

CONSTRUCTION MANAGER

JANUARY 2021
For members of the CIOB

constructionmanagemagazine.com

CENTRE STAGE

HOW MACE'S CONSTRUCTION
MANAGER OF THE YEAR
DELIVERED THE LSE'S
ICONIC CENTRAL BUILDING



CIOB



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01/21

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Circulation: Net average 30,887
Audit period: July 2019 to June 2020

Subscriptions: To subscribe or for enquiries, please contact:
Subscription team:
 Tel: 01293 312160 Or go online at: <http://constructionmanager.imbmsubscriptions.com>
Or write to us at the address below:
Construction Manager
 Published for the Chartered Institute of Building by Atom Media Partners,
 3 Waterhouse Square, 138 Holborn, London EC1N 2SW
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▲ BAM's Bullring facade wrap

BAM Construction has been appointed by Hammerson to renovate the iconic Selfridges in Birmingham's Bullring. The work will see the building's 16,000 aluminium disks removed, cleaned, restored and stored while the building's facade is replaced. During the work, the building will be wrapped in a hoarding created by Birmingham artist Osman Yousefzada entitled *The Dogtooth Flower*.

◀ Fulham FC riverside stand progresses

Large sections of the steel frame for Fulham FC's new Riverside stand have now been erected by contractor Buckingham. Work on the stand at Craven Cottage began in May last year and is scheduled to take two years to complete. The new two-tier structure, designed by architect Populous, will add 4,000 new seats, taking the stadium's capacity to 29,600.



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



Commercial rewilding looks set to benefit from the new Environment Bill, p40

► Deck installed on weathering steel bridge

Steelwork on the first UK bridge to use a higher-strength grade of weathering steel has been installed. Engineering consulting group COWI is working with contractor Alun Griffiths on the construction of the 205m-long Carrington Bridge in Worcester, which converts the A4440 from single to dual carriageway. COWI said using the stronger grade of steel has reduced the total material quantity by 15%.



▼ Robot in wind turbine 'blade walk'

A six-legged robot has undertaken the world's first 'blade walk' by a machine on an offshore wind turbine off the coast of Fife. The inspect-and-repair robot scaled blades at the Offshore Renewable Energy (ORE) Catapult's 7MW Levenmouth Demonstration turbine. It is being developed under a £1m collaboration project between BladeBUG and ORE Catapult, part-funded by Innovate UK.



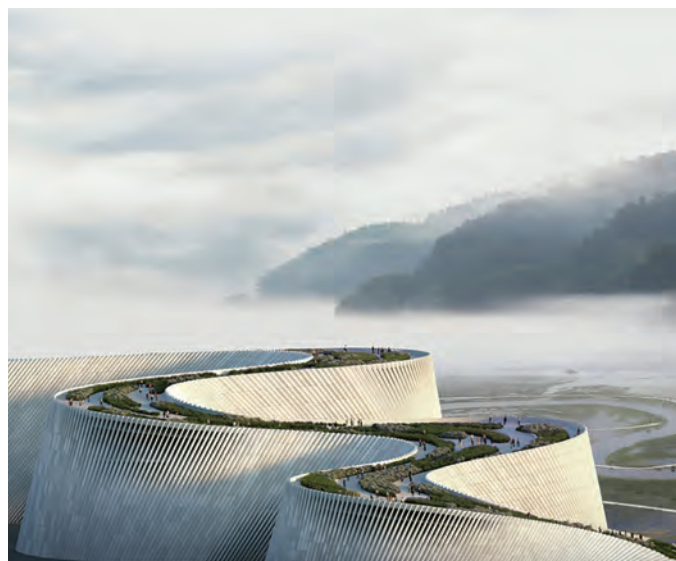
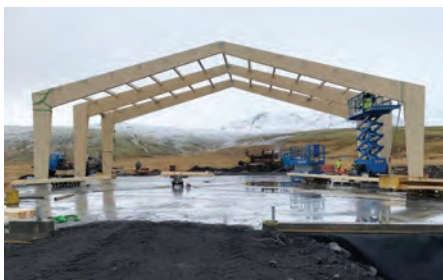
► Tideway tug fuelled by hydrogen-treated vegetable oil

Construction materials for the Tideway super sewer project below the Thames in London are being transported down the river by a tug fuelled by low-emission vegetable oil. Tideway said the GPS Vincia vessel, which runs on Green D+ hydrogen-treated vegetable oil, offers a 90% reduction in greenhouse gas emissions.



▼ World's biggest CO₂-sucking plant

Construction is underway on the world's first large-scale CO₂ capture and storage plant in Iceland, which aims to remove 4,000 tonnes of CO₂ from the atmosphere a year. The plant, called Orca, uses fans to suck in air and filter out some 90% of its CO₂, which is turned into carbonate minerals for storage underground. The plant will be powered by geothermal energy from ON Power, one of the project's partners.

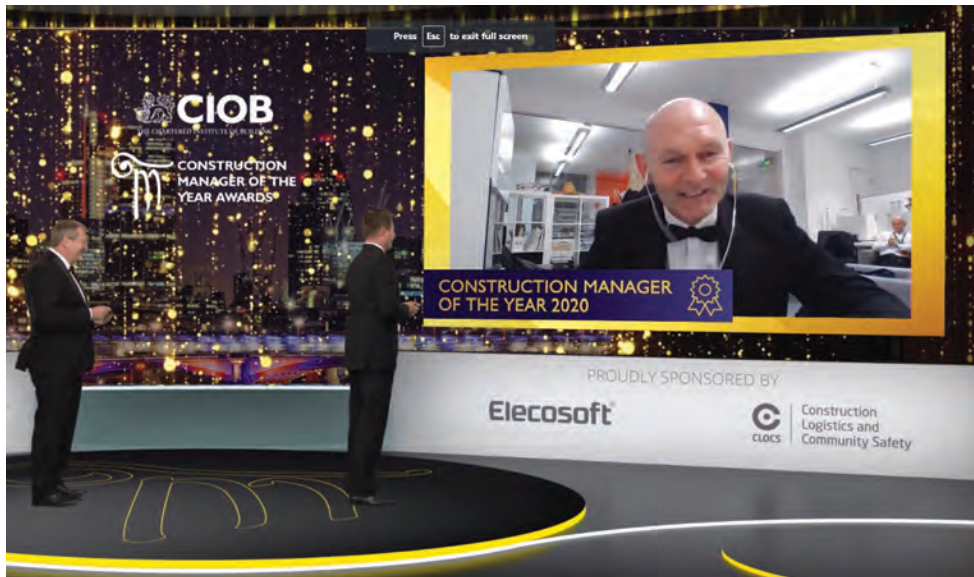


◀ Snake design for Chinese natural history museum

Shenzhen's new Natural History Museum in southeast China will be a winding, sinuous form resembling a snake or a river, with a public park on its roof. Adjacent to the Yanzi Lake in the Pingshan district, the 42,000 sq m building has been designed by Copenhagen's 3XN, multinational B+H and China's Zhuho Design.

Frank Connolly 'delighted' to land construction's top award

Mace operations director announced as Construction Manager of the Year at virtual ceremony organised by CIOB



Mace operations director Frank Connolly was “shocked and delighted” to be named Construction Manager of the Year 2020 for his work on Centre Building for the London School of Economics.

Connolly beat 60 other finalists in nine categories to win the award, also taking the gold medal in Higher Education, as the awards were

presented at a virtual ceremony, organised by the CIOB.

Connolly said: “I was over the moon to get a gold medal and to then win the overall was a bit surreal. It was a shock but I was amazed and delighted.”

He praised his team plus the client and consultants he worked with on the project. “From start to finish there was a real camaraderie, teamwork and

Frank Connolly receives his award at the virtual CMYA ceremony from host TV presenter George Clarke (centre) and CIOB president Mark Beard (left)

a focus on driving it to be the best we possibly could do,” he explained. “We did lots of mock-ups for [architect] Rogers Stirk Harbour + Partners. We knew exactly the standards that they wanted and we aimed maybe even to surpass those standards.”

Connolly said it had always been “in the back of his mind” to enter the CMYAs, having worked with 2003 winner Malcolm Nelson at Laing O’Rourke, as well as with CIOB past president and 1983 winner Alan Crane, and 2014 winner Lee Hutchinson.

He added that he saw it as crucial to uphold values such as quality and professionalism in his work, and that on the Centre Building project he had a team that shared those values.

“You treat people the way you want to be treated, no matter who they are, and it all stems from there,” he said. “I do like to lead by example and that means you get into the detail, which is important. When I was a young man, an old boss used to say to us ‘always read the packet’.

“If you have the right knowledge about what you are doing and you apply it, you get it right first time and it breeds respect.”

Finally, Connolly praised the CIOB’s efforts for staging the awards virtually.

He said: “The CIOB did a fantastic job of it. There were no glitches and it was seamless and planned really well. The host George Clarke did a fantastic job too.” ●

Connolly’s tribute to departed friends and colleagues

Construction Manager of the Year Frank Connolly paid tribute to two friends and colleagues – Tony Brown and Chris Wiles – who worked with him but recently passed away.

Brown, a structural engineer and design manager who worked

with Connolly on the Centre Building, died on 29 March 2020 from covid-19.

“Tony was a key support for me. We worked at Laing O’Rourke and then Mace together and he has been instrumental in

everything I have done over the last 12 years,” Connolly said.

Wiles, who also worked for Mace, suffered a mental health crisis. Despite receiving help and support from his GP, family and employer for anxiety and depression,

he took his own life on 24 April 2019, aged just 48.

Connolly said: “Chris was a super construction manager. He knew everything about concrete and was really diligent. I would just like him and Tony to be remembered.”



LEXiCON lives:
The CPA's Peter
Caplehorn on
harmonising
product data, p44

Golden thread: 'No clear consensus' on who owns project data

CIOB survey finds industry professionals prefer assigning data ownership responsibilities to other parties rather than taking it on themselves

Design stage %



Construction stage %



Operation stage %



- The client
- The contractor
- The information author
- The lead designer
- Other
- Unsure

SOURCE: CIOB/i3PT
GOLDEN THREAD SURVEY

Who owns the data and information relating to an asset at each stage of a project? (responses shown as percentages)

There is no clear consensus over who owns project data at the start of a construction project, despite Dame Judith Hackitt's call for a digital 'golden thread' of information following the Grenfell Tower disaster.

That is one of the key findings from a survey by i3PT Certification and the CIOB. The Golden Thread study showed construction professionals are more comfortable assigning ownership responsibilities to other parties, rather than taking them on themselves.

Some 30% of respondents thought data and information relating to an asset belonged to the client at design stage, with 22% thinking it rested with the information author and 31% thinking it belonged to the lead designer.

At construction stage, 45% thought it belonged to the contractor, with 28% thinking ownership still rested with the client. But by the operation stage, 75% thought it was owned by the client and just 3% with the contractor.

One respondent said: "Data are not 'owned' by any one person or organisation. They are owned and used by multiple organisations and people."

Another said: "The client has rights to all information at all stages, but copyright and liability remain with the authors."

In a foreword, Hackitt said: "When I carried out an independent review of building regulations and fire safety in the wake of the Grenfell fire, I was surprised to find the lack of complete, accurate or up-to-date information on the buildings the construction industry has created, which are then passed on to be owned and managed by others without knowing what they have."

"It is against this backdrop that I want the industry to recognise and respond to the need for a digital golden thread of information that is an essential part of delivering improvements in building safety."

CIOB CEO Caroline Gumble said: "Quality has been at the heart of the CIOB's work for many years. We know that keeping accurate and up-to-date information on buildings is a key component in delivering improvements in safety. The report provides a clear sense of the direction the industry needs to take to embed this culture change to improve safety for all." ●

Resourcing worries over golden thread

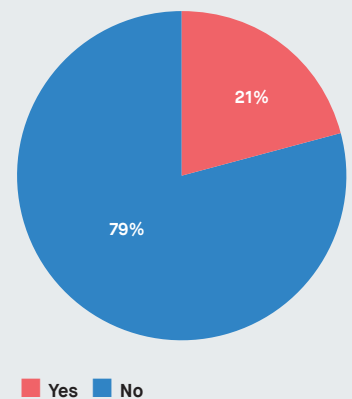
Some 79% of respondents to the CIOB/i3PT golden thread survey said it was not clear where to go for support, advice or resources about the issue.

"There is a requirement for more information and support and clear definition on future mandates and requirements," said one comment.

Four-fifths of those surveyed were confident in their own understanding of the golden thread but only 45% said the "appropriate people" within their organisation knew what the term meant.

More than one in five (21%) said they would need to hire staff or help from a consultancy to understand and deliver the golden thread recommendation.

Is it clear where to go for support, advice and resources relating to the golden thread?



SOURCE: CIOB/i3PT GOLDEN THREAD SURVEY

A new CIOB course, Certificate in Fire Safety for Construction, starts on 17 February 2021. Details can be found on the CIOB Academy website: www.ciobacademy.org/course/certificate-in-fire-safety-for-construction.



£600bn

Investment in infrastructure committed by the chancellor over the next five years in the new National Infrastructure Strategy

Construction's stop-start recovery from covid

The virus's second wave is impacting order books and H1 2021 will be a pivotal period for many contractors, says **Kris Hudson**



Q3 2020 saw some encouraging improvements in the economy. UK GDP increased 15.5%

quarter-on-quarter, and construction output rose by 41.9%. Yet this strong growth came before the second wave of lockdown restrictions were imposed and remains 8.2% below pre-covid levels.

While the vaccine rollout is coming into view, the impact of the pandemic on the economy cannot be underestimated. The recession we saw during H1 2020 may have been short-lived, but it was significant. The impact is stark when you compare the economic hit to previous recessionary periods.

The Office for Budget Responsibility (OBR) November forecast suggests it will be 2022 before we return to the peak seen before the recession. The hope is that a vaccine programme can improve that position before we get the OBR's next forecast and the Budget in March.

It's a similar story for construction. On the surface, we've seen huge improvements during Q3 2020. Housing output rose 84.4% on a quarterly basis, and new orders in infrastructure jumped 108.2% in the same period. But these figures mask the deeper covid impact.

Looking at the longer-term trend, new orders for construction are weakening. The pipeline of work in the industry is considerably below what it once was. The Q3 bounce, while welcome, is only the start and puts into stark perspective how much further we have to go given new orders are some £4bn down, in nominal terms, on the same point 20 years ago.

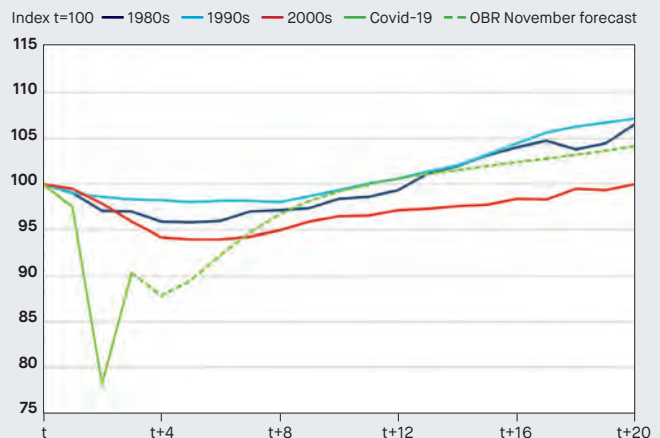
With the second wave of the virus likely to impact order books and output in Q4 2020 and Q1 2021, workloads may be constrained further before they strengthen.

The first half of 2021 is going to be a pivotal period for many contractors, and it will be vital to stay alert to the risk of insolvencies and the resilience of the supply chain. Particularly given the potential for commercial pressures after Brexit, due to the risk of materials delays and restrictions to the free movement of labour.

With the government leading a 'build back better', levelling-up approach to recovery, and a National Infrastructure Strategy finally unveiled, the industry will need to reorganise to ensure that the capacity is in place to meet future demand.

