

MEMCOM MAGAZINE OF THE YEAR

# CONSTRUCTION MANAGER

NOVEMBER/DECEMBER 2021  
For members of the CIOB

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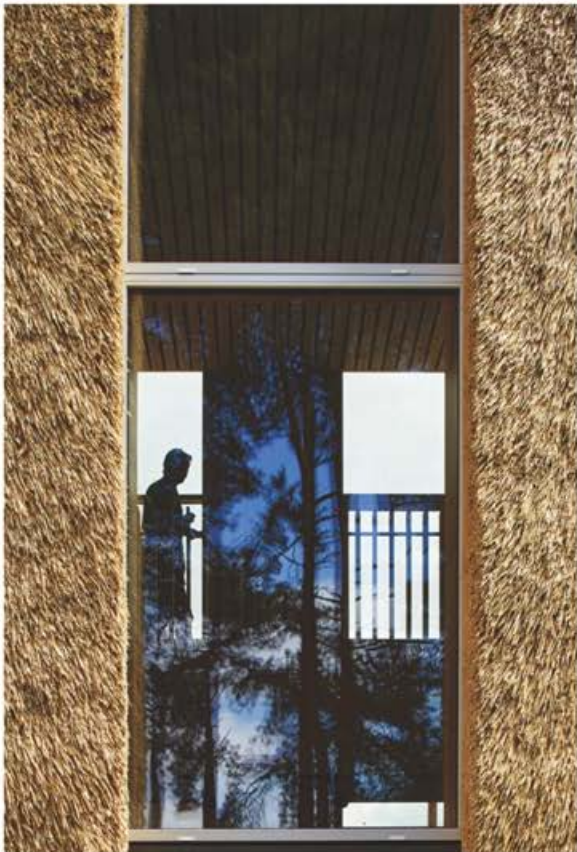
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IVAR KRAAL



DENNIS GILBERT



PATRICK DEGERMAN

### ▲ 17 sustainable projects selected to feature in COP26 virtual exhibition

A total of 17 exemplary sustainable projects will feature in a virtual exhibition during COP26, the UN Climate Change Conference. The exhibition, called Build Better Now, aims to showcase the role buildings and cities can play as a solution to climate change.

International projects to be showcased include: the Sara Cultural Centre, Skellefteå, Sweden (pictured above), one of the world's tallest timber buildings; Powerhouse Brattørkaia, Trondheim, Norway (top right), the world's northernmost energy-positive building; The Enterprise Centre, University of East Anglia (left), built by Morgan Sindall, which features traditional materials including thatch cladding; and the Heart of School, Green School Bali, Indonesia (top left), built using bamboo.

Victims of modern slavery will be able to get help discreetly with the aid of a new SOS hand signal, launched by Stronger Together with the help of the CIOB and CITB



### ▲ Office scheme to honour sculptor with suspended artwork

A piece of public art dedicated to West Midlands artist John Pickering is to be installed at the 103 Colmore Row office development in Birmingham. The 1.5 tonne, 7m-long sculpture, Equinox, will be suspended 9m above the ground. It is being manufactured by fabricator Structural Stairways in Brierley Hill, Dudley, using solid steel tubes and laser-cut metal sheets.



### ▲ Multiplex targets more female employees with flexible working plan

Multiplex has adopted a new flexible working plan called 'Multiple Flex' as part of a bid to increase the number and influence of women working in the business. Options under the scheme include flexitime, early Friday finishes, weekend time off in lieu, nine-day fortnight compressed hours, teleworking and four-day weeks, and remote working. (Pictured, Multiplex package managers Emily Mitton and Libby Clark).

### ► The Art of Building photo competition opens

The Art of Building, the world's biggest photography competition for the built environment, has returned and is open for entries. Last year's winners included James Retief, who was awarded the Judges' Prize for his artistic representation of Big Ben and its ongoing renovations. The free competition is open until 20 November. For more details and to enter, log on to [www.artofbuilding.org](http://www.artofbuilding.org).



JAMES RETIEF



## CIOB members: 'Building Safety Levy should be client's responsibility'

CIOB members share their views on proposed Building Safety Levy amid government consultation

**Members of the Chartered Institute of Building (CIOB)** have broadly agreed that the proposed Building Safety Levy should be the responsibility of the client.

The finding came following a survey of CIOB members ahead of the institute's response to a consultation on the design of the levy by the Department for Levelling Up, Housing and Communities (DLUHC).

While the CIOB, as a professional body, is unable to comment on the design and scope of the levy, the survey was created to collate members' views should they not have time to complete the full consultation.

Respondents were a mixture of developers, housebuilders,

*Members agreed the Building Safety Levy rate should be based on floor area and location*

consultants, main contractors and housing associations.

There was also broad agreement among correspondents that calculation of the levy should be based on floor area rather than per residential unit. On the levy rate, it was largely agreed that it should be varied depending on location, to reflect differing property values.

And respondents made it clear that hospitals should be exempt from levy charges, while some also felt that affordable housing and refurbishment projects should be exempt.

In the survey, respondents speculated that businesses might try to avoid paying the levy, potentially because they are already paying other levies, such as the Apprenticeship and CITB levies. The CIOB highlighted that businesses that are in scope of the levy might tweak their construction programmes (for example, building to certain heights that do not fall in scope) to avoid paying the levy. The CIOB called for government to monitor this and ensure that buildings meet the housing demand and are constructed with safety and quality in mind.

David Barnes, policy and public affairs manager at the CIOB, said: "The Building Safety Levy is intended to be placed on developers who seek regulatory permission to build certain high-rise residential buildings in England.

"We agree with the need to find a balanced approach to remediating historical building safety defects that do not punish either industry or households in a considerable way. However, there is a risk that unless there is buy-in from those expected to pay the levy, it could be perceived as another cost to business and, in time, will ultimately be passed onto consumers through increased prices." ●

## CM wins best magazine award

Judges praise 'great content' at 2021 Memcom event



*Construction Manager* has picked up the prized Best Magazine award at this year's Memcom Membership Excellence Awards.

The event, which celebrates outstanding achievements among membership organisations, trade associations and the wider not-for-profit sector, was held at the end of September at Hilton London Bankside.

The headline award for Best Magazine for a Professional Association or Membership Organisation with a circulation of over 20,000 went to the Chartered Institute of Building (CIOB) and publishing partner Atom, for *Construction Manager*.

The Memcom judges said: "A clear content strategy made this entry stand out and the focus on giving members a voice was impressive. This was the overall winner because of its arresting graphics and photography, great content and coherent messaging. The issue focused on women in construction successfully presented the many facets of the industry."

The judging panel comprised a range of CEOs and senior directors from across membership organisations in the UK.

Caroline Gumble, CIOB chief executive, said: "We are very proud of our magazines and the important role they play in keeping members up to date and at the cutting edge of the industry. The feedback we get from the CIOB community tells us *CM* magazine stands out as a trusted source of news and information. I am delighted the team have been recognised for consistently publishing a magazine that informs, inspires and helps bring our community together."

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 Profile

## 'THE FUTURE WILL BE HERE BEFORE YOU KNOW IT'

AS THE BUILDING SAFETY BILL PROGRESSES THROUGH PARLIAMENT, CHIEF INSPECTOR OF BUILDINGS PETER BAKER TELLS **NEIL GERRARD** WHY CONSTRUCTION PROFESSIONALS NEED TO START PREPARING FOR CHANGE NOW

**"We will have a role in keeping an eye on the whole system. Where it is not working, we will make recommendations to the secretary of state to improve the system"**

**Peter Baker, HSE**

After the challenges of the last 18 months, 2023 may feel a long way off. But chief inspector of buildings Peter Baker is keen to remind built environment professionals that's the year the new building safety regulatory regime will arrive – and with it, many changes for the industry.

Baker, a veteran regulator at the Health and Safety Executive (HSE), was appointed to his new role in early 2021. Since then, he has been establishing a new Building Safety Regulator (BSR), following the Grenfell Tower disaster and recommendations in Dame Judith Hackitt's *Building a Safer Future* report.

