hours to work on a 10-minute presentation to a panel of judges.

The judges were John O’Grady, commercial director building division at VolkerFitzpatrick, Anthony Clarke, operations manager at VolkerFitzpatrick, Alan Williamson, M&E manager, Multiplex Construction Europe and Dan Ryder, senior project manager, Durkan.

The winning team was from London South Bank University (LSBU) – Lauren Webster, Ben Clark, Luke Stanley and Royden Gilbert – in their second win

as a team. Second place went to the University of Brighton team – Dominic Harris (who won Outstanding Student at the London regional), Joseph Broom, Taka Musimurimwa, and Melissa Dias.

Third place went to a team from the University of West London (UWL) and included: Javid Jivraj, Aljay Johnson, Gabriele Simkute and Marvin Corbin.

Fourth place went to another team from LSBU with just three members: Livia Giulimondi, Christian Montano Perea and Evgenii Krutasov.

The outstanding student award went to Taka Musimurimwa from the University of Brighton.

At the Student Challenge in the North West the winning team was from the University of Salford, made up of Chris Townsend, Ivan Dangov, Elaine Huskinson and Phoebe Shore.

The best individual on the day was Chris Townsend from Willmott Dixon. Chris is a third year Construction Project Management degree student and is three years into a five-year management trainee scheme.

Townsend has demonstrated a lot of drive to get to this stage of his career. He left school without qualifications and began working as a groundwork labourer.

“I spent years learning the trade and enjoying it, making my way up to a 360 excavator operative,” he says. “Then an infection in my left eye rendered me blind in it and I had to give up my dream job of excavator driving.



Danielle Gillespie MCIOB

Meet a member

DANIELLE GILLESPIE,
DESIGN MANAGER AT GILBERT-ASH



CHRISTOPHER HEANEY

Tell us about how you got into construction? What else might you have done?

At secondary school I had a keen interest in buildings, and I completed work experience with an architect. This interest developed into design and I completed a BDes (Hons) Interior & Environmental Design at University of Dundee. After graduating I worked in Scotland and at home in Northern Ireland in design and contractor roles.

After a few years I had the opportunity to work in Macau SAR China, which launched me into the international world of construction on multi-billion-dollar projects. Working for architect Aedas, I had a site-based role on two Sheraton Hotel Towers.

There is no better place to gain invaluable construction knowledge than on site, seeing all elements of the build come together. After completion, I moved client side and changed roles to design manager working on hotel brands Ritz-Carlton and JW Marriott.

After moving home, I was keen to find a design manager

role. I was fortunate to join the team at Gilbert-Ash, working on diverse projects, from hotels to a performing arts school and my most recent project, the restoration of a Grade II-listed building which will be used as art galleries when it completes next month.

I could not imagine working in any other industry however at one point I had considered a law career, although this is being fulfilled by the construction law element of my MSc.

What do you find challenging about this industry? What changes would you like to see? And what is rewarding?

The challenge for me is sometimes achieving a good balance between work and home life as construction is not a 9-5 job.

It’s a demanding, fast-paced industry, which I really enjoy, and the rewards for me are the learning and the relationships you build working as a team on each project. Handing over to a happy client is also very rewarding.

What are your career ambitions?

I achieved my MCIOB in May last year and I am studying part-time towards an MSc Construction and Project Management at Queen’s University, Belfast, but one day I would hope I could progress to director level within Gilbert-Ash.

CIOB Bright Futures Challenge finalists in the London/South East regions

“I applied to do a HNC at university to get a formal qualification and after completing year one of the course, I successfully applied for the Willmott Dixon management trainee scheme.”

Highly commended was University Centre Blackburn College: Rebecca Salter, Michelle Priestman, Brent Eastwood and Richard Bullock. ●

“It’s demanded an incredible effort from the whole team – it’s extracted the best of our collective abilities”

**Rob Easton,
Morgan Sindall Construction**

Me and my project

Artfully done

ROB EASTON TELLS US ABOUT A SUSTAINABLE STUDENT ACCOMMODATION BUILD BY MORGAN SINDALL CONSTRUCTION



Morgan Sindall Construction was appointed by Arts University Bournemouth (AUB) to deliver a new £24m, 300-bed student accommodation scheme as part of continued investment into the university’s main campus.

I’m extremely proud to be a key member of the project team on this exciting next phase of the university’s redevelopment, which is central to AUB’s future aspirations to grow its reputation as a leading arts university.

This project has been unusual for a student accommodation project given that there has been a major focus on sustainability and design throughout.