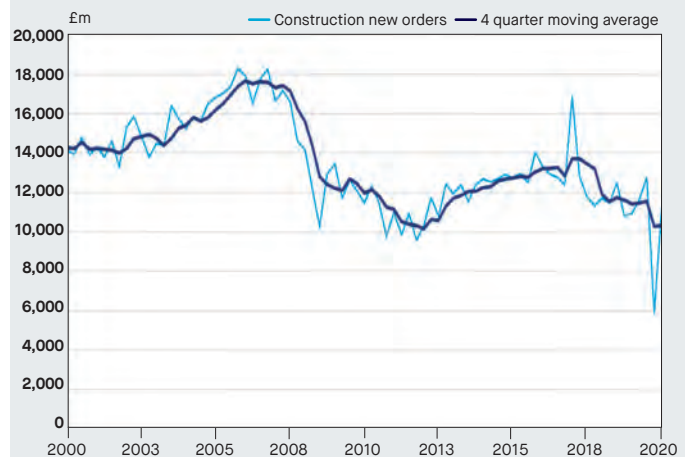
Kris Hudson is an economist and associate director at Turner & Townsend.

UK GDP performance during recessions



SOURCE: ONS & OFFICE FOR BUDGETARY RESPONSIBILITY

Construction new orders performance



SOURCE: OFFICE FOR NATIONAL STATISTICS (ONS)

News in numbers

147,300 £2bn

Number of construction workers still on furlough at the end of Q3, according to HMRC. At the peak in April, the number was 723,600.

Annual saving to the NHS in preventable illness by insulating the UK's draughty homes, as estimated by the Federation of Master Builders.

£3.8bn 50%

Value of contracts awarded in October, down almost £600m from September, according to data from Glenigan. Most new work was in private housing.

Decline in new office construction starts in Q3, according to Deloitte's Crane Survey, which reported 2.6 million sq ft of work began during the period.

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Opinion



Dr Diyana Abd Razak
Kingston University



Dan Keeling
Shirley Parsons

Clients must lead on quality

A study into common project failings finds the same issues cropping up time and again. **Dan Keeling** and **Dr Diyana Abd Razak** explain



Dame Judith Hackitt's Independent Review of Building Regulations and Fire Safety in 2018 identified quality issues in construction which many feel should have been resolved long ago.

Over the years, many improvement initiatives have been recommended, but the focus on final product and ensuring the customer gets what it specified have not been adequately addressed.

Taking the airport sector alone, Heathrow Terminal 5 had a disrupted opening, costing British Airways £23m in the first five days, Charles de Gaulle airport had a roof collapse, while Brandenburg Airport finally opened in October last year – 10 years late – after being plagued by construction problems.

The Chartered Quality Institute (CQI), with University College London (UCL), has

investigated how successfully projects delivered what was required from a client's viewpoint on completion, and the financial cost of poor quality.

Five projects were studied in detail using interviews with clients, contractors, quality teams, plus operations and maintenance staff.

The results do not make pretty reading. A £150m car park project suffered from poor drainage design and installation, with rectification and lack of availability costing £15m. A water treatment plant failed to function as promised, resulting in a quality cost of half the contract value. And a £50m airport runway resurfacing led to issues with design, construction and maintenance, which cost over £4m to put right.

These problems are sometimes reflected in safety incidents which then get

significant attention. However, the root cause – quality – tends to be overlooked.

There are number of endemic issues the study identified.

Procurement strategies, frameworks and contractual arrangements set by clients lead to a fragmented construction industry. There is a 'blindness' among the senior leadership teams of both clients and contractors about the operational impacts of not focusing on quality. And architects and designers feel no 'pain' from quality issues, either on site or during operations – when they are usually far removed from the project.

What can be done to address this persistent poor quality? The performance of the project and its delivery strategy should not be based only on programme time, cost and quality but also the operational performance of the asset. Client, architect, designer, contractor, subcontractor should work in a single team. Because of the misalignment of their goals, the whole system becomes fragmented leading to operational failure.

Hackitt identified four key issues that underpinned the system failures in the construction industry: ignorance, where regulations and guidance are misunderstood or misinterpreted; indifference, where the primary motivation is to do things as quickly and cheaply as possible; ambiguity and lack of clarity about roles and responsibilities; and inadequate regulatory oversight and enforcement.

This study backs up her findings. These systemic problems occur across the building and infrastructure sectors, but they start at the top. Clients cannot pass responsibility down the supply chain and sit back expecting all to be well; they need to lead on quality. ●

Dan Keeling was head of quality at Crossrail and is now a senior associate with Shirley Parsons. Dr Diyana Abd Razak is a lecturer in construction management at Kingston University.



Mark Beard
Beard Group

A collaborative role for the clerk of works?

Bringing the clerk of works into the contractor's team can help raise building standards, argues **Mark Beard**

Over the last few years, particularly since the Edinburgh schools collapse and the Grenfell Tower tragedy, there has been considerable debate about the clerk of works and how the role can help our industry ensure higher levels of quality for our customers.

Historically, I have been sceptical about what value the clerk of works brings to a project. But a few weeks ago, visiting one of our projects in Oxford, the penny dropped. I am a now convert. In fact, I am now a huge fan of using the skills of clerks of works on building projects to maximise product quality – which is very different from their traditional role.

If I purchase a new car from BMW, Ford, Honda or any of the major car manufacturers, they would not countenance me sending an independent inspector to check the quality of their product during manufacture. They would be confused and angry by the suggestion. Their reputation is built on getting it right first time through their own thorough checking and pride in their product. This is the way our industry should behave; snagging is for the contractor, not a clerk of works employed by the client.

Different way forward

I used to think the clerk of works role overlapped with the site manager or finishing foreman and could be divisive. But on our project at St Hilda's College in Oxford, our customer and retained consultants agreed a different way forward. We, the contractor, would directly employ the clerk of works, who would work as part of our team, reporting to our customer at

"I do find it perverse when customers feel it is good practice to squeeze the contractor and supply chain down on price, then invest part of the saving in a duplicate checking regime"

any time, but mainly helping us deliver the highest possible standard building.

The clerk of works in question is very experienced, working 'client side' on many projects. Where we have had problems, we have been open with him and he has helped us find solutions. This openness has built three-way trust with customer and consultants and avoided duplicate snagging at end of the project, giving greater role clarity and a more efficient team.

There will still be projects where customers benefit from engaging a clerk of works directly. However, I do find it perverse when customers feel it is good practice to squeeze the contractor and supply chain down on price, then invest part of the saving in a duplicate checking regime.

Contractors and clerks of works may find it awkward working as part of the same team, after many years of forced division. But, as the Grenfell Inquiry is increasingly highlighting, the sooner we take full ownership for the quality of our work, and the sooner the customer can look to a single organisation to take responsibility, the better. ●

Mark Beard is chairman of Beard Group and president of the CIOB.

Let's work towards a greener infrastructure

Changes brought by the pandemic should transform how the sector thinks and acts, says **Andy Stamps**



The recent government announcement of a £4bn 'green industrial revolution' should be a rallying call for change to the whole built environment sector.

With the banning of petrol or diesel vehicles after 2030, and investment in eco fuels, we need to consider travel alternatives. Many of us have cut down on flights for business and pleasure and switched to electric or hybrid cars. But we need to reduce individual travel and its higher environmental impact compared to public transportation systems, which also promote more inclusive communities.

At RLB, we are talking to local authority clients about autonomous public transport systems, that could cut operating costs by 40%. We are helping Dudley and Coventry councils develop 'very light rail': cheaper, less intrusive volume transportation to link semi-rural and suburban areas with cities.

How will these transportation systems be powered? Looking beyond electric and battery operations, business secretary Alok Sharma is encouraging hydrogen production. Modular nuclear reactors are also part of the government's plan. We will need different energy solutions for different regions, so where solar might work in certain areas and wind in others, it may be a combination of energies that power us into the future.

As individuals we have changed our home lives considerably over the last two decades, with adoption of low-impact energy such as solar panels, LED lights, ground and air source heat pumps, rain harvesting and wind turbines. However, there is still a way to go and it would help if the government's investment made environmentally efficient homes the cheapest to buy, thinking about long-term value rather than short-term cost.

Last year taught us we can be agile in our work. Where we previously believed we needed to be in an office, the pandemic showed us for many roles this isn't the case. The change to combining office with working remotely will cut down on transportation and energy usage, with implications for the infrastructure society needs.

Against this backdrop, it is vital the built environment industry invests government spending in the right technologies, and importantly, is open to change in the way it thinks and acts. Hopefully, this will lead to a greener and cleaner infrastructure for the future.

Andy Stamps is a partner and head of infrastructure at RLB.



Caroline Gumble
CIOB

CMYA brought positives in a challenging year

The Construction Manager of the Year Awards showcased the quality of our industry – and this can carry us forward in 2021, says **Caroline Gumble**



“From the opening for entries, not long before lockdown in the UK, we were astonished and delighted that the quality of submissions didn’t drop at all, despite the circumstances”

Last year saw a lot of us do things differently, with the Construction Manager of the Year Awards being no exception, going online for the first time in its 42-year history.

Details of our 2020 winners can be found elsewhere in this issue – do take a few minutes to read those articles, as they really reflect the best of the construction management profession.

It’s worth highlighting that the 2020 nominations were incredibly impressive and another example of the remarkable resilience of our industry. From the opening for entries, not long before lockdown in the UK, we were astonished and delighted that the quality of submissions didn’t drop at all, despite the circumstances.

Many of those nominated faced huge challenges over and above their already demanding day jobs – some of our entrants

were furloughed for a while or were having to furlough their teams. Some contracted coronavirus and were out of action for a while and, sadly, some faced the loss of loved ones, friends and colleagues.

Those things don’t get reflected in the nominations, but the stories reached us as many of our members and supporters told us what colleagues had overcome, while still delivering the highest of standards on their projects.

A note about our worthy winner, Frank Connolly MCIOB. Across the board, his work was outstanding. The judges commended his “leadership, passion and commitment”, his collaborative approach, and his openness to innovation, including a “cutting-edge” digital strategy. Many congratulations to Frank and his team.

I’m also delighted to highlight another first for 2020 – our first ever Rising Star award winners. My heartfelt congratulations to Annabel Clark, Kelly Attwood and Vasiliki Bowler. The nominations were very impressive and each of them is one to watch as a future leader in our industry.

It’s important to celebrate the fact that there is clearly more of a commitment from the industry to be diverse and inclusive. The case for this is clear, for social, moral and economic reasons. We are a central part of the construction community which creates the buildings we all live, work and play in – the industry needs to better reflect society that we serve. So I’ve been thrilled to see what’s come out of CMYA 2020 – so many positives in a year that presented so many challenges – and I’m already excited about what CMYA 2021 will bring. ●

Caroline Gumble is CEO of the CIOB.

Skilling up for the recovery

Improving digital and decarbonisation skills can help return construction to growth, says **Steve Radley**



The business of making predictions is fraught with peril, as 2020 showed. So, while we can’t say with certainty what will happen this year, there are a few areas where we can make predictions with some confidence.

The first is that growth will return as employers deal with the backlog of work. Putting an exact figure on it is harder but CITB’s 2021-25 Construction Skills Network interim report forecasts average growth of 5.4% across the next five years, with housing and infrastructure performing best. This projection was made before the encouraging news on vaccines, which may hasten a return to something like normal life with faster growth accompanying it.

The government’s National Infrastructure Strategy was published in November, which provides certainty to contractors to plan ahead and get the right skills in place.

On New Year’s Eve, we ended our Brexit transition. Our departure means there must be a greater focus on growing more of our own talent as our access to migrant workers becomes more restricted.

This is why CITB has been looking at new pathways from further education into the sector, including a new construction traineeship. We are also continuing our work to get more people site-ready through experience at onsite hubs.

Longstanding challenges like boosting productivity will remain, and this is where the recovery can become a catalyst for reinvention. There are real opportunities around offsite construction and digitalisation which should become clearer, and we will help industry to develop the skills needed to push this forward.

The drive towards decarbonisation, underpinned by the UK’s legal mandate to meet net zero by 2050, will accelerate. Boris Johnson’s 10-point plan outlined the opportunities for economic growth as we transform our built environment. Together with a Green Jobs Task Force, which CITB is supporting, this should give industry a clear signal of the government’s intentions and the confidence to invest.

2020 was a year that became largely about survival for construction employers. This year, my prediction is that we get back to growth, and make progress on the sector’s big challenges and opportunities. Steve Radley is director of strategy and policy at CITB.

 Is this really the end for section 106?, p42

Feedback

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

Thermal Recycling's Wolverhampton facility is converting asbestos for use as a building material



CM 24/11 Asbestos converted for use as building material

Alan Edwards

This is a remarkable achievement and has potential applications around the world.

Graham Skeer

At last, as an asbestos surveyor, someone has found a use for this material in my lifetime. Brilliant initiative, all news is not doom and gloom.

Rory Gannon

Given that this 'calmag' is silicates, carbonates, sulphates and oxides, what precautions are required when it becomes friable in use as a building material e.g. being sawn cut or drilled into?

RoyA

I think a lot more research needs to go into this product before being released into the built environment (again). Too many people have respiratory disease due to the use of asbestos in various forms (myself included).

TimH

This seems a great idea if it can work commercially – but the handling would need to be careful to not cross-contaminate the 'calmag' with asbestos fibres from the next batch?

Gary Lane

Great idea. Will the asbestos waste (old roof sheets etc) be taken to the plant by the current asbestos skip providers?

CM 20/11 Grenfell: Looking to past not the answer

Debbie Carlton

We need to imagine incentivising an ecosystem of competency management that all stakeholders work together in cooperation to capture, infer, interpret, integrate, accredit, certify, apply, use, assess, monitor and evolve competence as a working digital asset (golden thread of competence).

Artur Jozefowski

Great article. I agree, we must make sure adequate, experienced, well-structured delivery teams take on

the projects to address issues. [We must have a] talent pool able to allocate, revise, facilitate and handle technical problems with utmost care, where sometimes providing detailed solutions is not enough and only true site experience can benefit the design outcome.

CM 29/09 Steel exoskeleton lights up LSE

Mark Dymott

The judges missed one item that the steel exoskeleton will also be adored by local wildlife. The Lloyd's Building in London was plagued by pigeons during its time. Can't we learn from the past?

CM 30/11 Suspended sentences after dumper death

David Ford

Very low fines given that someone was killed. Given the sentencing guidelines, the companies must have been both low turnover organisations. It would appear that the dumper seat belt may not have been worn.

The majority of homebuilders banned the use of dumpers on spoil heaps a couple of years ago in a drive to prevent such incidents. Lack of knowledge, training and supervision all played their part in the death of this young man. A preventable event.

CM 10/11 Grenfell: Manufacturers 'exploited ignorance for commercial gain'

Rod McLennan

Fascinating account...[this] raises a number of questions regarding the initial and ongoing training of design professionals in terms of material science.

Neil Jackson

The move to commercialise testing and regulation in our industry seems to have gone too far. Manufacturers are often the most powerful players, with project teams and contractors working on ever-decreasing budgets and margins.

David Ward

It does make you question whether, as a professional, you want to be involved in specifying anything... We can act in good faith and be diligent and yet if something goes wrong everyone is pointing fingers. You can always be more careful or check one more thing, or do one more inspection.

Rob Evans

With traditional materials we can rely on accumulated experience and construction textbooks. This is not possible with new and developing products where we are largely dependent on the manufacturers' fitting instructions and published technical information.

To obtain detail of fire test reports which underlie published certificates takes determination and persistence. This makes carrying out due diligence a daunting task.

This is particularly so as the fire tests rarely replicate the proposed uses of the tested products and therefore are of dubious applicability.

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



Art of Building



LAKES, DESERTS AND CITIES ON FIRE

THE CIOB'S ART OF BUILDING COMPETITION IS BACK WITH ANOTHER SELECTION OF STUNNING PHOTOS MAKING IT THROUGH TO THE FINAL SHORTLIST

The Chartered Institute of Building (CIOB) has revealed the 15 finalists in its Art of Building Photographer of the Year competition.