"HSE has been involved with the government's response to Grenfell from the day after the event itself," says Baker. "We also started to get involved in the government's reforms when Dame Judith Hackitt started her review. Dame Judith was the chair of the HSE so it was logical that we would get involved to support the review and to help the Ministry for Housing, Communities and Local Government (MHCLG) to decide how best to respond."

In her recommendations, Hackitt suggested that HSE should become part of the future regulation of high-rise residential buildings (HRRBs), with the secretary of state recommending in January of last year that the HSE house the new BSR.

The BSR has already taken on board around 100 people. When the regulator becomes fully operational, that could rise to as many as 700.

The fine detail of its role depends on any amendments made to the Building Safety Bill. Baker expects its remit to be broad. While its focus will be on providing a new regulatory regime for HRRBs, based on a series of gateways (see box), other functions will cut right across the built environment.

The two other broad limbs to the BSR's functions will be competence and oversight. The BSR's role in promoting competence will apply to the whole built environment, not just HRRBs.

"This is all to do with the competence steering groups' and BSI's work on competency frameworks," Baker explains. "The BSR will be responsible for holding the ring on all of that competency work and making sure that industry is improving the competence of everyone involved in design and construction."

### Performance and standards

The BSR will also be responsible for the performance and standards of building control bodies, a "regulator of regulators", as Baker puts it. The BSR itself will be the building control body for HRRBs. He explains: "We will be establishing the minimum standard of professionalism, competence and performance of all building control bodies whether they are local authorities or approved inspectors. The aim of that is to have a confidence in the building control community, whoever you use."

Oversight is another part of its role, responsibility passing from the MHCLG to the BSR for maintaining the Approved Documents,



### Peter Baker CV

- Feb 2021-present: Chief inspector of buildings
- May 2020-Jan 2021: Director, building safety and construction, HSE
- Oct 2018-May 2020: Director, building safety programme response, HSE
- April 2015-Sept 2018: Chief inspector of construction, HSE
- Education: BSc Chemistry, University of Sheffield; Post-graduate diploma, occupational safety and health, Aston University

identifying technical standards, working with industry and research. "We will have a role in keeping an eye on the whole system. Where it is not working, we will make recommendations to the secretary of state to improve the system," Baker says.

### Regulations first

Baker expects two significant changes to the design and construction process for HRRBs.

First, there will be more engagement with the BSR at the early stages about how the project will comply with Building Regulations. Contractors and developers will have to demonstrate how they will manage the construction so that the building still complies at the end of the build process. If the BSR isn't convinced, the building won't be allowed to move into the construction phase.

Second, fire and rescue services will become part of a multidisciplinary team and their views will be taken into account when decisions are made as to whether a building can proceed or not.

During the design and construction phase, the BSR will have enforcement tools similar to those that building control bodies possess, including enforcement notices to have work corrected. Projects will not move through the gateways if dutyholders can't demonstrate competence.

Similarly, owners and landlords of occupied buildings will have to register the building as well as applying for a safety certificate and producing a safety case before buildings can be occupied.

As the Building Safety Bill progresses through parliament,

### The building safety gateway regime

- **Gateway 1:** Part of the existing planning application stage for all higher-risk buildings (as of 1 August 2021). Applicants need to submit a fire statement, demonstrating they have considered fire safety issues. The HSE will be a statutory consultee.
- **Gateway 2:** Prior to construction work beginning on higher-risk buildings and replaces the current 'deposit of full plans' stage in the Building Regulations. Clients will apply to the regulator via a building control application containing their full design intention. Provides a 'hard stop', where construction cannot begin without regulator approval.
- **Construction stage** (between Gateways 2 and 3): During construction of higher-risk buildings, dutyholders must comply with any inspections deemed necessary by the regulator. 'Major changes' to designs will need to be approved before they can be implemented. 'Notifiable changes' that may impact fire and structural safety must not be implemented until after a prescribed period, to allow the regulator time to take action if required.
- **Gateway 3:** Takes place at completion/final certificate stage, when building work is completed but prior to occupation of the building. The client, supported by dutyholders, must submit to the regulator information on the final as-built building. Once satisfied, the regulator will issue a completion certificate for all or part of the building.

the BSR is planning to step up engagement with the industry. "We want to get the industry talking about what needs to change and what it is going to do, rather than just what the regulator and the government are going to do," Baker says. "The future will be here before you know it." ●



## What will levelling up do for the housing market?

Demand for housing looks likely to diffuse throughout the UK in the wake of the Covid-19 pandemic, writes **Kris Hudson**



The rebranded Department for Levelling Up, Housing and Communities (DLUHC) is a signal of how integral the government sees housing provision to economic opportunity and growth. Yet the housebuilding sector still faces a longstanding challenge to meet targets. 2020 is the first time the UK has delivered homes at a similar rate to the late 2000s. However, projections by developer StripeHomes indicate the government will not start hitting its 300,000 per annum goal until 2028.

At the same time, demand for different types of new homes is starting to change as lifestyles adapt post-pandemic. The number of registrations for new apartments – typically mid or higher-rise and with limited outdoor space – dropped by 20.4% between Q4 2019 and Q2 2021. By comparison, registrations of more traditional family housing types all increased, with detached homes especially in demand with a jump of 41.7% in the same period. While nascent as a trend, the long-term implications are for homes built at a lower density and with a growing premium for those with more space.

We are also seeing early signs of change in where those homes are. Long viewed as a major powerhouse for homebuilding, London saw 3,017 fewer registrations in the 12 months to Q3 2021 compared to the annual average

before the pandemic. By contrast, every other region saw an increase on pre-Covid-19 levels, with the East of England topping the chart with 4,915 more registrations. Michael Gove, the new secretary of state for DLUHC, also seems to recognise the new trend and there is an expectation that proposed English planning reforms could be re-gearred to shift the emphasis for housebuilding towards the North.

But as the dynamic of UK housebuilding changes, so too could its affordability. Currently London is the most expensive location in the UK for first time buyers – with housing 9.4 times higher than earnings when based on Nationwide data as of Q3 2021. This compares to just 3.5 times earnings in Scotland, 3.6 in the North and 4.1 in Yorkshire and Humber.

Could shifting working patterns post-pandemic change that dynamic and make UK regions less affordable? Savills' forecasts imply so, suggesting that prices could increase the most in Yorkshire and Humber (28% within five years), the North West (28%) and Wales (26.8%) as commuter belts expand.

Inflation will be a critical factor in how these trends play out, with the prospect of a rise in the Bank of England base rate further impacting affordability. For housebuilders looking to mitigate material cost escalation, increased productivity through digital design and modular manufacture could help ease the pressures of an inflationary market.

Annual increase in materials costs for the year between August 2020 – August 2021  
(Source: BEIS)

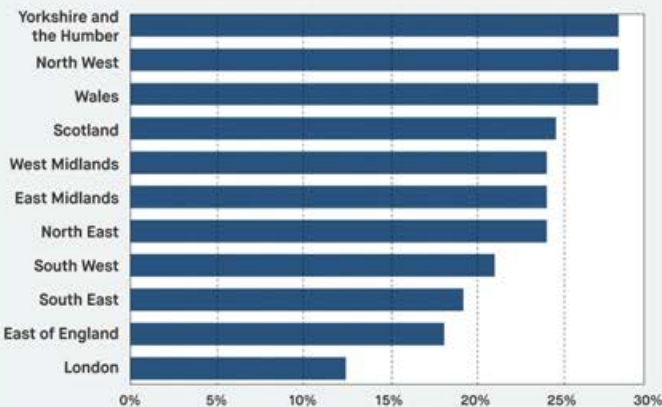
# 23.3%

Number of new homes completed and forecasted completions



SOURCE: ANALYSIS BY STRIPEHOMES BASED ON GOV.UK, GOV.WALES AND FINANCE.NI.GOV.UK

Regional house price inflation forecasts: five years to 2025



SOURCE: SAVILLS

## News in numbers

# 10,000

Like Homes' target for producing factory-built homes over the next five years, announced following a £60m fundraising round.