The project was procured through the Southern Construction Framework (SCF) and this has been a positive environment for a high level of collaboration and teamwork in order to ensure the flow of information is released in a steady and holistic way.

This has meant that we’ve been able to deliver within the timeline of all of the stakeholders. Through early engagement of specialist experience and skills, the framework really helped to streamline the procurement process

at the front end of the project and improve the efficiency and value for money that our team has delivered.

One of the most interesting but challenging aspects has been the level of value engineering delivered in order to maintain as many of the original design concepts while ensuring the budgetary requirements were met.

It’s been a truly innovative and collaborative process with AUB and our project partners to deliver a unique building which reflects the university’s core ethos. It’s demanded an incredible effort from the whole team, from AUB to the design team and across our supply chain – it’s extracted the best of our collective abilities.

The project is on track to achieve a BREEAM Very Good rating demonstrates the university’s ongoing commitment to creating forward-thinking, sustainable buildings. Rather than one high-rise standardised block, the accommodation is formed of three buildings spread across 11 blocks. Each will range from three to four storeys and will feature eight bed clusters with communal kitchens and dining areas, around a landscaped courtyard.

The buildings will be clad in specialist basket-weave brickwork, with features like corner windows carefully designed to help to integrate the buildings into both the campus and surrounding residential environment.

Sustainability has been at the forefront of the landscape design too,



which is why we’re also delivering upgraded pedestrian and cycle routes to connect the site with the nearby bus hub and the other areas.

Our appointment to this scheme marks the continuation of a nine-year relationship with AUB, during which Morgan Sindall Construction has delivered several of the remarkable buildings which make up the campus including the RIBA Award-winning Drawing Studio – the first dedicated drawing studio built in the UK for over a century – and the Photography Building, which forms a gateway to the campus.

The buildings stand testament to the long-standing, highly collaborative partnership Morgan Sindall Construction has developed with the university over the last decade. We’re incredibly proud of each project completed so far and I’m looking forward to continuing work to create a stunning new home for AUB’s students that will complement and enhance the existing campus. ●

Rob Easton is project manager at Morgan Sindall Construction.



Top: A canopy marks the entrance to the courtyard

Above: Project manager Rob Easton

Above right: A reception room in the new accommodation

Below right: Studio bedroom in the 300-bed accommodation





Partnership

Seeing the wood for the trees

JOHN SISK & SONS DEPLOYED DIGITAL CONSTRUCTION TOOLS TO DELIVER WOODLAND CABINS FOR CENTER PARCS

Elecosoft[®]



COLM KERR

Sisk's project to build the central leisure buildings (left) and guest lodges (above right) was speeded by use of Elecosoft's Site Progress Mobile

site level via the app, progress data goes up into the cloud and is available for the planner to download and review and check the information, before integrating it into the overall progress update."

Users on site also benefited from time efficiencies, as Fitzpatrick adds: "To gather all the mark-ups and progress updates ready to give to the planner would have taken those field users a full day of exercise each – now with the app they can continuously gather and update information as they go. There is really no additional task involved in delivering progress."

The project finished on time and to everyone's satisfaction, and the centre opened in July 2019, receiving rave online reviews. Having proved the value of Site Progress Mobile, Sisk quickly purchased a number of licences for use across the company and it has been put to use on several further projects.

Fitzpatrick reflects on how apps like this are benefiting planners: "One of the benefits of new technologies coming on stream so far is that correct information is now fed out and reaches sites.

"The Site Progress Mobile app is probably the first example I have seen where we are also getting correct and timely information back from the site itself. It means that the planner gets real visibility and can, instead of spending time inputting information, assess incoming information, query it, validate it, then have time to think and make the right decisions around it." ●

Elecosoft is a CIOB partner.

In late 2017 John Sisk & Son (Sisk) was awarded the contract to build the guest lodges and central leisure buildings at the hotly anticipated €233m Center Parcs at Longford Forest near Ballymahon in Ireland. It would accommodate up to 2,500 guests in nearly 470 lodges, distributed across 160ha of beautiful woodland.

With 466 individual lodges to build across a vast site over 68 weeks, Sisk knew that to sustain the pace of work it would be paramount to keep abreast of progress and deploy resources effectively.

Powerproject from Elecosoft is Sisk's choice of planning software and on this project, Sisk chose to trial Site Progress Mobile, which is Powerproject's companion mobile app, with the hope

that it would help it to keep a closer eye on activities, resources and progress across this large area.