The images made it past the judging panel out of the thousands submitted from more than 100 countries.

Caroline Gumble, CIOB chief executive, said: "It's truly inspiring to see how these photographers can tell the

story of the built world around us with new and unusual perspectives."

There are two awards to be won: the £1,500 Judges' Prize, chosen by the judges, and the £1,500 Public Choice Award chosen by the public through an online vote. Winners will be announced on 26 January 2021. To see the full line-up go to www.constructionmanagemagazine.com. ●

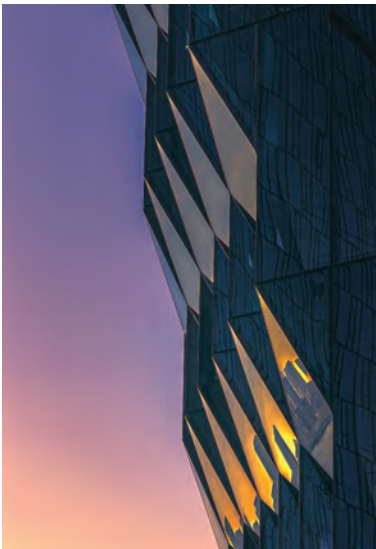
▲ Inle Lake Houses

Aung Chan Thar, Inle Lake, Myanmar. "Inle Lake is inhabited by the Shan people, one of the Burmese ethnic groups. They build floating houses and trade on the water on a floating market."

► Colourful Doors

Gerdie Hutomo Nurhadi, Jakarta, Indonesia.





▲ City on Fire, Reflected

Daniel Jenney, New York, USA.
“Modern, minimalist architecture can really be a great canvas to let light play and change throughout the day. This structure on New York’s Lower West Side reflects the sunset behind the city and provides sharp contrast to the pastel sky.”

▼ The Land of Buddha

Bob Chiu, Fuzhou, China.



◀ Jamkaran Mosque

Hadi Dehghanpour, Jamkaran, Qom, Iran.

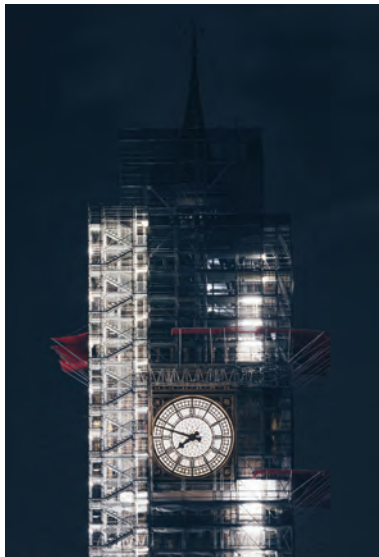
▲ City in the Desert

Joebel Garcisto, Al Ain City, UAE.
“This housing project is built at the bottom of the mountain and surrounded by the warm colour of desert.”




▶ The Value of Time

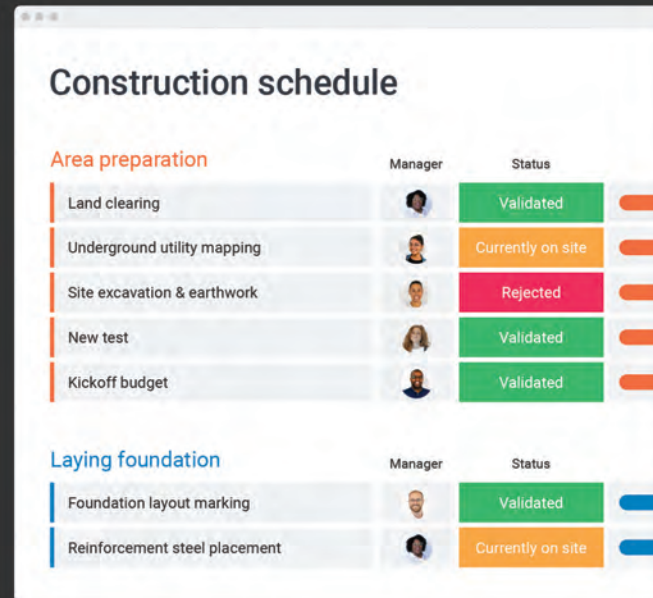
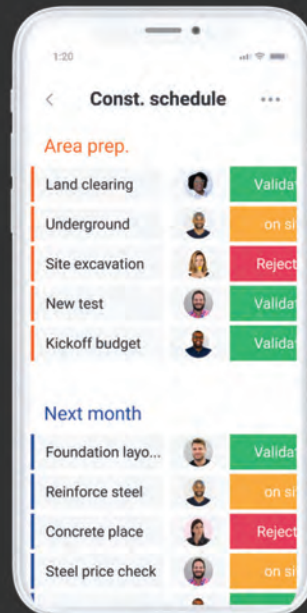
James Retief, Big Ben, London, UK.
“With the ongoing renovations to Big Ben, this iconic monument has been shrouded in a layer of scaffolding, but I found beauty in the matrix of scaffolding poles, stairs and netting which abstracts it into an approximation of the overly familiar form.”





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Construction Manager of the Year Awards 2020



CENTRE STAGE

MACE'S FRANK CONNOLLY TOOK THE OVERALL CONSTRUCTION MANAGER OF THE YEAR AWARD FOR 2020 FOR HIS MASTERFUL PROJECT STRATEGY ON LSE'S FLAGSHIP CENTRE BUILDING. **CM** REPORTS ON ALL THE WINNERS OVER THE NEXT 14 PAGES



★ **Frank Connolly MCIOB**
Construction Manager of the Year 2020
Gold Winner Higher Education
Mace

Project: Centre Building, Holborn

Scope: Construction of 12-storey block, completed in 124 weeks

Client: London School of Economics

Contract: GC Works 1 D&B

Value: £82m

Frank Connolly from Mace is the Construction Manager of the Year for 2020, and gold winner of the Higher Education category, after expertly delivering a striking new faculty building for the London School of Economics (LSE).

On a busy site in Holborn, in the heart of the capital, the new Centre Building features the trademark exposed structure of architect

Rogers Stirk Harbour + Partners and challenged Connolly's expertise and ingenuity at every turn.

His approach to value engineering was key to successful delivery, particularly so given the architectural aspiration for the 12-storey building. Connolly's deployment of alternative methodologies, products and sequences realised savings while maintaining the spirit of the design.

For the brise soleil cladding, he ditched an expensive externally installed system requiring secondary steel support and full scaffold access in favour of a unitised system with integrated brise soleil supported by brackets within the frame. Flat-pack brise soleil could therefore be

Higher Education

attached to the cladding on site at ground level without the need for scaffolding along the elevations.

Meanwhile, Connolly had the unitised facade's 3m-wide panels redesigned as 2m-wide elements so they could be installed from the floor slabs with floor cranes and hoists, allowing the tower cranes to be removed earlier.

The land-locked LSE site was accessible only from a single-file lane which made logistics management challenging. Connolly helped alleviate this by suspending part of the ground-floor slab over the basement to support a gantry at the site entrance for excavators and lorries to operate and turn. The exercise in top-down construction doubled up to create a fair-faced concrete soffit for the auditorium below.

He also instigated a major prefabrication push to reduce site deliveries and labour, and raise product and installation quality. Some 65% of the project was prefabricated: the steel frame and precast planks; the unitised

curtain walling and brise soleil; the services modules, risers and plant modules; the sprinklers (the UK's first fully prefabricated system); and reception and cafe pods. His product innovation included crystalline-based concrete waterproofing rather than time-consuming sheet tanking.

At the enabling works stage, Connolly de-risked the archaeology – which has historically dogged the client's programme in construction projects – by coordinating the digs with demolition activity. All archaeology was signed off before the construction phase began as scheduled.

And when calamity struck, he responded. The rupturing of an offsite water main flooded the basement when the slab pours were already under way. As the flooding continued from a main that the water utility left on for eight long weeks, Connolly put in pumping points and switched to smaller slab pours so basement construction could continue – and complete just five days behind.



JOAS SOUZA

Underpinning his project strategy was cutting-edge digital thinking. Connolly had animated fly-throughs created to help the supply chain understand the project and the quality required, and a virtual reality walk-through for the client and end users to provide an effective visual interpretation of the design.

Other finalists

Neil Adams
MCIQB

Willmott Dixon
Interiors, London
Screen Academy,
Highbury

David Clarke
MCIQB

Wates Construction,
Quarry Hill Campus,
Leeds City College

Anthony Cooper
MCIQB

Interserve
Construction,
Engineering
Heartspace,
Sheffield

Karl Crisp
MCIQB

Willmott Dixon, The
Kennedy Building,
Canterbury

Glyn Jones
MCIQB

Willmott Dixon,
Student Life
Building, Teesside
University

Lee Mullett
MCIQB

Willmott Dixon,
Teaching and
Learning, University
of Birmingham

Adam Price
MCIQB

Beard Construction,
Catherine Hughes
Building, Somerville
College, Oxford

Ian Rainbow
MCIQB

BAM Construct UK,
Advanced Wellbeing
Research Centre,
Sheffield

Lee Wayper
MCIQB

Sir Robert McAlpine,
The Frederick
Douglass Centre,
Newcastle
University



★ **Richard White**
MCIQB
Silver Winner
ISG Construction

Project: The Richmond Building,
Twickenham

Scope: Construction of five-storey
campus block, completed in 99 weeks

Client: Richmond upon Thames College

Contract: NEC 3 option A

Value: £38m

Richard White's five-storey campus block was a technical trial, which included constructing a reinforced concrete frame around a cavernous atrium and auditorium voids, and hanging from the roof slab a

studio-filled pod four storeys high. With the roof slab needing to cure and gain strength before it could support the pod's weight, he avoided overloading the suspended ground-floor slab with temporary support.

Rather than over-reinforce the slab, White smartly retained the piling mat to carry the load from the upper floors.

During construction of the main building's frame, he spent six weeks erecting an atrium-filling birdcage scaffold from which trusses to strengthen the structural roof could be installed. Fabricated in two sections, the eight 24m-long trusses were assembled at ground level and lifted into position in one piece using the site's single tower crane over a two-week period.

Primary Education



★ **Massimiliano Crea**
MCIOB
Mid Group

Project: Stonebridge Primary School, London NW10

Scope: Construction of new teaching block and hall, and refurbishment of Grade II-listed building, completed in 67 weeks

Client: London Borough of Brent
Contract: JCT D&B

Value: £7.5m

Massi Crea's design input at the start of the Stonebridge Primary School project was responsible for significant cost savings.

He changed the building layout, placing classrooms on the perimeter of the existing building, to equalise the air conditioning requirement, then equipped each one with its own standalone natural ventilation and heat recovery unit, reducing the amount of expensive duct work required.



Other finalists

Laura Allison
MCIOB

Morgan Sindall Construction, Hilltop Primary School, Airdrie

Mike Castle
FCIOB

Knights Brown, Church Crookham Junior School

Mark McElwee
MCIOB

Morgan Sindall Construction, Abbey View Primary Academy, High Wycombe

Michael Pyatt
MCIOB

Morgan Sindall Construction, Abertillery Learning Community – Six Bells Campus

Stephen Sear
MCIOB

Morgan Sindall Construction, Hailsham Primary Academy, Brighton

The steel frame of the new build, which required lengthy lead-in times, was replaced with timber structural insulated panels, which could be installed from smaller mobile cranes, and speeded up the programme. Crea also removed the new block's projected second storey, relocating

the classroom spaces to the existing building's old hall as part of the refurbishment programme.

These changes slashed the budget by £1.2m and despite the redesign work enforcing a late start on site, Crea still handed over five months early.



★ **Thomas Prince**
MCIOB
Willmott Dixon

Project: Water Orton Primary School, Birmingham

Scope: Construction of single-storey school with two-form entry, completed in 46 weeks

Client: Warwickshire County Council
Contract: NEC 3 option A

Value: £5.8m

The major challenge on this predesigned Sunesis-type single-storey school centred on the groundworks.

With 600mm of topsoil compromising the foundation design, Thomas Prince brought in a remediation specialist who kept 9,000 cu m of excavated material on site by cement-stabilisation and cut-and-fill works.

The bearing substrate sat deep below the finished floor level, so the original plan was for costly continuous flight auger piles. However, having used steel tube piles on past projects, Prince decided to put the steel in direct and eliminated concrete by driving in

recycled gas-line pipework, making substantial cost and time savings.

The potential for ground heave prevented installation of an in-situ concrete floor, so Prince went for a beam and block construction with screed topping, resequencing the roofing to avoid losing time on the overall programme.



Schools



★ **Andrew Miles**
MCIQB
Kier Construction

Project: Croesyceiliog School, Cwmbran, Wales

Scope: Construction of three-storey replacement school, completed in 92 weeks

Client: Torfaen County Borough Council

Contract: NEC 3 option A

Value: £29m

Andrew Miles only found out deep into preconstruction that Croesyceiliog School would be GCSE-only, rather than catering for A-levels as well, meaning he had to review the design and pull back 10 lost weeks of programme. A further complication during construction was the decision to keep an existing school block on the site for A-level students until completion of a post-16 college.

Miles realigned the enabling works with the main works and moved works off the critical path to allow the cut and fill to plateau and piling mats to be



ADAM DAVIES

formed early. He redesigned the car park, access, fencing and services, and saved costs by using a shallower foundation solution and rationalising the drainage design, which reduced excavation work and concrete volumes.

He avoided removal of 13,000 cu m of waste by raising the level of the

football pitch, by soil-stabilising the ground so it could be used in the substructure and piling mats, and by introducing a swale to downsize attenuation crate volumes.

His cost savings exceeded £400,000 – enough to protect the budget – and the project was delivered six weeks early.

Other finalists

John Blundell
MCIQB

TJ Evers,
Teaching Block
& Amphitheatre,
Dame Alice Owen's
School, Potters Bar

Daniel Morrish
MCIQB

Morgan Sindall
Construction,
Lexden Springs
School, Colchester

Mark Prince

Eric Wright
Construction,
Queen Elizabeth
Studio School,
Kirkby Lonsdale



★ **Graham Thompson**
MCIQB
Willmott Dixon

Project: Harris Academy Sutton, Surrey

Scope: Construction of four-storey Passivhaus school, completed in 89 weeks

Client: London Borough of Sutton

Contract: JCT D&B 2016

Value: £38m

Harris Academy is the biggest school in Europe – and first UK secondary school – built to the Passivhaus standard and Graham Thompson led a collaborative effort with architects, engineers, client and

end-users to embrace the demanding quality required.

He built a full-size mock-up of a section of the building, testing it ahead of the programme to reduce risk, and to agree quality standards and benchmarking. This was the key to the exceptionally airtight envelope requirement of no more than 0.6 air changes per hour.

When issues including drainage design, bad weather and a factory breakdown took a 10-week bite out of the programme, Thompson changed the sequencing, completing the wings of the building first and temporarily waterproofing the roof and facade so the internal finishes could be brought forward to recover lost time.



Healthcare



ADAM DAVIES



★ **Matt Gavin**
MCIOB
Kier Construction

Project: MRI Building, University Hospital of Wales, Cardiff
Scope: Construction of six-storey MRI building, completed in 96 weeks
Client: Cardiff and Vale University Health Board
Contract: NEC option C
Value: £12m

For this six-storey replacement MRI facility at the biggest hospital in Wales, Matt Gavin had to deliver the new-build project in an enclosed

courtyard, surrounded on all sides by live medical facilities.

His logistical planning included erecting a tower crane inside the courtyard, the only practicable way to move materials into and out of the site. In an emergency corridor over which the crane lifts would take place, he installed a CCTV camera linked to the crane cab so the operator could check if the corridor was clear before each lift.

For the removal of an existing ground-floor slab, Gavin arranged the saw-cutting operation for between 8am and 9am to prevent disruption to patients, with sections crushed by a remote-operated demolition robot to limit the noise and vibration.