# 250%

Rise in wholesale gas prices between January and October 2021, supported by a rebound in manufacturing consumption post-pandemic.

# 9GWh

Energy capacity for Sunderland's new Gigafactory. A joint venture with Nissan and Envision AESC, the plant received planning consent in October.

# 1.5%

The proportion by which official figures put construction output below pre-pandemic level (February 2020) in August 2021. Supply chain issues and price rises were blamed.



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## Opinion



Professor Fred Sherratt  
Anglia Ruskin University

# Welfare isn't wellbeing

Site workers are missing out on the mental health revolution, and it's really not OK, says **Fred Sherratt**

The UK construction industry was rocked back in 2017 by statistics revealing that there were more suicides in construction than any other industry.

A quick response rightly put workforce mental health at the top of the agenda: resources were mobilised, mental health first aiders appeared and a plethora of initiatives, ranging from digital support apps to yoga classes to counselling services, were implemented to try to mitigate the problem.

Wellbeing suddenly found itself right alongside health and safety – creating a new HSW acronym (for those of us old enough to remember when 'W' was for 'welfare'). Things seemed to be changing for the better.

But recent research by Glasgow Caledonian University, commissioned by the

Lighthouse Club, has found that things are only getting better for some of our workforce.

While there has been positive change for non-manual occupations such as managers and other professionals, for manual workers – particularly unskilled labourers – problems and suicide rates are actually increasing.

Unfortunately, this isn't a surprise. It's never difficult to point out myriad people-related problems with how we 'do construction' on sites. Long supply chains full of insecure, temporary and zero-hours contracts, lowest-price tendering, transient work and long working hours, coupled with high production pressures and dangerous work creates a bespoke and highly toxic mental health cocktail just for our workforce – and it's no wonder folks turn to drink,

**"All the yoga classes in all the world can't fix an inherently unwell and unhealthy workplace. The industry needs to fundamentally rethink how it is structured and organised to support wellbeing for everyone"**

drugs or gambling to get by. There is research from across the world to back this up, some of which is now depressingly old.

And this is not something a combination of wellbeing initiatives can resolve. Flexible or remote working doesn't fit with manual work. Projects move about the country; head offices don't. We're still doing what we've always done on site, and that's the problem. And why, when we talk about sites, does the 'W' still stand for 'welfare'? Because the systemic change needed to bring 'wellbeing' meaningfully into that space seems to be too much of a challenge – as recent evidence sadly shows.

Yes, the industry tries initiatives that focus on changing worker behaviours, such as smoking cessation, but these give no acknowledgement that something about their work (rather than the worker) may be the reason they smoke in the first place. Mental health first aiders are a great step forward but they're not a preventative measure: they're a sticking plaster at best. And all the yoga classes in all the world can't fix an inherently unwell and unhealthy workplace.

The industry needs to fundamentally rethink how it is structured and organised to support wellbeing for everyone. We need to take as much notice of this latest research as we did when those shocking suicide statistics first hit the headlines and confront, challenge and, if necessary, shame the industry into change: our site workers deserve it. ●

**Professor Fred Sherratt MCIOB is reader in construction management at Anglia Ruskin University and a member of the CIOB's Health, Safety and Wellbeing Special Interest Group.**





**Caroline Gumble**  
CIOB

## Celebrating the people who make construction special

Finally being able to hold the CMYAs and CIOB Awards in person was a reminder that construction has much to celebrate, says **Caroline Gumble**



True professional: Marc Burton receives his award

**"It was wonderful to bring people together for a celebration of an industry which has barely stopped since the pandemic began, despite facing some of the most challenging circumstances"**

As I write, I'm still enjoying the celebratory glow from the Construction Manager of the Year Awards, just a couple of weeks ago. It was wonderful to bring people together for a much-needed celebration of an industry which has barely stopped since the pandemic began, despite facing some of the most challenging circumstances. It was an honour to recognise and celebrate the accomplishments of some of the most talented people in construction.

Our Construction Manager of the Year competition and the new CIOB Awards are very much about highlighting the best of leadership and talent in our sector; acknowledging those who set the standard and lead the way.

Every year I'm impressed by all those who make it to the finals, but I was delighted that

a long-standing member of the institute and long-time champion of the industry was recognised for his achievements as this year's winner. Marc Burton FCIOB is an example of a true professional, offering leadership and an awareness of the impact our work can have, in the community and the wider industry.

Although there were many other medal winners on the night and a lot of people who deserve a shout-out, I do want to take a minute to reflect on the success of the women who gained recognition as part of CMYA this year. Almost two years ago, I wrote that we can do better in using this platform to shine a spotlight on the diversity of the talent in this industry. So I'm delighted to give a special shout-out to two of the women who made their presence felt as part of the competition this year.

Congratulations to Emily Hoggins MCIOB of BAM Construction, gold medal winner in the office category, who oversaw the construction of a three-storey office block in the heart of King's Cross in London, with "inspiring leadership", delivering on programme and in budget in her first project management role.

Congratulations also to Megan Forster MCIOB, of Coniston, for her win in the refurbishment and restoration (under £10m) category. It was a prestigious project on a Grade II-listed mansion, which needed a deep appreciation of heritage and conservation. She was praised for her "measured and meticulous" approach and "the high standard of quality she instilled".

I'm delighted that the CIOB Awards could be held in person this year to celebrate the extraordinary talent we have in this industry. ●  
**Caroline Gumble is CEO of the CIOB.**

## Feedback

A selection of readers' comments about news and issues in the industry from [www.constructionmanagermagazine.com](http://www.constructionmanagermagazine.com)

### CM October 2021 CMYA Awards

George Dunlop  
(former chair CIOB Scotland)  
As a retired FCIOB now nearly 80 years of age, I value greatly my copy of *Construction Manager* and in general I find the articles entertaining, although I tend to think too few articles are focused upon the actual construction process and too many on new technology which in my opinion has not really greatly improved quality nor speed of construction.

However, the October 2021 edition devoted 15 pages to actual construction successes which cheered an old man and brought back happy memories. During the 1990s and through till 2011 I had the good fortune to serve on CIOB senior boards and be heavily involved with the Direct Membership Examinations (DMX), where I met two very influential FCIOBs, Sir Ian Dixon and Sir Michael Latham. Both of these gentlemen would be delighted by the content of the 15 pages on the CMYA Awards.

Sir Ian was a staunch supporter of professional standards and the value of MCIOB, both to the individual and the company. His beliefs are as strong now, within Willmott Dixon, as they were back in the 1990s when I was fortunate enough to discuss such issues with him personally. In a year when normal working was greatly disturbed by Covid, Willmott Dixon had 20 nominations shortlisted and achieved four main awards in each of Gold and Silver.

Sir Michael was also a supporter of professionalism in our industry but even more enthusiastic about "Constructing the Team" in construction projects.

If he was able to read the 20 brief accounts of the Gold and Silver awards he would be delighted, as I was, to see the very strong involvement of clients and the rest of the construction team in the majority of these projects. Plus, both he and Sir Ian would be very pleased to note the high proportion of MCIOBs participating in these awards.

Provide your own feedback on latest industry issues by posting comments online at [www.constructionmanagermagazine.com](http://www.constructionmanagermagazine.com) or by emailing the editor at [construction-manager@atompublishing.co.uk](mailto:construction-manager@atompublishing.co.uk)



## NET ZERO HEROES

CAMPING OUT IN CENTRAL LONDON OR GLUING YOURSELF TO THE M25 IS NOT THE ONLY WAY TO SAVE THE PLANET. AHEAD OF COP26, **KRISTINA SMITH** MEETS CONSTRUCTION'S OWN CLIMATE CHANGE WARRIORS TO FIND OUT ABOUT THEIR ROLES IN REDUCING CARBON EMISSIONS



### Creating confidence in domestic retrofit

**Keith Richardson MCIQB**

Retrofit coordinator,  
All About Energy

- Trained to be a retrofit coordinator in 2020, offering the service through All About Energy, a company he founded in 2018 to deliver commercial and domestic energy assessments
- Set up Space Design & Construction in 2002 to advise catering, hospitality, retail and education clients
- Worked in the private sector for consultants and contractors for 10 years
- Started as a trainee building surveyor, working for local authorities for 14 years and gaining a TEC and Higher TEC in Building Studies, as well as becoming an MCIQB

If it hadn't been for Covid-19, Keith Richardson might not be a retrofit coordinator today. A visit to a trade show alerted him to the opportunities around energy efficiency retrofit, and when the first lockdown struck, he enrolled with the Retrofit Academy – currently the only provider of an

accredited qualification. By July 2020, he had achieved a Level 5 Diploma in Retrofit Coordination and Risk Management.