Project leader Cormac Fitzpatrick and lead planner Damien Gallagher found Site Progress Mobile helped them to successfully manage progress on the Center Parcs build.

The time savings were quick to compound. Before receiving live progress updates from the site through the app, Gallagher estimated it would take a full day each week to simply update the project programme. The impact after starting to use the app was quite clear.

He says: "Carrying out the same activity in terms of progressing the bar chart was reduced considerably to about three hours instead of a full day. As soon as app users have completed updates at

"Tools like the Site Progress Mobile app help us to take people out from behind desks, marking up progress on drawings or schedules, to instead managing the work on site"

Damien Gallagher, John Sisk & Sons



Training & Recruitment

Job spotlight

James Sargeant

Associate, Quigg Golden

LEGALLY SPEAKING

JAMES SARGEANT'S ROLE IN THE CONTRACTING TEAM OF A TOP CONSTRUCTION LAW FIRM SHOWS HIM AN EVER-CHANGING INDUSTRY



Describe a typical day in your job.

I work with a mixture of public and private sector clients in the construction industry, including developers, contractors, subcontractors and consultants.

I specialise in NEC3/4, JCT and bespoke forms of contracts, so I spend the majority of my time working on contractual matters.

My days are varied but generally I spend around one-quarter of my time working on non-contentious matters such as reviewing contracts, drafting amendments to standard form contracts and advising clients with regards to collateral warranties and other legal documents. I also give regular training seminars to clients on a variety of construction law and procurement law topics.

The majority of my time is then spent working on contentious matters such as adjudications, litigations and mediations. I represent both

claimants and defendants and at any one time I am usually involved with several disputes, of which no two are ever the same. They can vary significantly in subject matter, value and the legal processes which are involved.

The remainder of my time is usually spent at CPD and networking events.

What training/education path did you follow?

I studied law for three years at the University of Kent, graduating in 2011.

In order to qualify as a solicitor, I undertook a two-year training contract with Quigg Golden, while also studying the Legal Practitioner's Course for two years at BPP University in Holborn. I also intend to study for my Law master's, which I am planning to start in September 2020, also at BPP University.

What do you find challenging and rewarding about your role?

My work can be very challenging. When I am involved in disputes, particularly adjudications, the timeframes involved are very tight which can mean lots of long, stressful days working into the night to ensure I get the best result possible for my clients.

I thoroughly enjoy the diverse nature of my role. The law is constantly changing and evolving, which is what drew me to a career in law in the first place.

I also get to work with a variety of clients from right across the construction industry which means I am exposed to a mixture of projects in terms of size, value and location. I also get to work on jobs outside of UK jurisdiction, which often involves travel; another nice perk of the job.

However, the best part about my job is the feeling of satisfaction whenever I am able to achieve a good result for a client in a dispute. ●



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Standard bearer

Mark Beard explains how people were key to Beard Construction achieving BSI accreditation



When thinking about standards in construction, there's a tendency to think exclusively of the physical outputs of a project. That's clearly very important – high quality should be an end in itself as well as being at the heart of the promise to clients.

But the output is only the end of a story that also has a beginning and a middle. To deliver a high-quality finished product requires high standards to be observed and maintained throughout the process. The key to delivering this is people.

Last year, Beard decided it wanted to achieve accreditation from the British Standards Institute (BSI) across a range of different measures, reflecting its commitment to effective quality management, improving environmental sustainability, and – most importantly, as recent events have brought home all too clearly – the health and safety of its staff, all those working on its sites, and the general public.

Achieving all these standards in one year was a challenge but it was one Beard was determined to take on – not as a tick-box exercise, but as a way of ensuring the firm as a whole remains fit for the future.

As a family-owned business, Beard has always put its people first. As the company has grown in recent years, Beard has increasingly adopted an operating model that gives staff at all levels responsibility for driving change. To ensure that high standards are rigorously and routinely adhered to, the company needed to embed a commitment to best practice throughout the organisation.

That meant providing all staff with training so that they understood what Beard was trying to achieve and why it was important; what the requirements were to meet the accreditation standards; and, crucially, what that meant for each and every person in the organisation.

Beard was clear from the outset that achieving accreditation is not simply a 'nice to have', a shiny badge to put on our website, or a certificate to put in a frame and hang on the wall. It is part of the firm's culture and how we want to operate – what it calls The Beard Way.

Everybody has a role in delivering high standards and they will perform that role much more effectively if they share in the big picture of what the firm is trying to achieve.

Mark Beard is chairman of Beard Construction.



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