When equipment specification changed and pushed the electrical load much higher, he had to introduce a cast resin busbar. By vigorously resequencing, he allowed snagging and commissioning to continue while the busbar was sourced and installed, reducing a potential 16-week delay to just four.



★ **Lewis Blake**
MCIOB
Willmott Dixon Interiors

Project: Nursing and Midwifery Council Headquarters, London E20
Scope: Fit-out of office headquarters, completed in 16 weeks
Client: Nursing and Midwifery Council
Contract: JCT 2016 with procurement hub amendments
Value: £1.9m

This 17th-floor fit-out of 22,000 sq ft of office space required Lewis Blake to execute a fast-paced programme in a fully occupied building that was busy seven days a week.

Just-in-time deliveries were key on a site where the loading bay was shared with other building occupants and another fit-out contractor.

With no room for lost time, Blake switched to risk-reducing alternatives for a bespoke staging area and feature ceiling canopy in the amphitheatre. Cost-effective flooring, tiling and joinery options freed up budget. The project was handed over on schedule.



Other finalists

Tom Millard
MCIOB
Willmott Dixon,
Cardiff Royal
Infirmary Block 14

Robert Palmer
MCIOB
Kier Regional
Building London
and South East,
Southwood
Courtyard Building,
Great Ormond
Street Hospital

Leisure



★ **Jamie Beard**
MCIOB
Willmott Dixon

Project: Tameside Wellness Centre, Denton, Manchester
Scope: Construction of two-storey leisure centre, completed in 63 weeks
Client: Network Space
Contract: JCT D&B 2016
Value: £11.5m



Jamie Beard's experience of swimming pool construction was invaluable on this leisure centre job. He spent £90,000 upfront rather than the budgeted £25,000 to ensure the waterproofing system was designed, installed and warranted by the same contractor. The move ensured no subsequent rectification of the pool

slab waterproofing was required, an issue on his previous schemes.

Rather than building a traditional in-situ concrete tank for the pool, he cut installation time by putting in a prefabricated stainless steel structure imported from Italy. Using his experience, he positioned the super-large water balance tanks outside the building rather than under the pool surround to avoid a potentially tricky insertion operation.

Beard also changed the pool slab depth from 600mm to 225mm on top of piles, saving cost and time, reducing the amount of concrete and rebar required, and derisked the waterproofing solution.

When the pool hall roof arrived on site from Germany with unperforated steel decking, he achieved the required sound dampening by placing acoustic panels on the pool hall walls instead. And even with £500,000 of additional works to incorporate, he still delivered eight weeks early and within budget.

Beard's digital innovation, which included virtual reality walkthroughs for stakeholders, helped the operator sell 800 memberships before opening.



★ **Nick Stoyles**
Willmott Dixon (now
CIRC Construction
Management)

Project: New Addington Leisure and Community Centre, Croydon
Scope: Construction of leisure and community centre, completed in 113 weeks
Client: Croydon Council
Contract: NEC 3 option A
Value: £33m

Nick Stoyles completed a defect-free leisure centre six weeks early for a client for whom deadline was as crucial as cost and quality. He saved the client millions by cantilevering the frame over a problematic soakaway and folding a housing subproject into the main build. His extensive research into reported defects on leisure centres and tapping of the experience of the supply chain and other construction managers underpinned his high-quality delivery.

Other finalists

Theresa McElean
MCIOB
Heron Bros,
Ards Blair Mayne
Wellbeing &
Leisure Complex,
Newtownards

Danni Oliveira
MCIOB
WRW Construction,
Travelodge,
Chippenham

Jonathan Roberts
MCIOB
Vinci Construction
UK, Barton Square,
Manchester

Paul Turner
MCIOB
Vinci Construction
UK, Time Square,
Warrington



Public and Infrastructure



★ **Kristian Cartwright**
MCIOB
Willmott Dixon

Project: The Box, Plymouth

Scope: Refurbishment of heritage buildings and construction of extension, completed in 131 weeks

Client: Plymouth City Council

Contract: JCT traditional

Value: £28m

This high-profile museum project marked the 400th-anniversary celebrations of the Mayflower setting sail from Plymouth for the New World, combining heritage with new build.



Kristian Cartwright's foresight and local knowledge were vital, for example, he picked out a cladding system suited to the marine environment which didn't bust the budget.

He developed the structural steel solution that allowed 14 ships' figureheads (weighing up to 2.5 tonnes apiece) to be suspended from a fire-rated slab.

Other technical challenges Cartwright overcame included squeezing a tower crane in between bomb-damaged ground, a 17th-century culvert and the site access road, designing the formwork for an 8m concrete cantilever 11m off the ground, and building gallery walls 20m long and 5m high without day joints to ensure the best finish.

His conservation experience and carpentry background ensured joinery-grade tolerances and finishes for humble materials and junctions not usually subject to such scrutiny, resulting in a high-quality delivery throughout.



★ **Russ Parks**
MCIOB
Willmott Dixon

Project: The Futurist, Demolition and Stabilisation, Scarborough

Scope: Demolition of theatre and cliff stabilisation works, completed in 76 weeks

Client: Scarborough Borough Council

Contract: NEC 3, Scape 3 framework

Value: £3.9m

A former infantry commander, Russ Parks took charge of this technically tricky demolition of a seafront theatre building combined with stabilisation works for the 40m-high cliff behind.

The location was surrounded by residential and business properties, and Parks engaged with the local community face to face, while keeping the site secure with round-the-clock CCTV, perimeter sensors and guard patrols.

He used geotechnical modelling to plan the removal of 6,000 tonnes of ground-weight from the upper cliff slope, which was stabilised with soil anchors. When the theatre was demolished, following an extensive demolition strip, work to remove the main retaining wall began, only for the ground sensors to reveal movement in the cliff slope. After a 12-week delay while various engineering solutions were considered, 34 pairs of 17m-long sheet piles were driven in to secure the slope and complete the job.

Other finalists

Kevin Alden
MCIOB
Sir Robert McAlpine,
Newcastle Civic
Centre

Paul Clarke
MCIOB
Willmott Dixon,
Liverpool Echo
Arena Car Park

Brian Hanlon
MCIOB
Highly Commended
Willmott Dixon,
Merseyside
Police Patrol Hub,
Liverpool

John Stedman
MCIOB
Morgan Sindall
Construction and
Infrastructure, West
Suffolk Operational
Hub, Bury St
Edmunds

Simon Whittingham
MCIOB
Willmott Dixon,
Exeter Police
Station



Office



★ **Kevin English**
MCIOB
Lendlease

Project: 2 Redman Place, Stratford E20

Scope: Construction of nine-storey office block, completed in 119 weeks

Client: Stratford City Business District

Contract: D&B

Value: £108m

Operational safety manager for the entire IQL development in Stratford, health and safety was a key consideration for Kevin English on this nine-storey, 280,000 sq ft office block construction.

He eliminated work at the leading edge wherever possible through innovation in design, fabrication and installation. With the project close to

a mainline railway, he had the entire superstructure screened from the ground floor up. As falling materials had been an issue during services installation on previous projects in the business park, he had service holes preformed into the risers, and used magnetic paper to further minimise the falling-object hazard.

Having concluded that the roof handrail design created an unsafe environment for installing the copings, the external cladding and the handrails themselves, English had permanent rails factory-installed as part of the cladding fabrication. The external copings were also factory-fitted.

He eliminated the need to install a plywood topping on falsework by using steel-frame table formwork. The system delivered substantial benefits not just in safety and quality but also in cost by taking a huge quantity of plywood out of the structural formation.

The result of all his efforts was a project with zero reportable incidents and an enviable safety record.



★ **Richard Kirkpatrick**
MCIOB
Skanska

Project: The Marq, 32 Duke Street, St James's, London

Scope: Construction of nine-storey block with 67,000 sq ft of office space, completed in 103 weeks

Client: The Crown Estate

Contract: JCT D&B

Value: £34m

Proactive and driven, Richard

Kirkpatrick delivered emphatically on programme and on budget within the confines of a difficult site in his first role as project director.

He also delivered outstanding quality, as is clear from the delighted client's rapid letting of the office and retail space.

Kirkpatrick's success has been a tribute to his expertise in building and leading the team, as well as his enthusiasm and tenacity, and his exceptional organisation and management skills.

Other finalists

Paul Epton
MCIOB
Robertson
Construction,
10 George Street,
Edinburgh

Daniel Miller
Wates Construction,
7&8 Wellington
Place, Leeds

Ian Rowe
MCIOB
Oakmont
Construction,
LONDON 1 Data
Centre, Dagenham

Craig Stokes
MCIOB
Laing O'Rourke,
The Brunel Building,
Paddington



ADAM HUSZKA

Residential Under 10 Storeys



★ **Michael Saunders**
MCIQB
Lovell

Project: Orchard Place, King's Lynn

Scope: Construction of 130 homes, completed in 164 weeks

Client: Borough Council of King's Lynn & West Norfolk

Contract: PPC 2000 with a wider developer management agreement

Value: £20m

Michael Saunders is in charge of an eight-project partnership with the local council in King's Lynn that will ultimately deliver 1,000 new homes, and he completed this first scheme with bar-raising success.

With a costly earthworks operation looming due to the high water table, tidal deposits, and clay and peat content, he ensured project viability through his design solutions. By installing prefabricated plastic

manhole chambers for the foul water sewers, he removed the need for piled foundations for the manholes or deep peat removal.

This also eliminated the risk of subsequent ground settlement disconnecting the drainage system from piled concrete chambers, simplified the sequencing, and was much faster to install than traditional concrete.

Other infrastructure innovations included geogrids to stabilise the ground and precast modular foundations built to meet the exact ground conditions and house types under construction.

On a site with a high flood risk but no budget to raise ground levels substantially, Saunders installed flood-resistant air bricks, doors and drainage valves and ran all the electrics 600mm above finished floor level.

With the council delighted with his work on the two partnership projects completed in 2019, and the third early in 2020, Saunders is likely to be kept busy with the next five in the pipeline.



★ **Dominic Jankowski**
MCIQB
Hill Group

Project: Fish Island Village, Stratford, London

Scope: Construction of 423 apartments in 16 mid-rise blocks, completed in 159 weeks.

Client: Peabody/Hill Group

Contract: JCT

Value: £105m

Dom Jankowski drove this 16-block project for 423 apartments while seeing off potential disruption. His rationalisation of the basement car park and his switch to a more effective piling method for its perimeter support rescued the scheme's finances. And his solutions to access challenges with the precast facade rescued its programme.

He finished four weeks early, still on budget and with a high-quality end product.



Other finalists

Tony Gallagher
MCIQB
Durkan, Manor Place Depot, Southwark

Matt Hamilton
MCIQB
Seacon, 6 Ilchester Place

Paul Jeal
MCIQB
St George West London, Beaufort Park

Tomasz Magiera
MCIQB
WRW Construction, Lakeshore – Copper Building, Bristol

Mark Woollen
MCIQB
Willmott Dixon, Winwood Heights, Nottingham

Residential Over 10 Storeys



★ **Patrick Phillips**
MCIQB
Durkan

Project: Atkins House/Benjamin House/Concert House/Orchestra House, Ilford

Scope: Construction of 354 homes in four blocks including a 24-storey tower, completed in 133 weeks

Clients: Durkan Estates, Southern Housing Group, M&G

Contract: D&B

Value: £67m

This former music building

redevelopment was a tough logistical challenge for Patrick Phillips, being located on a large brownfield site in a densely populated area, bordered by the North Circular road and with only one access route.

During groundworks, two wells were discovered under the building footprint, but Phillips redesigned the piling works, creating a larger pile cap to safely bridge the well gaps.

For the superstructure, he analysed different methodology options, before switching from traditional crane-assisted construction for the core walls to slipform concrete. This resulted in substantial cost and time savings by slashing the crane presence on site, with the 23 storeys of the tower's core built in just 30 days.

Another machinery innovation was the use of mast climbing work platforms instead of scaffolding. Easier to erect and dismantle, they brought significant gains in productivity, speed and efficiency. On an overhang on the 23rd floor, where the mast climbers couldn't reach, Phillips hung the scaffold for the cladding installation off that top storey.

To simplify facade maintenance as well as construction, he rationalised the balcony design, eliminating unnecessary variations to exploit offsite manufacturing, and fitting the balcony cladding at ground level.

Phillips completed the 354-home scheme on time and on budget. He even handed over two of the four blocks months ahead of schedule.



★ **Alistair MacPartlin**
MCIQB
JJ Rhatigan Building Contractors

Project: No.26, Dingwall Road, Croydon

Scope: Redevelopment of 16-storey office block as 183-unit residential tower with six-storey extension, completed in 122 weeks

Client: HSBC Pension Trust

Contract: JCT D&B 2011

Value: £36m

Alistair MacPartlin ensured issues did not turn into major problems on this scheme to remodel an office block as a residential tower by adding six storeys of new steel to an existing concrete frame. He fostered honest and transparent dialogue, and provided solutions to client problems, taking a positive approach even in the direst of situations. Following completion of this scheme, the client has asked him to lead another project.



GARY BRITTON

Other finalists

Brendan Conway
MCIQB
McAleer and Rushe,
Horizon Heights,
Liverpool

Caroline Heraghty
MCIQB
Ardmore
Construction,
Bowery Building/
Smyth Building,
London SW15

Terry Kirby
MCIQB
Berkeley Homes,
Birch House,
London SE3

Anthony Mitchell
MCIQB
ISG Construction,
LIV Student,
Sheffield

Gerald Ward
MCIQB
Bennett
Construction,
Mansbridge
House (Block A),
Battersea
Exchange,
London SW8

President's Award



**Professor
Charles Egbu**
CIOB

SETTING NEW STANDARDS

SIR JAMES WATES IS THE DESERVING FIRST WINNER OF THE CIOB PRESIDENT'S AWARD. PAST PRESIDENT **CHARLES EGBU** EXPLAINS

Change does not come easy. It takes a certain kind of person to lead from the front, to set the tempo from which their organisation, their people, and even an entire industry can follow.

Construction is transforming, and it needs to. We don't have nearly enough diversity in our workforce; we have only started to recognise the silent crisis of poor mental health and wellbeing. And these issues are holding us back from fulfilling our potential.

Which brings us back to why changing the way we do things is so important. But for change to take effect we need people who are bold enough to show us what is possible and how to take a different road.

It is for these reasons that I am delighted to award Sir James Wates the CIOB President's Award.

Under Sir James's stewardship the Wates Group is setting new standards for what can be achieved in terms of health and safety. Their Zero Harm Strategy is a success story in its own right, with the ambition to make their construction sites as safe as their offices, while placing an equal focus

on occupational health and work-related illnesses, like mental health.

We are seeing more construction businesses open up to the challenge of diversity and inclusion. Sir James's bold leadership has committed Wates to reflect society more fully by 2025. Making fairness and openness not just phrases but corporate objectives that are reported upon.

It is perhaps unsurprising that when UK government looked for a chairperson to develop corporate governance principles for large privately owned companies, they asked Sir James to lead the work. The resulting Wates Principles encourage high standards of corporate governance, and crucially reflect the impact that large privately owned companies have on society and the economy.

Many will know that outside of his family-owned business Sir James is a true champion for the industry. He has held numerous positions at various leading bodies. He was recently chair of the CBI Construction Council and the co-chair of Infrastructure Exports: UK. He is currently chairman of the BRE (Building Research Establishment) Trust.

Please do join me in congratulating Sir James Wates as he receives the CIOB President's Award. ●

Professor Charles Egbu FCIOB is vice chancellor at Leeds Trinity University and past president of the CIOB.



"It is a great honour to receive this award. I became a CIOB associate in 1985, so for 35 years I've been seeing the great work the CIOB does. It is a beacon for quality and ethics in our industry. Of course, we can't stand still. We have to keep working on being safer, less tolerant of poor quality and more inclusive.

The work the CIOB does, the work we all do together, is vital to bring about that change. Thank you to everyone who really cares about what they do and thank you for this wonderful award."