The role of retrofit coordinator is set out in PAS 2035:2019 *Retrofitting Dwellings for Improved Energy Efficiency*. From July 2021 PAS 2035 has been mandated for all projects funded under the Energy Company Obligations (ECOs) programme where energy companies must fund energy efficiency upgrade works.

In a process set out in PAS 2035, a retrofit assessor surveys the property and prescribes the measures needed, an installer proposes a design for how the works will be delivered and a retrofit coordinator then checks the designs and, most importantly, reviews the installation to make sure it's up to scratch.

"The retrofit coordinator is the linchpin between the customer, the assessor and the installer, and vital to getting it right," says Richardson. The retrofit coordinator is also responsible for submitting documents and evidence, such as photos, into a database which is held by TrustMark.

One thing that initially surprised Richardson about his new role is that it is deskbound. Rather than visiting projects on site, he relies on photographic and other evidence to make his assessments.

A challenge for Richardson and his fellow retrofit coordinators is that this is a new process. "There will be a lack of knowledge among some installers. Up until July this year, they may have been doing things in a certain way and then, from July onwards they are being told to do it very differently, which may be difficult for some people.

"But this is very much a young industry and I think it's got a lot of legs."

**"By 2025, when the Future Homes Standard is released, we will start to see the emergence of the first trained apprentices"**

Paul Leedham,  
Matrix Energy  
Systems

## Tackling the urgent need to upskill

**Paul Leedham**

Heat pump engineer and managing director, Matrix Energy Systems

- Set up Matrix Energy Systems in 2009 to design, install and maintain renewable energies; today the company employs nine people
- Undergraduate and postgraduate lecturer on renewable technologies at Sheffield Hallam University since 2012
- Worked as an engineer and project manager at Marconi Telecommunications, Complete Optical and Electronics and Vaillant Group
- MSc in Engineering and Information Technology and BEng in Electronic Systems and Information Engineering from Sheffield Hallam University

Paul Leedham knows a lot about heat pumps: how to design them, how to install them and how to sort them out when other people have messed them up – as several of the glowing reviews for his company Matrix Energy Systems, on the Which? Trusted Trader site attest.



When Leedham set up Matrix Energy Systems in 2009, he quickly discovered that there was a lack of competence in designing heat pump systems. Installers were using a 'rule of thumb' approach based on the size of the house, without calculating heat loss at all, which was resulting in the wrong size of pump being installed.

"No one was doing heat loss calculations. I started doing that for other companies and very quickly found a niche," he says. He went on to recruit and train two more energy engineers from Sheffield Hallam University, where he is a visiting lecturer.

Now the Matrix business model is more focused on installation and maintenance. Since 2013, it has been maintaining, and in some cases upgrading, 600 heat pumps, both air and ground source, for a local authority.

Training will soon be part of the mix too; the biggest challenge the industry faces is a lack of competent installers, says Leedham. "At the moment there are lots of different skills levels among those who are installing heat pumps," he says. "Some people have never been trained. They are not qualified – they are not even plumbers."

Having authored the industry's first heat pump training course for BPEC in 2012, he is working on a competent person's scheme with the Microgeneration Certification Scheme (MCS) and on a new apprenticeship with the MCS and the Ground Source Heat Pump Association. "By 2025, when the Future Homes Standard is released, we will start to see the emergence of the first trained apprentices," he says.

Leedham is motivated by the urgency of climate change: "This planet is not ours; I have to hand it over to my kids and they will have to hand it over to theirs," he says. "We need a step change in training in the UK and I want to influence the delivering of training." ▶



## Practicality not preaching helps meet ambitious goals

**Conor McCone**  
Carbon Manager, Skanska UK



- UK carbon manager for Skanska UK since 2018; currently studying for an MBA at Imperial College
- Joined Skanska in 2015 as environmental manager; selected as arising star to work in Sweden for six months as group sustainability analyst
- Worked for mining company DTMT in Australia as environmental advisor
- Worked for family business, F McCone & Sons, as environmental and compliance manager
- BSc in Ecological Science and MSc in Carbon Management from the University of Edinburgh

Conor McCone grew up on construction sites, working for his family's contracting business as a teenager. Perhaps it is those roots which allow him to talk pragmatically to people in all parts of the Skanska UK business and its suppliers.

"Sometimes carbon management can be overcomplicated; there's too much terminology and jargon," says McCone. "It's just about knowing how to apply a few simple rules to your day job or your company and making sure you set out a strategy."

**"We created a dashboard that can show every project we have done in the last 10 years, estimate the carbon and the cost and link the two things"**

**Conor McCone,**  
Skanska

You will rarely catch McCone preaching, but he is quietly passionate about what he does. Earning big money in one of his early roles as environmental manager with an Australian mining company, he was frustrated that there was no appetite for doing things better. So, he quit to do an MSc in carbon management.

After a stint at Skanska HQ in Sweden, working on group carbon policies, McCone was instrumental in creating Skanska UK's ambitious carbon targets back in 2019. Unlike any competitor at the time, Skanska set its goals based on carbon emissions from its whole supply chain, rather than just its own operations - which increased emissions a whacking tenfold. Now, others are following that lead.

"I am proud of the fact that our strategy has now shifted to other contractors in the industry," says McCone. "It's amazing that it came from a few people, five to 10 of us, who worked on it in the very early days."

Join the CIOB's Net Zero evening with housing minister Eddie Hughes later this month. More details, p50



McCone had been developing the strategy for 18 months, alongside environmental technical manager David Mason and environment director Adam Crossley. At the time, they wondered whether their proposed strategy would be too ambitious for the business to support.

One of the crucial elements to gaining buy-in was linking carbon and cost, says McCone.

"We created a dashboard that can show every project we have done in the last 10 years, estimate the carbon and the cost and link the two things. So, we could talk to sustainability people and to commercial people," he explains.

Lower carbon measures don't always mean lower cost, says McCone, but sometimes it makes sense to start conversations by talking about those that do. "If you go in all guns blazing, telling people that the planet is doomed and they have to do everything right now, you lose people immediately," he says.

**"As an owner, it's always difficult to be sure what you are consuming and whether you are using things in the best way"**

**Julien Caudron, Sero Energy Systems**



## Seeking data patterns that change lives

**Julien Caudron**  
Data scientist, Sero Energy Systems

- Joined Sero as data scientist in August 2021
- Worked as a data scientist for Energy Systems Catapult in Birmingham for three years
- Worked as a researcher at three different European universities, over six years, looking at data from the Large Hadron Collider at CERN
- PhD in Elementary Particle Physics, from the University of Louvain, Belgium

It seems like quite a leap from particle physics to domestic energy systems, but it's one that Julien Caudron was happy to make.

"I wanted to move away from the academic side and do something more directly impactful for society," he says. So, he is using skills honed on data from experiments at the Large Hadron Collider at CERN in Geneva – where scientists smash up tiny particles in a bid to better understand

the universe – to work out how to best combine and optimise multiple domestic low carbon technologies.

"The role of a data scientist is to look at large data sets and try to understand them, to gain insight and possibly model things so we can repeat them or make predictions," explains Caudron. "The next step can be to build a decision-making algorithm based on that."

Caudron was recruited by Sero Energy Systems in August this year. His task is to work with data from domestic properties where Sero is responsible for controlling and running a cocktail of equipment and systems including solar power, heat pumps, batteries and electric vehicle charging points.

Right now, Caudron is looking for insight and patterns from data which is coming out of Sero's first project in Parc Eirin in Tonyrefail, where some homes have been occupied for a year. As well as looking for ways to optimise the interaction between the different elements – such as when to store generated energy and when to return it to the grid – Sero will advise residents on how to save more money.

"As an owner, it's always difficult to be sure what you are consuming and whether you are using things in the best way," says Caudron. "We will use data from other houses to make recommendations through the app." The app, developed by Sero, is the interface between the householder and the various systems.

Caudron's long-term goal is to contribute to wider understanding of retrofit and energy efficiency issues, such as the reasons for performance gaps between designed and installed systems.

"There are a lot of open questions around how to make all the different smart equipment interact optimally together," he says. ●



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## WHY HABITAT MATTERS IN CONSTRUCTION

THE CONSTRUCTION INDUSTRY HAS A RESPONSIBILITY TO PLAY ITS PART IN MITIGATING HABITAT DESTRUCTION, SAYS **ADAM CANE**

### Biodiversity is under threat in the UK.

The UK has lost more natural wildlife and wild spaces due to human activity than any other G7 country, according to a recent Royal Society for the Protection of Birds (RSPB) report. Owing to its unique position at the forefront of this issue, the construction industry has a responsibility to play its part in mitigating habitat destruction.

The Intergovernmental Panel on Climate Change's (IPCC) recent landmark report has highlighted critical levels of concern over the loss of natural habitats, where rising temperatures are set to have alarming and irreversible consequences. Worryingly, the UK has the 12th worst record, globally, when it comes to wildlife and wild space destruction.

Planting trees and creating gardens can play a crucial role in increasing biodiversity

**“By incorporating green roofs, living green walls and water-sensitive urban design principles, SuDS can play an integral role in creating sustainable and climate-resilient buildings”**

It serves as a stark reminder that action is needed across the world, including here in Britain, to combat the damaging impact of climate change.

The built environment has had a significant impact on biodiversity loss. Land use and construction practices contribute to the removal of natural habitats, causing fragmentation. This affects the diversity of individual species, genetic diversity and prevents migration and the occupation of a wider range of habitats. The construction industry needs to reflect on how it can help mitigate climate change and protect biodiversity in the built environment.

### The scale of habitat destruction

It is worth highlighting how urgently this issue needs to be addressed. Statistics from the National Biodiversity Network (NBN) State of Nature report in 2019 found that more species are decreasing (41%) than increasing (26%) over the last 50 years. The fate of hedgehogs is a visceral example of this. Since 2000, their numbers have halved, according to a report in 2019, with rough estimates suggesting the population has dropped from 30 million to one million since the 1950s.

Tree coverage is also declining. According to a 2017 report, only 13% of the UK's total land area is covered in trees. In comparison, the EU's coverage is 35%, indicating the issues facing the UK and the impact the built environment has on



In association with

wildlife. The UK has also seen a 90% drop in lowland ponds on farmland since the 20th century.

### Construction can make a difference

In spite of the challenges, the construction industry is in a unique position to make a difference.

On a macro-level, blue and green infrastructure can help to create resilient systems for biodiversity that mitigate the impact of rising temperatures, by creating a cooling effect through shading and evaporation. Street trees, pocket parks, public and private gardens, and urban greening can all play a crucial role in creating recovery networks across urban areas.

Even on an individual project-by-project basis, there are measures that can be taken to significantly boost environmental credentials. From a water management perspective, SuDS (sustainable drainage systems) are designed to mimic natural drainage processes.

By incorporating green roofs, living green walls and water-sensitive urban design principles, SuDS can play an integral role in creating sustainable and climate-resilient buildings. Designed in the right way, a variety of vegetated species and habitat types can interconnect to support an abundance of biodiversity.

This extends to road infrastructure too, which has contributed to the

decline of hedgehogs, as well as a number of other smaller mammals and amphibians. The highways industry needs to ensure safe passage for animals across the UK road network, with systems such as ACO's wildlife tunnels designed to do just that, without impacting on the primary function of highways.

### Legislative considerations

The UK's long-awaited Environment Bill, which is due to come into force in the coming months, will put environmental principles into law. The bill will set a legally binding target on species abundance to boost biodiversity, protect peatlands and create new woodlands. As part of the proposed bill, biodiversity net gain (BNG) must be measured using a recognised biodiversity metric.

Implementing BNGs will help to deliver measurable improvements in projects, by creating or enhancing habitats in association with built environment assets. To support planners in understanding potential BNGs, Natural England launched its Biodiversity Metric 3.0 in July. The toolkit can be used by any development project, consenting body or landowner that needs to calculate biodiversity net gain in England.

However, sufficient accountability measures are needed to ensure long-term planning is in place. 'Built habitat' mapping should be recorded

### Taking action

With the changes expected to take centre stage over the coming months, it's important for the sector to take steps into an environmentally sustainable future.

To support the construction industry, ACO collaborated with 60 partners and supporters to launch a new campaign which aims to explore the challenges we face in safeguarding habitats.

Habitat Matters is a series of on-demand webinars and podcasts that look at how we can create, maintain and improve natural habitat in the built environment.

The series discusses the way in which the construction industry can better protect biodiversity and habitats in the UK, highlighting how we can integrate natural and manmade habitats into projects.



The series of webinars features a number of industry leaders, government representatives and partner organisations, discussing a variety of projects, including environmental policies and guidance, natural solutions and how the public can engage in biodiversity conversation.

To look at the back catalogue of Habitat Matters webinars free on demand, please visit: [www.habitat-matters.com](http://www.habitat-matters.com).

Wildlife tunnels help ensure safe passage for animals across the UK road network



in the same way that species are. This information – overlaid with observation of biodiversity data – will help to outline the effectiveness of the built habitat over time, ultimately providing greater transparency over how effectively a project is addressing habitat issues.

COP26, the UN's climate change conference held in Glasgow this year (31 October to 12 November), is another significant event that will hopefully result in further biodiversity legislation. As such, we can expect added pressure on the construction industry to ensure biodiversity protection is implemented in future projects. ● Adam Cane is sustainability lead at ACO Water Management.