**Sir James Wates CBE FCIQB, Wates Group
CIOB President's Award winner**



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Rising Stars



NEW STARS RISING

AFTER MORE THAN FOUR DECADES RECOGNISING PROFESSIONALS AT THE PEAK OF THEIR CAREERS, THE CONSTRUCTION MANAGER OF THE YEAR AWARDS IS NOW REWARDING THOSE STARTING OUT IN THE INDUSTRY WITH THE NEW RISING STAR CATEGORY. IN ITS AUGURAL YEAR, THERE WERE TWO GOLD WINNERS AND ONE SILVER



★ **Kelly Attwood**
Morgan Sindall

Kelly Attwood is a graduate site manager at Morgan Sindall. After her graduation in summer 2018, she has progressed rapidly at the business and been given increased responsibility and accountability, recently leading a £10m design-and-build, three-storey modular building.

On the Vandyke School project in Bedfordshire, Attwood had to think on her feet and adapt quickly, redesigning an attenuation tank

which clashed with existing below-ground services, a process involving dialogue with civil engineers and the local water board. She has managed all the groundworks, including piling, a 960 sq m concrete pour, plus the installation of the 87 modules which form the teaching block – successfully overcoming the new challenges posed by covid-19.

On another project nearby, at Goldington Academy, Attwood had to carefully sequence works around the school's need to remain operational. Working with the client, she was able to foresee issues that were not spotted at tender stage and identify and mitigate the most significant risk factors.

Attwood has been praised for her “exemplary attitude” and “inquisitive nature” by colleagues, as well as a “true passion” for construction. She is a construction ambassador through CITB GoConstruct, attending schools to give careers talks, and also speaks at Women in Construction events to help change female perceptions of the industry.



Far left: Kelly Attwood’s Vandyke School project in Bedfordshire

Above: Vasiliki Bowler managed a £20m programme for Royal Bank of Scotland

Right: Annabel Clark worked as a BREEAM assessor on a Met Office project in Devon



★ **Vasiliki Bowler**
Faithful+Gould

Vasiliki Bowler has worked in the built environment for six years and been with Faithful+Gould for the past four. She administers private and public sector projects from RIBA Stage 1 through to 7 and has managed projects including for the London School of Oriental and African Studies (SOAS) and the London Metropolitan University (LMU). Clients expressed appreciation for Bowler’s ability to meet expectations “precisely and consistently”.

On the SOAS project, she produced a comprehensive assessment report to explain the impact that a last-minute change instruction would have on time, cost and quality, and developed an online audit trail to facilitate collaboration and help identify conflicting priorities and overcome pain points.

At LMU, her strategy helped the client achieve its project objectives while ensuring students’ lessons would continue uninterrupted throughout the construction process. She facilitated a value engineering workshop, which focused the project team on finding alternative products, rather than just cost cutting, and saving the client £300,000.

She also won praise from client Royal Bank of Scotland for her management of an intricate programme of works worth £20m, consisting of 12 projects across four different buildings.

Colleagues say Bowler “stands out in the business by dint of hard work and her commitment to upholding industry standards”. She

supports professional development and advancement of best practice within F+G, represents the business at industry events and promotes diversity and recruitment of more females into construction through her talks at graduate careers events.



★ **Annabel Clark**
Faithful+Gould

Annabel Clark is a senior consultant in Faithful+Gould’s strategic asset management team. She has gained recognition in the business across the full spectrum of consultancy skills, from technical to commercial, with expertise in sustainability, life cycle costing and asset management.

She has shown a particular flair for environment issues, working as BREEAM assessor and advisory professional on a Met Office project in Devon, where both buildings achieved an Excellent rating. She is “proud” to be working in an industry that is striving to cut carbon emissions.

Other finalists

Sam Bambury
MCIQB
Barratt

Cedric Fournier
Prime Pillar
(Mauritius)

Ellie Carswell
Faithful+Gould

Nicola Hodson
MCIQB
Manchester University NHS Foundation Trust (formerly Wates)

Graham Kinnear
MCIQB
Graham Kinnear Property Consultants

Mercy Ogunnusi
MCIQB
Robert Gordon University

Lindsey Platt
MCIQB
Orbit Housing Association

Benjamin Valliquette
Gillam Group (Canada)

Robert Watson
NHBC





HS2 SETS PACE ON CONSTRUCTION'S DIGITAL JOURNEY

THE UK'S BIGGEST INFRASTRUCTURE PROJECT IS A HOTBED OF INNOVATION WHICH COULD TRANSFORM THE WIDER INDUSTRY. **CM** FINDS OUT MORE FROM HEAD OF DIGITAL ENGINEERING DR SONIA ZAHIRODDINY

Whatever the detractors might think of its very concept, HS2 is an ambitious project – and digital engineering is at the heart of it.

The project's numbers are dizzying: 343 miles of railway track, 45 miles of tunnels, 37 miles of viaducts, 119 miles of cutting, 120 miles of embankment and 30,000 people working on it.

Among them is Dr Sonia Zahiroddiny. As HS2 Ltd's head of digital engineering, it's her task to drive BIM and related technologies through the project. Whatever legacies the mega-project leaves behind when complete, the demonstration of the benefits that digital engineering can bring will be to the fore.

"It is one of our ambitions to make sure we can leave that legacy. Professor Andrew McNaughton, who at the time was our technical director, used to say that BIM is the lifeblood of HS2. And it has truly been seen that way from day one," she states with evident passion.

"But since then the thinking has matured, and we have rebranded the terminology, or the way that BIM is perceived, to become more than just 3D modelling, to become digital engineering. And the thinking is still maturing and is still evolving."

Zahiroddiny describes many digital developments being introduced on HS2 as "fairly alien" to the sector.

40

Estimated days saved through 4D modelling of construction sequencing on HS2 phase one

“It’s effectively a change programme, and with any change programme, there can be huge cultural and, in some cases, commercial barriers to overcome,” she explains.

“We find that people engage when they see the value of digital or BIM, or how the wider digital landscape can add to their day-to-day jobs. To bring people into the [digital] fold, you’ve got to make sure the messaging is simple. They’re interested in knowing ‘how does this make my job easier?’

“We’ve drawn up use cases, case studies and personas to try to put context around digital engineering. So if I’m a project manager, what is [digital engineering] to me? By adopting a wider change approach, combined with upskilling, we’re hoping that we can overcome some of those barriers.”

HS2’s digital engineering upskilling platform, originally unveiled in 2016, was given a fresh launch with further resources in October 2020.

It provides free-to-access e-learning and resources to the supply chain. There were 11 e-learning courses available as *CM* went to press, ranging from developing a BIM execution plan, via BIM documentation and roles and responsibilities, to understanding HS2’s information delivery cycle. The platform also includes a jargon buster.

Zahiroddiny adds: “The platform clarifies our strategy and targets, our implementation methods and what that means to contractors.

“The portal is an engaging and innovative learning platform, and we will continue to update it with more courses. There is an appetite out there for people to want to improve or increase their digital maturity.”

She is proud of HS2’s visualisation hub, describing it as “the first of its kind, a unique platform, which has

never been used on previous major projects”. The hub was designed by a consortium led by PCSG, the digital built environment consultancy recently bought by Bentley Systems.

“The visualisation hub brings our vision for a virtual railway to life, and will form the basis of our digital twin,” Zahiroddiny says.

“With the scale and the complexity of HS2, we are producing huge amounts of data – millions of records, terabytes of data. And currently these various data sets are coming from our contractors in various formats, and are stored, managed and interrogated in a number of very specialist systems across the organisation.

“Our contractors are already reporting increased productivity from 5D modelling and quantity take-offs: a reduction in man-hours of up to 50% to 60% across the programme”

Dr Sonia Zahiroddiny, HS2



HS2 CEO Mark Thurston visits the Old Oak Common station site using an augmented reality headset

“Ultimately the visualisation hub is a web-based platform that acts as a ‘top hat’. It’s basically an integration platform that brings all of these data sets together, and thus provides us with multiple views of the railway as it’s being planned and designed and constructed. And it really helps us to remove some of the complexity we’re currently facing in accessing and analysing some of this data.”

She continues: “The hub is the convergence of GIS and 3D modelling, CAD, BIM and asset information, because it brings all of these various elements together. But it also pulls in some of the project controls data (cost data and some of the health and safety incident data), and, once we have our data-streaming platform stood up, some of the telemetric data as well.

“The hub should, by default, make it simpler and quicker to find the data, to understand the situation or context of the data. So you can look for an asset, know where it’s located, see all the graphical representations of it, see all the related documentation, see how much we forecasted, and see how much the actual spend is.

“It just makes it much easier for you to view, interrogate and analyse the data in a single, unified platform.”

Zahiroddiny reports that HS2’s digital strategy is already delivering tangible benefits. ▶

“I’ve really tried to look outwards and say: ‘Look, if you’re really going to push beyond the mandate and become more digitally enabled, then that goes beyond just the 3D models”

Dr Sonia Zahiroddiny, HS2

“Our contractors are already reporting that the use of 5D modelling and quantity take-offs have increased consistency and standardised the process of creation of design,” she says. “And this has resulted in increased productivity: they’re reporting a reduction in man hours of up to 50% to 60% across their stages of the programme.

“Another example is extensive use of 4D modelling in construction sequencing. Close integration with the project controls team has enabled improved visual identification of areas of risk, allowing us to mitigate some of these risks before we start construction – and that’s resulted in roughly 40 days of time savings.”

She thinks there’s a two-way exchange of intelligence and experience happening between HS2 and its tier 1 contractors: “There’s collaboration and innovative thinking both ways: they’re responding to our requirements, but at the same time, they’re coming back and saying ‘we can go over and above’, or ‘this is what we can do’, or ‘these are some of the benefits we are seeing’. It has been a joint effort.”

Included in that joint effort is Zahiroddiny’s 20-plus team: a team with a mixture of both construction and non-construction backgrounds.

She explains: “I’m not an engineer by profession myself – I come from a computer sciences background.

The team come from learning and development, or psychology, or data architecture and data sciences: these are all the sorts of skills that you don’t typically associate with digital engineering or rail infrastructure more broadly. But within the CAD and GIS areas, the majority of them have been within the rail sector for a while.”

Warming to her theme, she adds: “I’ve really tried to look outwards and say: ‘Look, if you’re really going to push beyond the mandate and become more digitally enabled, then that goes beyond just the 3D models – they’re just nice 3D pictures, and there’s a lot more involved.

“And therefore it does require a broad sets of skills – for example, enterprise architects, or data architects or process managers who understand how to do process mapping who will help us re-engineer some of the old-school ways of doing things. So the fresh perspective that this diverse range of people have brought in is a fresh eye on things, and they have been rightly challenging some of the ways we have been doing things.”

Aside from the visualisation hub and the upskilling platform, she emphasises her team’s greatest success: “Raising the profile around the importance of data and digital: that’s been a huge undertaking. And it’s been driven both bottom up and top down.”

Digital engineering, she adds, will also be key to how HS2 is operated after construction is completed.

“With the digital twin, we’re not only going to have this holistic view of the railway, to validate and verify that it meets all of our requirements and that we can operate it, but we’re also leaving something for our end-user, the state operator, to take and run with,” she says. ●

Five digital innovations keeping HS2 on track



The Krokodyl robot in action

1 On board robots for TBMs

The Bouygues, Sir Robert McAlpine and VolkerFitzpatrick JV has developed an on-board robot for tunnel boring machines (TBMs). The Krokodyl robot will carry out repetitive tasks such as removing wooden spacers between tunnel segments on the 16km-long Chiltern tunnels.

2 4D learning tech for safety

The Balfour Beatty Vinci JV is using immersive technology from 3D Repo to improve site safety. The technology, cloud-based SafetiBase 4D, sees workers enter a 360-degree virtual version of a site where they can identify safety issues.

3 AI-enabled estimating

An AI-enabled carbon and cost estimating tool is being trialled by the Skanska Costain Strabag JV. It automates BIM processes so that different design options can be simulated using different types and quantities of construction materials.

4 IoT sensors in cement mixers

Tech startup Cloud Cycle’s IoT solution uses sensors fitted inside cement mixers to monitor the quality of the concrete mix. Shortlisted for HS2’s Innovation Accelerator programme, Cloud Cycle estimates it could reduce concrete used on phase one by up to 420,000 tonnes.

5 Drones for tree-planting

Another firm picked for Innovation Accelerator backing is Dendra, which has created a drone and AI platform to plant and monitor the 140-mile green corridor along the route. The system learns how to identify the 46 tree species planted and monitor their health.

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TOLENT DIGS DEEP IN DURHAM

THE GIANT MILBURNGATE DEVELOPMENT ON DURHAM'S RIVERSIDE HAS REQUIRED A COMPLEX INFRASTRUCTURE PHASE, INCLUDING A MONSTER RETAINING WALL.

JAMIE HARRIS SPEAKS TO MAIN CONTRACTOR TOLENT'S PROJECT MANAGER



“On a project like this you become blasé about the normal challenges.”

Michael Rutherford is project manager for Tolent Construction on the 450,000 sq ft, £120m mixed-use Milburngate development in Durham. The north-east-based firm was appointed main contractor on phase one of the scheme at the beginning of 2019, which includes construction of

70% of the entire development, with the project commencing the following June.

Situated against a picturesque backdrop which includes Durham Castle and Durham Cathedral on the banks of the River Wear and located on a UNESCO World Heritage site, the scheme comprises a 92-bed hotel, 5,000 sq ft of speculative office space, three build-to-rent apartment blocks with 153 new

The superstructures of the retail units and hotel have now been finished

homes, and 60,000 sq ft of retail space, including restaurants and a cinema.

The Milburngate development will sit proudly in the heart of the historic city centre's landscape upon completion. And despite global pandemic-related setbacks for the sector, this project remains on track to meet its targeted finish date in November this year.

£120m

Tolent was appointed in early 2019 to the £120m mixed-use development

Complex groundwork

The scale of the development is impressive, but it has also posed several technical and logistical challenges due to the compact nature and local geography of the site. The most demanding facet of the work has been the design and construction of a 236m-long, three-storey-high retaining wall which runs along the southern and western boundaries of the site.

The construction of the retaining wall was so complex that Tolent deemed the original solution unachievable at tender stage.

“The original programme, out of a 26-month project, required 14 months to build the retaining wall – but we got that down to 10 months,” explains Rutherford.

The complexity originates from the topography of the site. The wall twists and turns around the site boundary, and from west to east, the elevation difference is around 20m. Because of this, the wall is designed in 10 different clusters across the different directions and elevations. The team also needed to factor in a changing soil profile; housing was previously situated at the southern end, while a gas works used to sit at the northern end.

“The other thing to consider is that we’re also in a flood zone,” says Rutherford.

Sitting adjacent to the river, the project team faced a variable hydrogeology profile – the flow of

“The original programme, out of a 26-month project, required 14 months to build the retaining wall – but we got that down to 10 months”

Michael Rutherford, Tolent Construction

groundwater at the site – which would impact how the piles for the retaining wall could be installed.

Rutherford’s team at Tolent, together with its subcontractors and specialists, including VolkerGround Engineering and BGP, engineered a solution which took each of these factors into account.

The numbers illustrate the sheer scale of the project. The wall required 20,000 cu m of concrete, with 1,500 CFA piles ranging from 350mm to 1,200mm in diameter – and with 164 of the larger piles installed to a depth of 25m.

“At that point,” explains Rutherford, “the piles were sufficiently strong enough to retain the bank side, but not with the water pressure included into it.”

As a result, the piles were installed with a 250mm gap between them in order to allow water to flow through and relieve any groundwater pressure on the retaining wall.