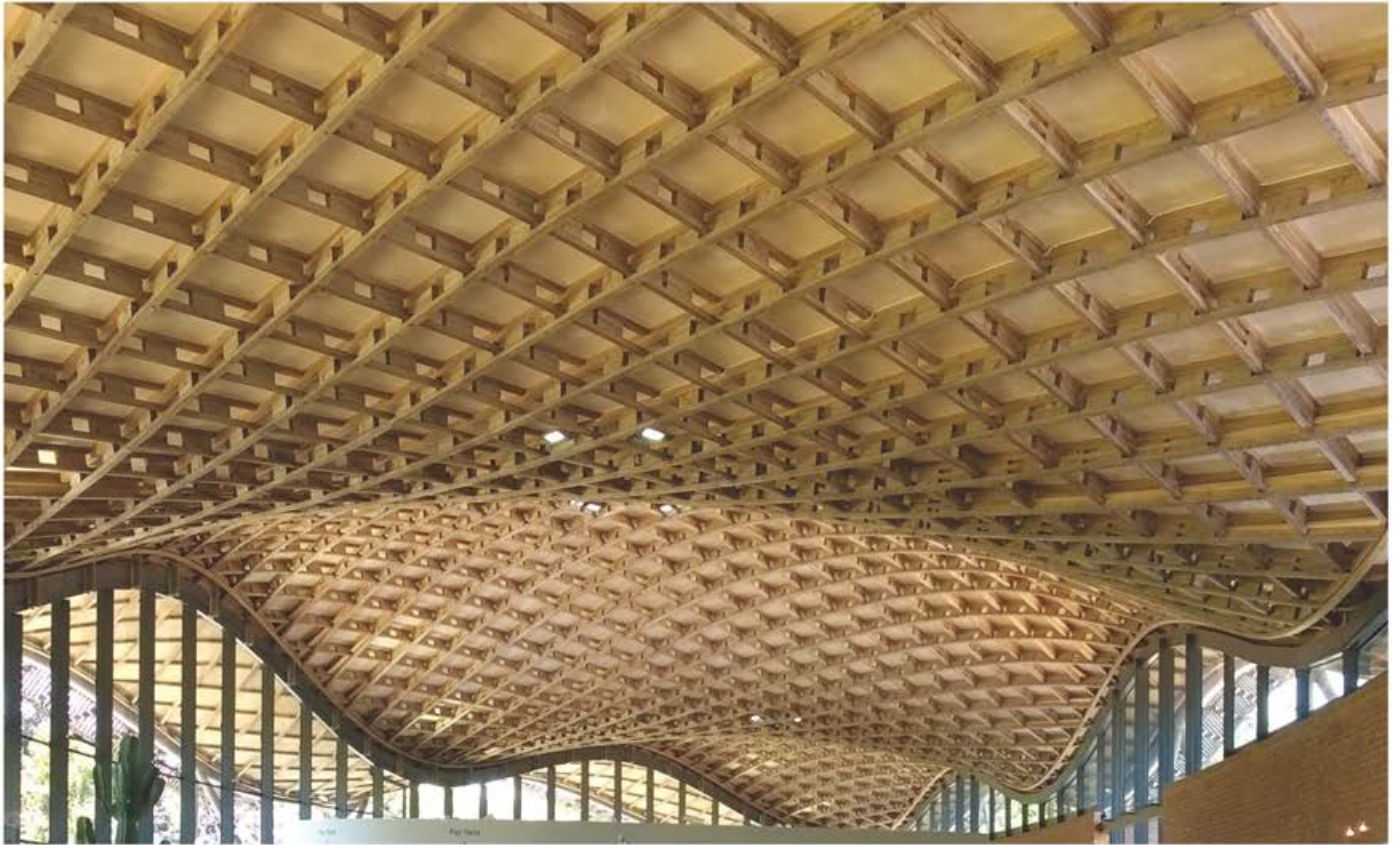


PHOTO: SUSCONSOL

## CPD: TIMBER AND THE CIRCULAR ECONOMY

TIMBER IS THE ULTIMATE RENEWABLE RESOURCE AND HAS BEEN USED IN CONSTRUCTION FOR CENTURIES, BUT WHERE DOES IT FIT INSIDE THE CIRCULAR ECONOMY? THIS CPD, IN PARTNERSHIP WITH PEFC UK AND SUSTAINABLE CONSTRUCTION SOLUTIONS, EXPLAINS

Traditionally, industry has followed the linear 'take, make, dispose' consumption model, where resources are taken from the earth to make whatever is needed with the products eventually disposed of at the end of their life. This model is not sustainable, so how do we meet the construction needs of the future and protect natural resources?

The circular economy is based on the principles of:

- designing out waste;
- keeping products and materials in use; and
- regenerating natural systems.

Over time, society has focused on efficiency and these core principles have been lost. However, in the latter

part of the 20th century, society began to recognise the need to conserve natural resources. In 1981 Professor Walter Stahel's *Product-Life Factor* was the first publication defining a 'closed loop economy' – now commonly referred to as the circular economy.

In the 1990s the establishment of the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) forest certification and chain of custody schemes helped to ensure a sustainable supply of responsibly sourced wood-based material.

Professor Stahel's work was expanded in 2002 by William McDonough and Michael Braungart, who developed the concept of

**Above:** Oak and larch from trees on the Crown Estate were used for the roof of the Savill Building in Windsor Great Park

To see past CPD articles visit  
[www.constructionmanagermagazine.com/cpd-articles](http://www.constructionmanagermagazine.com/cpd-articles)

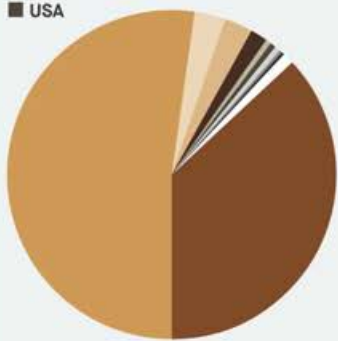
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## UK timber sources



SOURCE: SUSCONSOL

cradle-to-cradle design in their book *Cradle to Cradle: Rethinking the way we make things*. This introduced the concept of biological and technical nutrient cycles.

Technical nutrients are generally sourced from finite resources extracted from the earth, such as metal ores or oil. To reduce the impact on these, the materials must be kept in circulation by ensuring they are maintained, reused, refurbished, remanufactured or, as a last resort, recycled.

Biological nutrients are generally sourced from renewable resources such as plants or algae and, prior to returning these resources to the biosphere, as much should be extracted from them as possible, with resources maintained through replanting.

### Where does timber fit into this?

Timber is a biological nutrient and it would be assumed that it would follow the biological cycle. However, should timber components first follow the technical cycle?

The timber industry has been promoting what could be termed a semi-circular business model for

years: timber and by-products from the processing industry are recycled into panel boards, or used as animal bedding and energy recovery. However, more could be done to reduce waste.

The TRADA Wood Information Sheet *Recovering and Minimising Waste Wood* (based on data from the Environment Agency and the Wood Recycling Association) found that, although less than 1% of 'waste' timber ends up in landfill, it is estimated that only 19% was recycled into other products, such as insulation or panel boards, with a further 11% used for animal bedding and surfaces. This leaves 69% that is directly or indirectly used as a biofuel for energy production.

With ever-increasing energy and resources going into timber production, in particular engineered timber products, designers should look at how these could be developed to follow the technical cycle initially and aim to:

- maintain timber products in place for longer, and refurbish and reuse shorter service-life timber components;

**"Although less than 1% of 'waste' timber ends up in landfill, it is estimated that only 19% was recycled into other products, such as insulation or panel boards"**

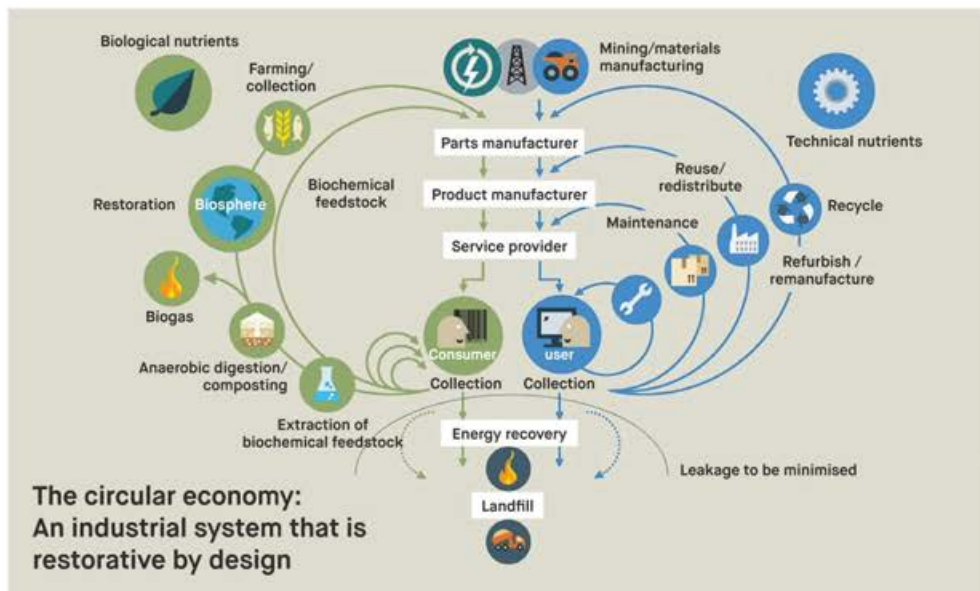
- look at how certain components could be remanufactured; and
- only allow timber products to enter the biological cycle with 'cascading' recycling once the above routes have been exhausted.

### Timber and carbon dioxide

Trees remove CO<sub>2</sub> from the atmosphere during their growing cycle and store this as biogenic carbon in the timber. For most timber, half the dry mass of the timber is biogenic carbon.

By planting trees and using the timber in construction, we are creating a long-term carbon capture and storage (CCS) solution. When the tree is felled and processed into timber products, the biogenic carbon – and therefore the sequestered CO<sub>2</sub> – remains locked away in that timber (approximately 715kg CO<sub>2</sub> per cu m of Swedish spruce).

When timber is reused or recycled into another timber product such as chipboard, the CO<sub>2</sub> remains locked away, and will stay locked away until it is released through combustion or decomposition. We must therefore ►



SOURCE: ELLEN MACARTHUR FOUNDATION



PHOTO: VASTERN TIMBER

ensure we keep timber products in use for as long as possible, by adopting circular economy principles.

### Source security

To ensure we continue to have sufficient timber to meet our long-term low-carbon construction needs, the UK must address the long-term security of its vital timber supplies.

The UK is second only to China as the largest net importer of timber and timber products, with more than 60% of the UK's construction timber supply coming from overseas. Although we generally have stable supply chains from many countries around the world, recent pressures on supply show this may not be the case in the long term.

Every country is having to look at constructing lower embodied carbon buildings and, as timber is a key material in helping to achieve this, this could mean continuing restricted supplies into the future. There must be a sustainable homegrown timber supply for the future. As well as ensuring we plant more productive woodland, we must also ensure more is done with the existing resources.

For example, only 10% of the hardwood felled in the UK today is used for timber production, with much of the remaining 90% used for biomass without any previous use. And although the utilisation rates for softwood are significantly higher, over 500,000 cu m is used for single-use pallets to transport construction materials, demonstrating that this valuable resource is not being used as efficiently as it should be.

You must also ensure your timber is from a legal and sustainable source. Purchases should be in accordance with the guidance on the UK government's Central Point of Expertise on Timber (CPET). The easiest way to do this is to ensure timber is delivered to site with full chain of custody certification from one of the three main certification schemes:

- Programme for the Endorsement of Forest Certification (PEFC)
- Forest Stewardship Council (FSC)
- Grown in Britain (GiB).

For more information on responsible sourcing see our Sourcing Timber Responsibly CPD (<https://tinyurl.com/4cspumv4>).

Grown in Britain certified Brimstone thermally modified poplar cladding on the Wood Centre For Information building in Oxford

**"Timber components that can be reused should be identified in the pre-redevelopment audit of any existing structure"**

### Designing for resource efficiency

Utilising the existing structure and finishes, through refurbishment or adaptation, is the best way to ensure material efficiency. Timber components that can be reused should be identified in the pre-redevelopment audit of any existing structure. However where new materials are brought to site, they should be used in the most efficient way.

Doing 'more with less' means finding new engineering solutions. Examples include the Edinburgh Napier University research project which assessed how cross-laminated timber (CLT) panels could be produced from lower strength grade C16 British timber.

Another example is the use of small section oak and larch to form the gridshell roof structure of the Savill Building in Windsor Great Park, all of which was harvested from trees within the grounds of the Crown Estate.

Future innovations are likely to include the use of 3D-printed components manufactured from wood-fibre bio-composites, particularly for spare parts.

### Designing for optimal service life

Designing for optimal service life means ensuring products last for the desired service life of the element. This may mean designing the product to be maintained in place for longer (eg external cladding) or ensuring it can have multiple reuses, possibly following refurbishment or remanufacture (eg flooring). The diagram on page 26 shows what we believe we should be aiming for on the service life of typical building components.

Traditionally, to make timber last longer, durable species have been sourced from the UK and overseas, or non-durable softwood species ►

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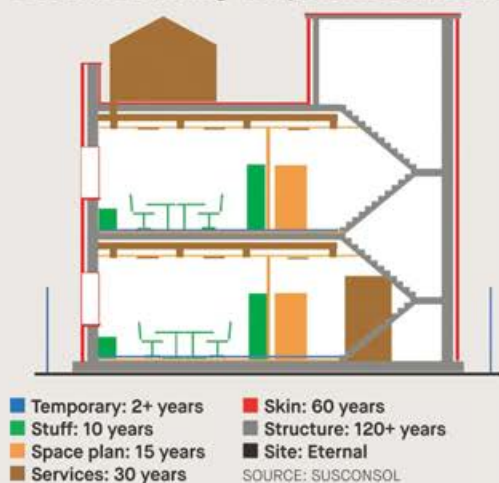
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### Desirable building component service life



have been chemically treated with hazardous heavy metals, limiting their reuse. However, alternative 'modification' techniques including thermal modification (eg Brimstone or Thermowood) and chemical modification, such as furfurylation (eg Kebony) or acetylation (eg Accoya), provide a non-hazardous alternative. These processes change the physical structure of the wood meaning fungi and bacteria do not feed on them.

Non-durable hardwood and softwood species can be converted into class 1 or 2 durability products, with some warranted to last at least 50 years in external above-ground applications, so with good detailing our 60-year requirement for cladding is possible.

For structural building elements, other alternatives to treatment may need to be used. Good detailing and construction methods during the build are essential in ensuring timber does not absorb too much moisture before the structure is watertight, and also to allow the escape of any moisture that is taken on.

**"Non-durable hardwood or softwood species can be converted into class 1 or 2 durability products, with some warranted to last at least 50 years"**

### Designing for flexibility, deconstruction and disassembly

For structures to remain relevant, they must be flexible enough to be reconfigured to suit the current user's needs. This could include the incorporation of float-out wall panels that can open up or close down spaces within a building. It could also mean the incorporation of access panels to provide access for maintenance.

At end of life, all components of the building need to allow for deconstruction and disassembly to enable refurbishment and reuse. This could include quick release connections, such as Sherpa connections for structural timbers, which can be lifted off, or the use of innovative joints, such as the Kährs Woodloc 5S system, which allows the flooring to be dismantled.

### Business models

To facilitate the take-up of these options, changes in business models will be required. Where components are to be recovered for reuse, refurbishment or remanufacture, it would be beneficial if the ownership remained with the component supplier. This allows them to control any required maintenance to ensure it remains in use for the required service life, and also the recovery of the component at the end of life.

There are various business models that could be used for timber products, and the one used would depend on the intended service life and the level of maintenance required. Possible business models could include short-term hire, longer-term leasing, service contracts or incentivised return.

For example, a removable wood flooring system could be provided on a service contract over a defined period, with the manufacturer also

providing a cleaning and maintenance service throughout this period. When the service contract is completed, the flooring could be removed, refurbished as required, and leased out on a service contract to another client.

Another example could be the long-term lease of a component that needs little or no servicing, such as a partition wall system. The wall system would need to be flexible enough to be used in various locations, where the nominal floor-to-ceiling height was within a defined tolerance. The manufacturer could then control its installation and removal, and any subsequent refurbishment or remanufacture before being leased to another client. ●

### CPD Questions

- Who was the first person to identify the idea of the circular economy?  
a) Michael Braungart  
b) Ellen MacArthur  
c) Walter Stahel
- Which of the following is not one of the two circular economy nutrient cycles?  
a) Biological  
b) Hydrological  
c) Technical
- Approximately what percentage of the UK's construction timber supply is from overseas?  
a) 30%  
b) 60%  
c) 90%
- Which of the following may limit the reuse of the timber?  
a) Chemical modification (eg furfurylation)  
b) Chemical treatments (eg with heavy metals)  
c) Thermal modification
- Which of the following would be deemed least desirable when designing for the circular economy?  
a) Designing for flexibility, deconstruction and disassembly  
b) Designing for optimal service life  
c) Designing for recycling

To test yourself on the questions above, visit [www.constructionmanagermagazine.com/cpd-articles](http://www.constructionmanagermagazine.com/cpd-articles).