“The depth of the piles created its own problems with regard to the



Groundworks required the use of the second-largest piling rig in the UK

Project team

**Milburngate
Phase One**

**Client:
MGH CARD LLP**

**Client and
project architect:
FaulknerBrowns
Architects**

**Main contractor
(shell and core):
Tolent Construction**

**Structural
engineering:
Atkins / Billingham
George & Partners**

Value: £84.5m

**Programme:
128 weeks**

**Contract:
Design and build**

**Subcontractors:
Groundworks:
Wyn Construction
Steelwork:
Finley Structures
Building services:
SES**

The 236m-long, three-storey-high retaining wall was the most demanding facet of the work

reinforcement cage lengths and how we get them down,” says Rutherford.

“We created a vibration plate to take the cages down, because once you drop them down about 20m, under their own weight, they tend to stick, so we have to vibrate them down into the cage for the last 4 or 5m.”

The reinforcement cages weighed up to 6 tonnes and measured 22m. Tolent believes that they are among the heaviest and longest CFA cages to ever be installed in the UK.

Besides the wall, there are another 1,700 ground-bearing CFA piles which support the main development. These range from 300mm to 900mm and run to a depth of 12 to 20m.

Logistical issues

To complete this infrastructure work, Tolent required the use of the second-largest piling rig in the UK. The team deployed three piling rigs and a coring rig for nearly six months.

“Everybody is impressed at the design of the wall itself, but the logistics are just as significant,” explains Rutherford. ▶





Procuring enough concrete to maintain the project's piling programme became a major obstacle. There are limitations on heavy-duty vehicle (HDV) movements within the city centre for Tolent to comply with – a problem compounded by the World Heritage nature of the city. In addition, the sheer volume of concrete would be challenging to obtain locally.

"We would have taken up the entire 100% capacity of all three local concrete plants in the area," says Rutherford. "They just weren't going to do that."

And even if Tolent was able to procure an adequate supply and adhere to vehicle movements, the speed of delivery would have an impact on the project team's ability to install the cages.

"With the length of the cages, the slump of the concrete – the consistency of freshly made concrete – was significant. If it reduced, you simply wouldn't get the cage in. If the vehicle got caught in traffic, time taken would allow the slump to slow down."

The decision was made to place a concrete batching plant on site.

"We were producing anywhere between 160 to 200 cu m of concrete a day for a seven-month period," says Rutherford.

Tolent estimates that this reduced HDV movements by up to 40% across the first nine months of the project – at its busiest point, the onsite plant kept one wagon load every 15 minutes off Durham's roads.

CGI showing how the completed development will look

"From an economical perspective, you need to be producing enough volume for an onsite concrete batching plant to be a viable option," says Rutherford. "It doesn't lend itself to a normal piling project."

But the use of the plant next to the river added additional risks.

"We've had to create a space for a flood mitigation scheme," explains Rutherford. "The original idea was to put the plant in this space, but there was a risk of getting contaminant into the river. We decided to flip our thinking; we placed all the site accommodation into this zone to eliminate this risk."

Covid-19 impact

As with any active construction site working in 2020, Milburngate was also subject to covid-19 problems. Despite an initial slowdown in March, Rutherford says that the team was lucky to have avoided significant problems as work was still in its early stages.

"Covid didn't hit us as hard this year because the work we were doing at the time was with the retaining

wall. We were working outside and we were able to socially distance."

Rutherford believes that this year could be more problematic, should restrictions continue to be enforced.

"By the middle of 2021 we will have a workforce of up to 450 people on site – we will have in excess of 1,000 individual rooms where people will be working in close contact with each other.

"The challenges also come with welfare facilities. People have to get washed, changed; they need somewhere to sit and eat. We have tripled the size of our facilities to accommodate this increase in workforce in the new year."

With the completion of the retaining wall in mid-2020, Tolent began work on the superstructures of the development. The podium holding the retail units has been completed, while work on the residential building structures has begun. The steelwork of the hotel is also complete, allowing internal work to begin.

Phase two of the development, involving three office blocks, is due to go out to tender later this year. ●

Aerial view of the Milburngate site





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REWILD THING: BUILDING BIODIVERSITY ‘NET GAIN’

NEW ENVIRONMENTAL LEGISLATION MEANS MANY PROJECTS WILL HAVE TO DELIVER A 10% BIODIVERSITY NET GAIN – LIKELY ENCOURAGING AN INCREASE IN ‘COMMERCIAL REWILDING’. **CM** REPORTS

The new Environment Bill became law on 31 December and will oblige many construction projects to deliver a 10% ‘biodiversity net gain’. It is a significant leap forward from the current situation, where developers only have to ‘mitigate’ the impact of their projects.

This will affect any landowner seeking planning consent under the Town & Country Planning Act, for

new build or refurbishment. In some cases, developers will be able to achieve the 10% biodiversity net gain on site. However, most projects will struggle to achieve this, believes Jon Davies, head of environmental consultant RSK Wilding.

“In practice many developers will need to pay to offset their impact on biodiversity,” he says.

“Many developers will need to pay to offset their impact on biodiversity”

Jon Davies, RSK Wilding

“One option is a reforestation or wetland creation elsewhere in the world. However, the biodiversity metric used by the Department of Environment, Fishing and Agriculture (DEFRA) values offsetting less the further it is from the source of the impact. That’s partly to encourage UK biodiversity improvement following the prime minister’s September commitment to ensure that 30% of land is protected for nature by 2030.

“Local biodiversity offsetting replaces a habitat with a new one nearby. These high-intervention approaches can require significant upfront capital costs, and it is not always easy to recreate specific habitats.”

A less familiar, but more cost-effective and natural approach is commercial rewilding, argues Davies.

“It’s a term often associated with reintroduction of animals like beavers and even wolves but is more commonly a ‘ground-up’ approach, creating the conditions for the land to regenerate itself naturally and be recolonised by insects and plants,” he explains.

Achieving biodiversity net gain through commercial rewilding requires firstly, identification of ecologically degraded land local to the construction project, then employing ecologists and other environmental and land management specialists to design a rewilding strategy for the site that suits its specific conditions.

“The ecologists will advise on the number of biodiversity units – the

30%

30% of UK land must be protected for nature by 2030, the government announced in September

scorecard used by DEFRA to measure net gain – that are likely to be achieved on the land, plus the carbon credits and other ‘natural capital’ benefits could be accrued from the commercial rewilding,” says Davies.

“Once the strategy is decided, the establishment phase will likely involve stripping the topsoil to remove chemical-laden substrates, creating depressions, bunds and other features to increase the micro-habitats, or blocking drains in moorland to re-wet the land and reawaken dormant peat.

“The perimeter would then be fenced off, and for the next 20 to 30 years the land would be left alone. Ecologists would monitor progress to ensure that the figure quoted for the net increase in biodiversity units is actually achieved by the rewilding plan.”

The DEFRA methodology for calculating biodiversity units is complex. It depends on the biodiversity present on the site, how rare existing habitats are, the current use of the area and the condition it is in.

Davies says the current market value of a biodiversity unit is “around

£10,000”, so the creation of 100 units would be worth £1m of biodiversity offsetting revenue over the next 20-30 years. “However, it all depends on the types of habitat being created, land values, or the pricing structure chosen by the relevant local authority if the developer is paying for an offset,” he says.

So how do developers identify land away from their site for commercial rewilding?

“There are many landowners, particularly farmers, who are keen to carry out rewilding work on land that is unproductive and difficult to making a living from,” explains Davies.

“Rewilding has the potential to become an important income stream for farmers, especially given the uncertainty around agricultural subsidies post-Brexit.

“As commercial rewilding gains momentum, some developers may group together to pay for larger rewilding projects, which not only offset current developments but ‘bank’ biodiversity credits to cover future projects,” he adds. ●

Balfour Beatty’s rewilding in King’s Lynn

Balfour Beatty is delivering a biodiversity net gain as part of its work at Islington pumping station for King’s Lynn Internal Drainage Board in Norfolk.

Although not a contract requirement, the contractor proposed creating new habitat areas to compensate for biodiversity losses caused by the construction work on the River Great Ouse. The client welcomed the idea.

The initiative involves creating enhanced grassland areas, a reedbed and installing barn owl boxes on a plot to the west of the pumping station site.

Balfour Beatty is using the Natural England Biodiversity Metric 2.0, which calculates biodiversity losses and gains as a result of development or land management changes, to plan and measure the impact of the work.

Construction on the Islington pumping station on the River Great Ouse; the rough grassland will be enhanced as part of the biodiversity net gain work



Location of the biodiversity net gain areas: enhanced grassland (in green); reedbed creation (in orange); barn owl boxes (yellow); plus the location of the pumping station (red)



Nottingham’s city-centre rewilding plan



A plan to rewild part of Nottingham city centre was unveiled last month by a landscape architect and the local wildlife trust.

The Broadmarsh shopping centre was left half-built when retailer Intu entered administration last June, and the local council has not yet decided on a future for the site. Meanwhile, Nottinghamshire Wildlife Trust has worked with Influence Landscape Architects to reimagine the

space with wildlife habitats, reflecting the site’s history as a wetland, while also offering potential for urban farming.

Influence managing director Sara Boland says: “It became apparent in the first lockdown that as more people sought outdoor spaces, our understanding of the social and spatial implications of covid-19 were only just being realised. Open space in cities is often formal and structured and this is an opportunity for a completely unfettered and wild approach to a substantial space.”

She adds that rewilding of urban spaces is more economical when compared to the aftercare requirements of heavily designed landscapes.



Jacqueline Backhaus
Trowers & Hamlin

IS THIS REALLY THE END FOR SECTION 106?

WILL THE NEW NATIONAL INFRASTRUCTURE LEVY REPLACE SECTION 106, OR COULD IT REAPPEAR UNDER A NEW GUISE? **JACQUELINE BACKHAUS** EXAMINES THE GOVERNMENT'S PLANNING WHITE PAPER



Consultation closed on 29 October on the *Planning for the Future* white paper, which proposed reforms to modernise the planning system. Some of the most radical ideas suggest replacing both section 106 (s106) planning obligations and the community infrastructure levy (CIL) with a single national infrastructure levy.

While we await the detail, there are concerns as to whether this will provide a simple and effective system to secure the delivery of local affordable housing, sustainable transport and other local infrastructure.

Delays in planning permissions due to s106 negotiations are not uncommon, but delay is often due to site-specific negotiations that take account of detailed viability issues. Replacing s106 with a mechanism that secures necessary infrastructure and allows for site-specific mitigation would not

be easy. Testament to this is the CIL regime, introduced in 2010 after years of debate – remember planning gain supplement – and which sought to address identical concerns. CIL is largely perceived to have failed due to its complexities and inflexibilities.

Many will be pleased to see the back of CIL and developers will no doubt welcome changes such as payment of the new levy at the point of occupation. But the government will need to learn lessons from the CIL experiment. Viability issues and local priorities mean that a consistent and simple system will be extremely difficult to implement. Questions remain over how the new levy would work in areas with lower land values. Some may be unable to recover sufficient developer contributions to pay for new infrastructure with a fixed levy, meaning more prosperous areas benefit, widening the infrastructure divide.

The white paper envisages delivery of infrastructure sitting with local authorities. They will be able to borrow against the levy to fund new infrastructure but may be reluctant to do so if expected levy receipts do not cover forecast expenditure.

All this could have a significant impact on developments and local communities where infrastructure needs are considered necessary to make a development acceptable in planning terms. Developers may find themselves restricted from starting work and may miss the flexibility that s106 offers.

While the white paper appears determined to abolish s106, a footnote states that “a Section 106 planning obligation could still be used to secure a covenant on the land, where necessary” for onsite affordable housing. This appears to keep the door open for s106 in some form, albeit not for wider infrastructure delivery.

One issue not addressed in the white paper is the upside of the s106 system. A government-commissioned study, *Incidence, Value and Delivery of Planning Obligations and Community Infrastructure Levy in England 2018-19*, published the same month, acknowledged that “developers value the flexibility of s106, allowing both parties to reach pragmatic solutions to site-specific issues, even though the negotiation of s106 planning obligations can result in delay”.

To name but a few, s106 can secure local employment, sustainable transport mitigation, highway improvements, delivery and management of open space and community facilities, carbon offsetting and connection to district energy networks, plus mitigation of any impact on biodiversity and protected assets. Once again, s106 seems to be in the firing line and its vital and flexible role in delivering infrastructure provision and many other community benefits have been completely overlooked.

That's why s106 is more likely to be reformed or to reappear under a new guise than be abolished completely. ●

Jacqueline Backhaus is a partner at Trowers & Hamlin.

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BIM & Digital



Peter Caplehorn
Construction
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Dr Steven Yeomans
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LEXICON'S ROLE IN HARMONISING PRODUCT DATA

FACED WITH THE CHALLENGES OF DELIVERING HACKITT'S 'GOLDEN THREAD' AND THE CLC'S POST-COVID RECOVERY PLAN, THE LEXICON PRODUCT DATA PLATFORM WILL BE CENTRAL TO CONSTRUCTION'S DIGITAL FUTURE.

PETER CAPLEHORN AND DR STEVEN YEOMANS EXPLAIN



Construction is the backbone of our economy, yet it is one of the few sectors yet to realise the value of digital technology and data. The reasons are many, but the consequences are plain to see, nowhere more clearly than in the non-collaborative, unstructured approach taken to the curation of critical product data.

In 2016, work began on a solution to help address this problem. LEXiCON, a project initiated by the Construction Products Association (CPA) and BRE, envisaged a standardised process and software platform that industry could use to agree common terms which would in turn be used to create product data templates (PDTs), freely available for any company to use.

Fast forward to 2020 and while the challenge of fragmented product data

persists, the construction landscape has changed considerably. Covid-19 has set a wrecking ball to the construction economy – and triggered a re-evaluation of many practices and assumptions we've long taken for granted.

The *Roadmap to Recovery*, developed earlier this year by the Construction Leadership Council (CLC), sets out a bold and ambitious plan for reform, with commitments to “drive up the use of digital technologies across clients and throughout the supply chain” and enable “better data and information sharing across the built environment to improve efficiency, productivity, sustainability and building safety”.

LEXiCON has now taken on a new significance. Part of the Construction Innovation Hub's UKRI-funded programme,

in partnership with the CPA, it will play a key role in helping the sector to realise the transformation agenda set out in the CLC Roadmap.

Working with key initiatives and partners across industry, such as the National Digital Twin and the UK BIM Alliance, we are creating a solution which will allow product data – vital to ensuring quality, assurance and building safety – to be integrated, coordinated and made machine-readable.

Harmonising how the sector collects and manages product data will also be key in supporting the development of a 'golden thread' of information that can be traced back to a credible source, as called for by Dame Judith Hackitt in her Independent Review of Building Regulations and Fire Safety following the Grenfell Tower fire. As well as providing construction firms and clients with the practical means of feeding into the golden thread, LEXiCON will also provide consistency and certainty and, in the longer term, improved lifecycle asset management functionality.

After the upheaval of 2020, it is difficult to forecast what the future holds. However, we can safely predict that the future of construction will be digital, with a growing consensus around the need to accelerate the sector's journey of transformation and a clear mandate from government in the recently published *National Infrastructure Strategy*.

Against this backdrop, the Hub and CPA will be stepping up our engagement with industry in the months ahead, to ensure that LEXiCON is a key enabler of the sector's transformative journey. While many industries are now reaping digital rewards, some parts of construction are still paddling in the shallow end. We will not catch up overnight, but we can make that journey easier for ourselves by tackling the remaining roadblocks, including coming together and agreeing how we curate crucial product data. ●

Peter Caplehorn is chief executive of the Construction Products Association and Dr Steven Yeomans is the BRE's digital construction lead at the Construction Innovation Hub.



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Legal

Since the Grenfell fire in 2017, more and more claims for replacing defective cladding are reaching the courts. Depending on the case, it is important to understand how contribution claims work.

In one current claim for cladding replacement, the main contractor has agreed with the client to replace defective cladding on a building for £2m but is now seeking to recoup the cost from the cladding subcontractor. In turn, the subcontractor is seeking a contribution from the novated architect under the Civil Liability (Contribution) Act 1978, alleging that the practice was negligent in specifying the cladding. The act provides that “any person liable in respect of any damage suffered by another person may recover contribution from any other person liable in respect of the same damage (whether jointly with him or otherwise)”.

However, no claim under the act can be brought later than two years after the principal claim is resolved, by either a judgement of the court or an arbitrator’s award, or where the parties settle the dispute by agreeing the amount of compensation. The ‘compensation’ includes a party either paying a sum of money, or paying in kind, such as carrying out specific remedial works.

Contribution claims under the act

The case of *RG Carter Building Ltd v Kier Business Services Ltd (formerly Mouchel Business Services Ltd)* [2018] considered a similar situation where, instead of paying, the main contractor agreed to carry out remedial works, and subsequently sought a contribution from the designer. The court found that the two-year limitation started when the scope of remedial works was agreed.

This raises two practical points regarding contribution claims under the act.

Firstly, in cases where the principal claim has been decided or settled for a sum of money, it is important to have some detail of how the agreed sum was

Cladding remediation and contribution claims

THE COURTS ARE CURRENTLY CHOCK-FULL OF DEFECTIVE CLADDING CASES. **GUY HIGGINBOTTOM** LOOKS AT HOW CONTRIBUTION CLAIMS WORK



Horatia House in Portsmouth had its cladding removed for fire safety after the Grenfell tragedy

“No claim under the act can be brought later than two years after the principal claim is resolved, by either a judgement of the court or an arbitrator’s award, or where the parties settle the dispute by agreeing the amount of compensation”

calculated, in order to apportion an appropriate amount to the party from whom the contribution is sought.

If there is no detail to the agreed sum, then the party seeking the contribution will often have to engage an expert to calculate its quantum. This can be expensive after the event and given the relative shortness of the limitation period (only two years as opposed to six or 12), limited time may restrict the accuracy of the expert’s assessment. The parties to the principal claim can agree a ‘round figure’, adjusting the quantum with a balancing figure, which can be a lump sum or calculated as a percentage addition or discount.

Secondly, in cases where the claim is settled by the defendant carrying out remedial work at its own cost, any contribution sought from a designer by a contractor is highly unlikely to be a physical one. Instead, the contractor will be seeking a financial contribution.

Urgent remedial works

Therefore, it is essential to price the agreed scope of remedial works for which the contribution is sought. In cases where the remedial works had to be undertaken urgently, either by necessity or under the terms of settlement, the party seeking the contribution should describe the circumstances under which the remedial work was procured. For example, if they had to be carried out quickly, then it is unlikely the contractor would have time to obtain competitive tenders.

It is in all parties’ interests that the contribution claim can be resolved as swiftly as possible. This is not always achievable, as the contributing party may challenge the extent of its liability or the quantum of the contribution being sought. The earlier that expert opinions can be obtained, for both liability and quantum, the better the parties and their legal advisors will be placed to raise and manage claims under the act. ●

Guy Higginbottom is an independent contract consultant.



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CIOB Community

Education

Global Student Challenge returns for 2021

CIOB calls for entries for the seventh year of the online construction management simulation contest

“The winning team will receive £2,000 in prize money at the 2021 Members’ Forum in Sydney”



DGC Toronto from George Brown College were last year’s challenge winners

The Global Student Challenge opened for 2021 on 1 December. Run by the Chartered Institute of Building (CIOB) since 2014, the annual competition challenges students in the built environment to run a virtual construction company.

2021 sees the seventh year of the competition, and the challenge is seeking teams made up of full-time students studying a degree in the built environment. After six weeks of competition, the leaders are given the opportunity to



compete in finals that attract talent from around the world. Previous winners have included Glasgow Caledonian University, George Brown College and Universitas Indonesia.

The competition utilises Merit, an online game which simulates the management of a construction company. The winning team will receive £2,000 in prize money at the 2021 Members’ Forum in Sydney (dependent on covid-19 travel restrictions).

The competition closes for entries on 14 April 2021. Teams will then be able to access game software, followed by six rounds of competition taking place over as many weeks.

Finalists will be announced on 25 May 2021, with the finals set to be held in June 2021. ●

Register now on the Global Student Challenge web site:
<https://gsc.ciob.org>.

Education

Yorkshire Student Challenge faces off lockdown

Virtual format enabled event to go ahead in lockdown

The November lockdown put paid to plans to run the Annual Yorkshire Student Challenge (run in conjunction with Sheffield Hallam University) in person, but the Sheffield Hub Committee, determined to keep this experience running for students across Yorkshire, converted the format to work as a virtual

challenge. They delivered as much of the real construction site experience as they could.

Five colleges from across the region submitted teams, working on the logistics of running a site in a constrained space featuring limited access and while keeping the surrounding area open for business.

Members of the Alliance team working on the project, including Dan Marsh from BAM Construction, provided a briefing to the students, supported by Sheffield Hallam University senior lecturer Tim Jones. The judging panel involved members of the Alliance team and the Sheffield Hub committee including chair John Caudwell.



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

Heritage

CIOB's own 'Indiana Jones' takes up new role

Member John O'Keeffe takes up CEO post in Ireland's Discovery Programme



"Dr O'Keeffe's eminent standing in archaeology in Ireland and his track record in the Northern Ireland Civil Service will be a major asset to the Discovery Programme"

Paul Walsh, Discovery Programme Board

The Discovery Programme at the Centre for Archaeology and Innovation in Ireland has appointed CIOB member Dr John O'Keeffe as its new chief executive officer.

The Discovery Programme's mission is to explore Ireland's past and its cultural heritage by conducting advanced research in Irish archaeology and related disciplines and by disseminating its findings widely to the global community.

Before taking his new post, O'Keeffe (pictured) was a senior manager in the Northern Ireland Civil Service, principal inspector of historic monuments and has been assistant director of the Historic Environment

Division (formerly the Built Heritage Directorate) since 2007.

With more than 25 years of postgraduate professional experience in archaeology, he has developed an expert knowledge of heritage management, academic research and built heritage conservation, alongside a practical application of core personnel and project management skills. He holds an honours degree in Archaeology (awarded 1995), and a PhD in Archaeology and Heritage Management (awarded 2008).

O'Keeffe joined the Department of the Environment in Northern Ireland in 1998, having been involved in contract archaeology following graduation from the Queen's University of Belfast in 1995. He has worked across all aspects of archaeology and the management of historic monuments in Northern Ireland.

In announcing the appointment Paul Walsh, acting chair of the Discovery Programme board, said: "Dr O'Keeffe's eminent standing in archaeology in Ireland and his track record in the Northern Ireland Civil Service will be a major asset to the Discovery Programme at a time of change and development for the organisation.

Before taking up the post in November 2020, O'Keeffe said "I'm honoured to be offered the post, looking forward to joining a great team, and ready to go!" ●



LEADER FOR NEW HIGHLANDS HUB

Alasdair Murray, principal building standards surveyor, Highland Council, has been announced as the chair of the Highland and Islands Hub.

Sharon Barrie, programme manager (property), Highland Council, takes on the role of vice chair.

The hub launched in October and officially opens on 1 January 2021.

It will run a series of events to establish the network, welcome new members and discuss issues of specific interest.

"We are always ready to welcome more people to the group and to serve on the committee, and I would be happy to speak to anyone who is interested in being more involved with the CIOB," said Murray.

Health

New open-source building standard seeks models

Health-based certification

CIOB member Dr Darren Allen DBA FCIOS MRICS, development manager with Genesis Property, is looking for buildings to become the first to promote a new ground-breaking building standard.

With a strategy to engineer safer built environments for people and organisations returning to their offices, the Immune Building Standard has been developed as an open-source global standard for the built environment.

The standard is a set of measures, technical solutions and facility management practices to certify how built environments can withstand present and future health challenges and minimise the impact of a pandemic such as covid-19, and other bacteriological or toxicological threats.

The standard is inspired by technologies and procedures successfully applied in hospitals and 'clean rooms' and adapted for use in commercial real estate development.

Immune can be used by any international building assessment and certification entity to certify buildings at any stage of their life cycle and type, such as new, in-use, or a regeneration project.

The current open source document is dedicated to office buildings only and it can be adapted to certify other building types such as hospitality, retail, healthcare, education and residential. Buildings must meet set criteria and will be measured on a score index resulting in either a resilient, powerful or strong label.

As the standard is open source, more contributors are also being sought, to join the scientists, engineers and architects already on board.

Allen says the standard is attracting widespread attention: "The Immune Building Standard is the first standard dedicated to health within the built environment. We have seen a large interest and engagement from leading tier 1 consultants, architects etc. and have been interviewed by media like FT, Reuters, Wall Street Journal, Bloomberg, Sky, to name a few."

Contributors span the globe and include Mace in London. For full details see www.immune-building.com.



Renovation

Castle for keeps

Eastern Hub runs virtual visits to Morgan Sindall's Norwich Castle project for members

The Eastern Hub is running a series of virtual site visits to Norwich Castle where a £13.5m renovation has begun. This project will run into 2022 and the CIOB will follow the project through to completion.

The National Lottery Heritage Fund supported scheme recently

"The plans are set to make all five levels – from basement to battlements – fully accessible for the first time in the structure's history"

reached a significant milestone, when project contractor Morgan Sindall Construction commenced the substantive work required to recreate the Keep's original 12th century layout.

Ensuring the trip back through nine centuries can be enjoyed by the maximum number of visitors is integral to the project's aims. The plans are set to make all five levels – from basement to battlements – fully accessible for the first time in the structure's history.

Later phases will see innovative uses of projections and digital technologies to animate the building with the sights and sounds of King Henry I's East Anglian fortress. ●



New start

Member inspires hope amidst redundancy

Paul Tedoré's story shows that change can be positive

If covid has left you facing redundancy then take heart from CIOB member Paul Tedoré. Now director of Fir Tree Project Services, Tedoré (pictured) was made redundant at age 50 in October 2018 after around 35 years in the joinery, shopfitting and fitout industry.

He had worked his way up to director position for a specialist division of an international organisation but when he faced redundancy he says he "readily grabbed the opportunity to set up on my own".

"Losing the security of a regular wage, sick pay, paid holiday, company car, pension and health insurance was a little daunting. But it was down to me to make something from it.

"I had always thought that I would become my own boss in my mid to late 50s. When this opportunity arose it seemed right."

Paul says contacts made over his career helped hugely. "When I announced that I was working for myself I had quite a few calls to offer support and work. My career has been quite diverse, so some potential clients homed in on my bid support experience, others my estimating or quantity surveying skills and others my project management capabilities.

"In this way I was able to quickly start work within a month of redundancy and earn a wage.

"Even the company I was made redundant from has produced joinery for a project I

was project managing on a cruise ship, so I became their client.

"Every single one can be an influencer in your success. A quiet word from a fixer to the boss can make a difference to you getting the next project."

Until 2020 Tedoré was chair of the CIOB Southampton Hub. The last two years as Fir Tree Project Services has seen him travel across the globe working on projects ranging from luxury residential, marine outfitting, a fitout of Harrods and commercial joinery projects.

He even sailed the lockdown storm. "I am a limited company, trading for less than two years and therefore I was not able to gain assistance from grants or furlough myself, but I haven't needed it."

Dublin

Irish Hub swaps chairs

Derek Cassidy takes over the reins from John Sweeney as chair of the Dublin Hub



Incoming chair Derek Cassidy (left) and his predecessor John Sweeney



“Cassidy says qualifications and professionalism will be more important than ever and that he would like to strengthen ties with the Belfast Hub”

Derek Cassidy becomes the new chair of the CIOB Dublin Hub in January. He has worked in the construction industry for over 25 years, beginning with Sisk, and is now operations manager with Ardmac.

For his year ahead, Cassidy says qualifications and professionalism

will be more important than ever and that he would like to see more Fellows and would like to strengthen ties with the Belfast Hub.

Cassidy will be taking the reins from John Sweeney, contracts manager with Collen Construction, who chaired the hub for two years, seeing through the changes of OneCIOB and the year overshadowed by covid-19.

Sweeney was chair for events in 2019 including the largest CMYA event to date in Ireland when Alan Barnes was crowned winner, the Members’ Forum in Edinburgh and the Global Student Challenge.

And in 2020 he steered the committee through planning around covid-19, CPDs and planning virtual events. CPD attendances rose sharply through the use of webinars.

He will be still involved in the CIOB as PR champion and member of the CIOB Education, Qualifications, Standards and Practice Board.

On handing over, Sweeney wished Cassidy “the very best of luck” and added: “I hope that you enjoy it as much as I did.” ●

CIOB IN NORTH BUILDS LINKEDIN

CIOB in the north is working to develop its LinkedIn Group – growing membership and sharing key updates.

Open to anyone interested in the activities of the CIOB in the Northern Region, this group features key policy messages and events, celebrates achievements of members and CBCs, and facilitates discussions on topical issues facing the industry.

You can search for your local group on LinkedIn.

Novus

Novus launches recruitment drive in Ireland

Call to young professionals



The CIOB’s Novus is seeking young construction professionals to join the community in Ireland. Novus provides the opportunity to have a voice within the

CIOB and the wider industry.

James McAtasney, a project manager at Northern Ireland Housing Executive, recently joined Novus in Belfast. He has worked with members to deliver presentations promoting the benefits of CIOB membership to university students.

McAtasney says he has been excited to get involved and urges others to follow suit. “I now have the opportunity to share personal experiences with the next generation of members and work alongside like-minded professionals who I can count on to provide me with advice and support when needed,” he said.

“I am hoping to develop my own personal attributes throughout my time with Novus and build a network of connections within the industry. This will not only benefit my progression but potentially enhance future career opportunities as well.”

If you are interested in joining, contact Julie Fitzsimmons: JFitzsimmons@ciob.org.uk.

Talk

Trio of experts talk safety

Dawber, Cymler and West will lead in-depth webinar

The Midlands and Eastern calendar is kicking off the new year with a webinar, Three Leading Experts Talk Building Regs & Building Safety, where three prestigious speakers will talk live.

CIOB Trustee Peter Dawber will give an overview of his involvement with the CIC final report *Setting the Bar*, which outlines the industry response to Dame Judith Hackitt’s

review. On behalf of the CIOB, Dawber chaired Working Group 9 – Site Supervisors.

He will also talk about the PAS Competence Framework for construction professionals being developed by the BSI – the follow-up work to *Raising the Bar* – on which he is representing the CIOB.

Richard Cymler, regional director at Ball & Berry, will provide a

Building Regs update, followed by Damien West, area manager and head of fire protection, prevention and fire investigation with Nottinghamshire Fire & Rescue Service, who will talk about the Fire Service approach to firefighting in tall buildings.

The webinar will take place on January 13 at 12pm. See Diary Dates on p55 for more details.

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Chartered status

CIOB north scores CBC hat trick

Three welcomed on one day

The CIOB in the north welcomed three new CBCs on the same day at the end of 2020: H&W Surveying and Consulting, PA Jessop and PKL Partners.

H&S Surveying and Consulting works mainly in the insurance sector for clients of large loss general perils (fire, flood, escape of water) but has seen growth in non-insurance work, particularly student accommodation.

Director Keith Wakeley said there were various reasons for wanting to achieve CBC status. "It was primarily to demonstrate professional competence in the marketplace in which we work; it is reassuring for current clients and future clients to work with a chartered company," he said.

"We are also looking to grow the business over the next few years, and we felt achieving CBC status would strengthen our position to attract the right candidates to allow us move forward as a business."

Established in 2015, PA Jessop provides project/design management, technical support, planning and delay analysis to construction firms, as well as project monitoring and clients' clerk of works role. Director Phil Jessop said becoming CBC was "a pivotal milestone". "Having chartered status gives our clients an extra level of confidence in the company, knowing that they are using a CIOB-endorsed business, and from a marketing perspective, this will allow PA Jessop to grow from strength to strength," he said.

PKL Partners was established in 1982 and offers services across a variety of sectors. Director Kevin Lockley said: "Achieving CBC status demonstrates to clients, both old and new, that we are constantly evolving to achieve the highest standards possible with a mark of distinction that they know they can trust." ●

Webinar

Novus members offer tips on the industry

Leeds young professionals speak about starting out

The Leeds Novus group held a webinar titled 'Welcome to Construction: Your First Years in the Industry' in the autumn.

Three local young professionals, chaired by Sam Dibaj, chair of Leeds Hub, spoke about their experience of starting out in the construction industry, offering tips on how to get the best start on career paths and things they wish they had done differently.

Lydia McGuinness, co-chair of G4C Yorkshire and Humber and trainee site manager at Henry Boot Construction, described the challenges and benefits of studying and working at the same time and raised her experience of being a young female in a male-dominated industry – particularly working on site.

Danielle Fleming, senior building surveyor at East Riding of Yorkshire, discussed changing direction in her career and the huge benefits of mentoring and being an ambassador to young people.

Jake Morrish, chair of Novus Leeds and assistant site manager at Redrow Homes, described what a normal day in his role looked like and also talked about some of the benefits of working towards his professional qualification with CIOB.

The session was really well received by those who attended and will be available online.

"We felt achieving CBC status would strengthen our position to attract the right candidates to allow us to move forward as a business"

Keith Wakeley,
H&S Surveying
and Consulting



BSG Awards

Dorset CBC wins H&S award

Spetisbury Construction recognised for best practice

Dorset-based SME Spetisbury Construction – a CIOB CBC – has received an award from the UK's largest health and safety consultancy, the Building Safety Group (BSG).

The accolade, for best practice in health and safety, was presented to director Martyn Openshaw (pictured) and managing director Justin Ives by BSG last autumn.

Ives credited the team and said he was proud to win the award. "Building Safety Group has been a long-standing partner of ours and have assisted in achieving and maintaining this standard. It is great to have achieved this recognition when they have so many other good member organisations," he said.

The BSG Awards is a national celebration of businesses' dedicated commitment to Health and Safety in construction.

Apology

In *Construction Manager*, November/December on p50 the picture caption erroneously names Paul Mansell. There was in fact no photograph of Paul. We apologise for any inconvenience this caused.

Diary dates

Highlights of the CIOB Calendar for the coming month. All events are online webinars unless otherwise stated

Three Leading Experts Talk Building Regs and Building Safety

January 13, 12-1.30 pm

Join us for this unique opportunity to hear from Peter Dawber, Richard Cymler and Damien West, talking about their input into current legislation, recent changes to the Building Regulations, and how the industry can help the Fire Service with the challenges they face (see p51 for more details).

Contact: gfloyd@ciob.org.uk

Towards Net Zero Carbon

January 20, 9-10.15am

Wales has strong sustainable policies and targets including 'Towards Zero Carbon by 2050'. ICE Wales Cymru is hosting an interprofessional debate to discuss these, with a keynote address by Sophie Howe, future generations commissioner for Wales.

Join us and other members of the Built Environment Alliance Cymru (ICE, CEW, RICS, RTPI, CIH, RSAW and CIAT) to debate these matters that affect the future of us all.

Contact: vcoxon@ciob.org.uk

Identifying Confined Space Hazards, Risks and Control Measures.

January 21, 1-2pm

The aim of this webinar is to make delegates aware of:

- What confined spaces are;
- What hazards and risk require controlling;
- What competencies are required for entry into a space; and
- Why rescue plans must be in place.

This presentation will be delivered by Peter Jackson, health and safety advisor and compliance training officer for Jackson & Jackson.

Contact: kpercival@ciob.org.uk

Immune – World's First open-source Healthy by Design Building Standard

January 28, 2-3pm

Join us to discuss the Immune Building Standard – the first open-source standard for the built environment that is designed

with health in mind. Dr Darren Allen DBA FCIQB MRICS, Immune project director and development manager of Genesis Property, will tackle the launch of the standard, what Immune is, how it works as well as the objectives and the benefits (see p49 for more details).

Contact: wmarshall@ciob.org.uk

Transgender issues in the workplace

January 28, 6-7pm

Employment solicitor David Gibson and fashion designer Lydia Bellamy have teamed up to deliver an informative and practical guide to transgender issues in the workplace.

This key area of employment law has received increased prominence following the groundbreaking case of *Taylor v Jaguar Land Rover* where JLR was fined £180,000 for breach of the Equality Act 2010.

Gibson will highlight the key legal principles and Bellamy will guide you through practical dress code issues to ensure that transgender workers are respected within the workforce.

The seminar will last approximately 50 minutes and there will be time for questions.

Contact: dthorpe@ciob.org.uk

Daytona Speedway Design & Build

February 3, 6.30-7.30pm

CIOB past president Chris Soffe will discuss the reconstruction of the iconic grandstand at Daytona International Raceway in Florida. The owner's challenge was to deliver this 101,000 seat facility by an immovable deadline for the 2015 Daytona 500 race.

Construction had to take place through two hurricane seasons, and allow for two reduced capacity Daytona 500s and other race meets to take place without interruption.

The success was in the pre-planning, the design, the risk allocation and of course a fabulously committed project team.

Contact: bgrange@ciob.org.uk

Kwesi Amsterdam MCIOB

Meet a member



Kwesi Amsterdam, design and build contractor, Guyana

Why did you choose the construction industry? What else might you have done for a living?

My professional career started off in teaching. The same year I completed secondary education I taught maths to grades 9 and 11 students and technical drawing. I attended classes in the afternoon to further expand my technical drawing (architecture and construction) skills.

These two activities continued simultaneously for two years and at the end of the technical drawing course, I enrolled at the university and pursued a BSc in Architecture. Because this was a full-time course, I had to resign from my teaching job.

I did not choose construction, it chose me. I ended up in the technical drawing class in high school because my friends were in that class. I had no clue or interest in technical drawing; I was just following the crowd. However, because one of my personal attributes is determination – always completing what I have started – I remained and persevered in those classes and grew to have an understanding and appreciation of the nature of technical drawing.

If I did not gravitate to the construction industry, I would have most likely remained in the teaching. In the near future, I will return

to teaching/lecturing to give back to society my fair share of knowledge and experience gained over the years.

What do you like about the industry and what would you like to see change?

I love the satisfaction of a completed project and that every project is unique: it could be the design, the challenge it presents in thinking or methodology, the location that differs, or the attitude of the work force when measured against a new project or where a client is hard to deal with.

In my location, Latin America/Caribbean and more so in Guyana, there is a need for improved construction training. I think the custom of the day is that everyone is repeating the styles, patterns and approach learned over time. This means, if an error was practised in the past, it would become a normal and acceptable mistake of today.

I would therefore like to see a greater presence and involvement of CIOB locally, as a brand ambassador in construction training.

What do you do in your spare time?

I love movies and watch my favourites repeatedly. I also read: I've just finished *The 7 Habits of Highly Effective People* by Stephen R Covey, and am currently reading *Choice Theory* by William Glasser MD.



Me and my project

University challenge

Alex Drouet MCIQB, design manager with Barnes Construction, talks us through enabling works at Clare College, Cambridge

We were appointed in September 2019 to deliver the pre-construction phase of works for the £12.4m extension and refurbishment works of Clare College's Old Court buildings, which included an enabling period of 16 weeks to construct two bridges, one of which would link the Fellows' Garden with the Master's Garden and the working area in the North Passage.

The 57m long bridge, which was built and craned into place overnight by Mabey, now sits between the Garret Hostel Bridge and Clare College Bridge: the oldest bridge in Cambridge. This means that for the first time since the 1960s, the Middle River of the Cam between mill pond

PAUL NIXON PHOTOGRAPHY



Top and top right: The bridge spans the Cam from the Fellows' Garden to the Master's Garden

Above: Alex Drouet, design manager, Barnes Construction

weir and Jesus Green weir has 10 bridges, rather than nine (excluding other construction works that we are unaware of, of course!) Now this phase is complete, plant and machinery will be able to access the Master's Garden at the back of Old Court, the heart of Clare College, to start work in earnest.

We are working with an impressive consultancy team, made up of London architecture firm Witherford Watson Mann and two Cambridge-based businesses, structural engineer Smith and Wallwork and Henry Riley, which is the cost consultant and client project manager. Max Fordham will provide the services design for the main works.

Bridging the gap

The original plans included using the existing Clare Bridge – the oldest in Cambridge and a Grade I listed structure – for site access. We worked with the incumbent design team and our temporary works engineer Gawn Associates to develop an alternative proposal utilising a temporary bridge, with site access via the Fellows' Garden.

There were huge co-ordination issues that required complex discussions and a collaborative approach from everyone from the college's gardening committee, the environment agency, highways, planning, arboriculturists, neighbouring colleges, statutory utilities companies and archaeologists.

Our approach to this was always open and collaborative – our pre-construction team were full-time on the project from September 2019 through to August 2020.

Once on site, we encountered issues with unknown tree roots and CBR issues for the 500 tonne crane that lifted the 28m long span over the River

“The project has been a real-life example of true collaboration between client, professional team and contractor”

Alex Drouet, Barnes Construction

Cam during the early hours of the morning. All issues were resolved by having clear and focused leadership, a superb supply chain with a ‘can-do’ attitude, and a dedicated site team to make it happen.

Despite having to stop works due to tree root issues, our subcontractor agreed to manually undertake the reduced dig in the Fellows' Garden, wheelbarrowing tonnes of spoil out and tonnes of type 1 aggregate into the site to maintain programme while we waited for the tree issues to be resolved.

This was just one example of the real-time problem-solving that helped deliver the bridge lift on programme.

Another major headache included concluding the second stage pricing, and the enabling works construction during the first lockdown in April. Our supply chain was resolute and ensured we were able to deliver the second stage figure within budget, as well as the bridge lift on programme in preparation for the main demolition and substructure works progressing in November.

The project has been a once-in-a-lifetime experience, and a real-life example of true collaboration between client, professional team and contractor – and an example of how well a two-stage method of procurement works if managed and operated properly. ●



Partnership



Carving a role

PAYE Conservation on how one apprentice stonemason's experience highlights a way forward for closing the skills gap

For years we have read about the threat posed by the skills gap and the potential cost to organisations and the wider economy, but the gap remains. Craft skills are not only essential to maintaining and growing our infrastructure, but also ensuring our built heritage is preserved for future generations.

PAYE Conservation, a specialist division of PAYE Stonework and Restoration, is proud to have such an important role in the preservation and protection of historic buildings and we are committed to the development of craft apprentices through our own apprentice scheme, our talks in schools, college open days and our relationship with the

Above right: Senior stonemason Mat Millen gives a letter-carving tutorial

Below: Apprentice Dylan Manktelow displays the finished result

Institute of Apprenticeships and Technical Education.

Last year we were thrilled to be a gold sponsor of the CIOB Conservation Conference, which highlighted the loss of traditional craft skills for historic buildings and discussed the modern role of the apprentice. It considered the role in a changing landscape and how we employ traditional skills in modern methods of working. The simple truth is that the landscape evolves, and we must with it, but without a skilled workforce the work will grind to a halt and cracks, both metaphorically and physically, will appear.

Every year offers fresh challenges in securing the interest of young people into our apprentice scheme, but we do succeed more often than not. Ahead of the CIOB Conservation Conference we created a short promotional video to help draw attention to the conference but also to bring into focus the person on everyone's mind: the apprentice.

We filmed a letter-carving tutorial with our apprentice Dylan Manktelow and senior stonemason Mat Millen in our masons' workshop at West



"I find the process of a skilled craft to be interesting and the results are satisfying"

Dylan Manktelow, PAYE Conservation

Smithfield, one of London's highest-profile sites. It is being converted into an exciting new venue for the Museum of London and is where Manktelow is learning his trade.

His decision to pursue a career as a stonemason was influenced by the opportunity to be creative in his work. "I find the process of a skilled craft to be interesting and the results are satisfying," he said. He is particularly looking forward to "working on historic buildings and learning from experienced stonemasons".

As he embarks on his journey, we are committed to helping him realise his ambition. Our investment in our apprentices is an investment in the future of skilled craft, but we need more young people like Dylan Manktelow. The challenges of making what we do attractive to a school leaver are laid bare, but thanks to the initiative and efforts across the sector, and to events like the CIOB 2020 Conservation Conference, the way forward is clearer than ever. ●

To see the letter-carving demonstration, visit www.paye.net/ciob-conference-2020.





Training & Recruitment

Job spotlight

Katherine Mortlock

Senior building surveyor (Norfolk, Suffolk & Essex Coast), National Trust

TRUST ISSUES

FROM CONSERVATION REPAIRS TO MANSIONS TO MANAGING BUDGETS, KATHERINE MORTLOCK'S WORKING DAY AS A BUILDING SURVEYOR WITH THE NATIONAL TRUST IS NEVER DULL



Describe a typical day in your job?

As with many surveying roles, there is no such thing as a typical day. My role is a great mix of site-based activity and desk time.

Yesterday was a site day; I try to make best use of my time while at a property, so I visited a couple of our holiday cottages to assess reported damage following the recent storms. I then had a pre-start meeting with a contractor and tenant farmer for

an insurance-funded repair project on a barn. The afternoon was spent in one of our mansions with a structural engineer and conservation specialist, discussing repairs to ornate plaster ceilings.

The remainder of the day was spent returning missed phone calls and answering emails.

Does working for the National Trust demand specialist skills/knowledge?

Yes, obviously traditional skills and conservation repairs feature strongly. There is a wealth of knowledge within the National Trust, so if I don't know the answer, I have a number of willing colleagues who are happy to share their knowledge.

Having said that, there are also the maintenance issues that you would expect at any site: water leaks, roof leaks and sewage problems to name a few, it's just that some of the infrastructure is more historic and this can present additional challenges.

What are the challenges/rewards of your role?

Every job has its challenges, and this one is no different; from ensuring we are getting value for money while also maintaining a high quality of workmanship to managing budgets for short-term cyclical tasks, the challenges of my role are probably very similar to most other building surveying roles. As for rewards – I don't think I will ever lose the thrill of being able to access all areas of these amazing buildings.

To work on these iconic buildings, knowing that the work I do will ensure they continue to survive and be enjoyed by people for years to come makes this my dream job. ●



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Prison break

Stephen Simpson offers an insight into Cidon Construction's positive experience of working to rehabilitate ex-offenders



Seetec Justice, a training organisation, is committed to working with employers to break down barriers when it comes to hiring

ex-offenders. There are ex-offenders who may have the right skill set required for their trade but often struggle to access new work opportunities once they are released.

According to the Ministry of Justice, only 17% of prisoners leave with a job and half of employers say they cannot see the value in employing someone who has been in prison.

At Cidon we are bucking this trend, having taken on 12 ex-offenders with the support of Seetec Justice. The successful partnership started back in 2018 after I heard a radio discussion about helping ex-offenders to rehabilitate, find work, access housing and break the cycle of crime.

More businesses like us need to get involved, we're only a very small cog in a huge wheel. If we can take 12 ex-offenders in the space of 18 months, then a lot can be done. It's important to educate other business leaders about the benefits of employing ex-offenders.

Seetec believes that ex-offenders are one group in our society that can sometimes feel they are forgotten during challenging social and economic times. Only by challenging existing perceptions about ex-offenders and stressing that many have valuable skills, either acquired before entering prison or gained while in prison, will more progress be made in eliminating barriers to work.

In an 18-month period, Seetec Justice supported 200 prisoners in preparation for their release, arranging day release opportunities and engaging with local employers. This resulted in nearly half of them securing offers of employment for when they were released, nearly three times the usual employment figure for male prisoners.

One ex-offender taken on by Cidon was concerned about his chances of finding employment after release. James heard about the rehabilitation programme in prison and, as he had acquired labouring skills while serving time, felt it was a great opportunity.

He joined us on release and has gone on to gain an NVQ in joinery. James has appealed to companies which aren't part of rehabilitation programmes: "Everyone deserves a second chance, Cidon have invested in me and that has boosted my confidence. I think other employers should follow their example."

Stephen Simpson is a director of Cidon Construction.

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