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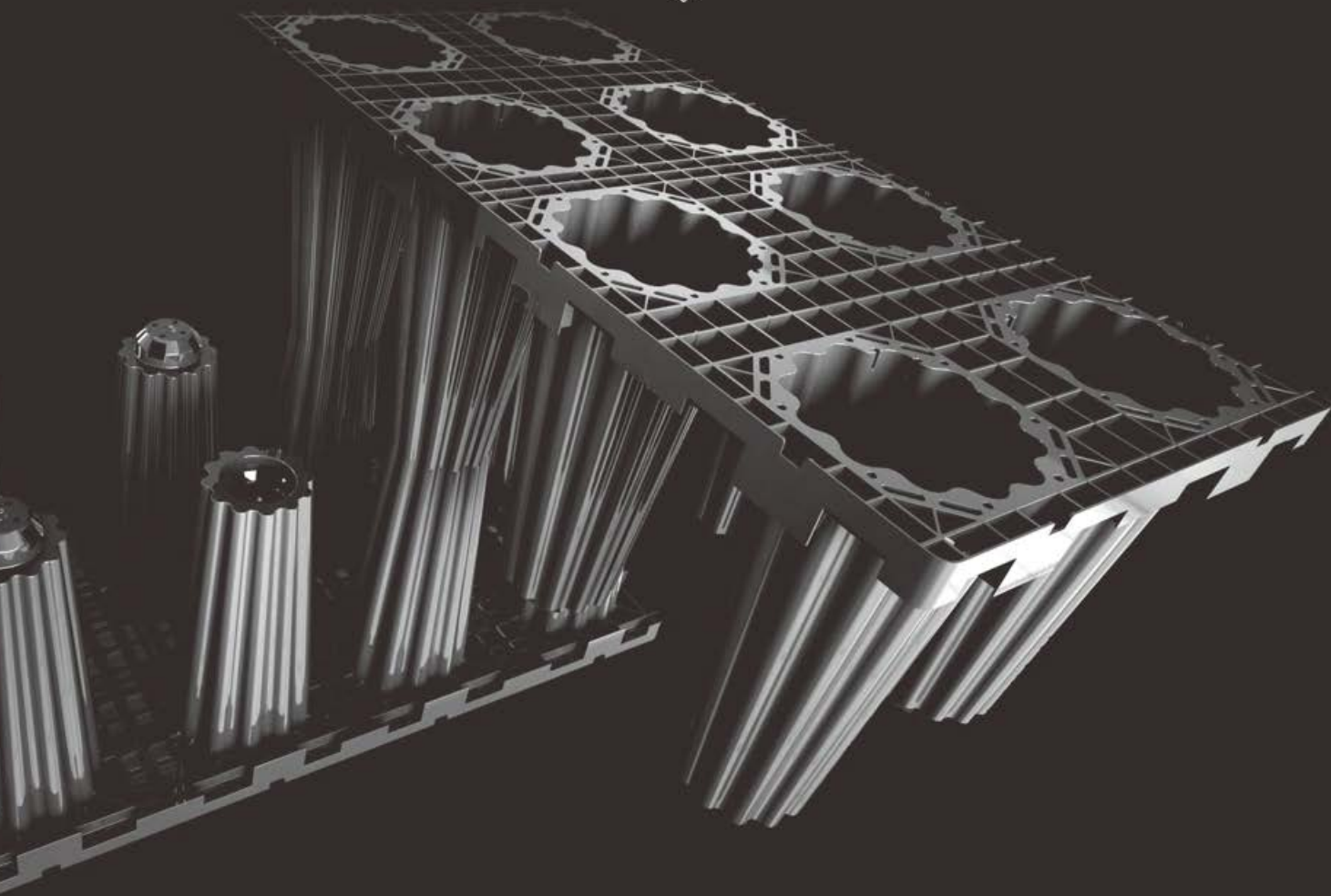
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## Introduction

From sophisticated city offices to elegant bridges, quality is the keyword for the Structural Steel Design Awards' 53rd year

Once again, the Structural Steel Design Awards (SSDA) have highlighted and rewarded many of the best examples of excellence, ambition and innovation in our built environment. Now celebrating their 53rd year, the 2021 Awards, jointly sponsored by the British Constructional Steelwork Association and Trimble Solutions (UK), continue that great tradition. This year's collection of entries demonstrate the UK's excellence in steel design, fabrication and construction.

This year the wide range of projects entered for the scheme included large prestige city office buildings and beautifully designed bridges. The judges were particularly interested in projects that reflected a reuse of existing structures and showed a commitment to reducing a project's embodied carbon.

Twenty projects made the shortlist, from which judges presented four Awards, seven Commendations and four Merits. Due to Covid-19 restrictions, the judging panel, who normally visit the shortlisted entries, had to interview the project teams via Microsoft Teams for the second year running.

The SSDA's cross-industry judging panel includes: chairman Chris Nash, Bill Taylor and Oliver Tyler representing the Royal Institute of British Architects; Richard Barrett representing the steelwork contracting industry; Paul Hulme representing the Institution of Civil Engineers; and Sarah Pellereau and Professor Roger Plank representing the Institution of Structural Engineers.



## STEEL ON TRACK FOR STATION REDEVELOPMENT

SCOTLAND'S THIRD BUSIEST RAILWAY STATION HAS EXTENDED PLATFORMS, AN EXPANDED CONCOURSE AND A NEW CONTEMPORARY INTERIOR AND EXTERIOR IN ANTICIPATION OF INCREASED PASSENGER NUMBERS

**Network Rail expects the number of** people using Glasgow Queen Street Station to increase by 40% to reach 28 million by 2030. To manage this growth, a £120m redevelopment programme has provided a spacious and accessible transport facility, designed to be a positive and prominent addition to the city's historic George Square.

With room for expansion to the north restricted by the width of a tunnel entrance, it was necessary to extend the platforms into the existing station concourse to the south.

In order to make space for these platform extensions, as well as a new concourse and station entrances, Network Rail compulsorily purchased and subsequently demolished two

**Above:** A striking new building wraps around the original 1880s train shed



Produced by the BCSA and Steel for Life  
in association with Construction Manager



**What the judges said**  
**"This redevelopment has transformed a drab, unpopular station into one that provides an impressive contemporary frontage onto Glasgow's principal square"**

buildings between the station and Glasgow's George Square.

The new station concourse is housed in a striking contemporary glass-fronted building which wraps around the historic 1880s train shed and forms the centrepiece of the redevelopment.

Improving the passenger experience was a key focus of the design and the concourse is shaped to respond to pedestrian movement, while the dramatic roof structure floods the station with natural light and creates the desired city gateway.

The concept also creates new perspectives of the Category-A listed train shed, putting the Victorian structure at the heart of the design.

A column-free concourse is created by a 54m-long x 4.5m-deep steel roof truss. Secondary trusses cantilever from this structural spine towards the train shed and the station frontage, which incorporates 15m-high RHS columns that restrain the curtain walled facade.

Weighing 80 tonnes, the roof truss was pre-cambered by over 60mm to remove dead load deflections, fabricated on the ground and lifted into place overnight by two 500-tonne-capacity cranes. The roof has a triangular form and the sloping gold-coloured aluminium soffit demands that the secondary trusses taper to create a thin leading edge where they meet the southern and western facades. Services, having risen through risers from basement

level, are distributed from one part of the station to another through roof voids created by the trusses.

Office accommodation for train station staff occupies the upper levels of a new building on the west side of the development. This area is constructed over the top of the existing underground low-level station which was created in the 1890s. An existing bridge structure could not sustain the loads from new columns, so a 38m-span storey-high truss was constructed to support the new office block.

The truss is supported on pile caps, positioned behind an existing retaining wall for the low-level station. In order to protect passengers, this large steel element was lifted into position in sections, during an overnight operation.

The western side of the office block floorplate is supported on 1,050mm-deep plate girders, which span 22m over the low-level station. The suspended floors for the concourse and the upper levels are formed with metal decking and concrete slabs

**Right:** The roof truss was fabricated on the ground and lifted into place



**Award:** Glasgow Queen Street Station  
**Architects:** BDP and IDP  
**Structural engineer:** Arup  
**Main contractor:** Balfour Beatty  
**Client:** Network Rail

supported on steel beams to form a composite flooring solution.

The SSDA judges said this major redevelopment had transformed a drab, unpopular station into one that restores the Victorian train shed and provides an impressive contemporary frontage onto Glasgow's principal square. An exceptional achievement. ●

**Below:** The sloping gold soffit sits above the column-free station concourse



PHOTOGRAPHS: ARUP



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### What the judges said

**“The team has added floors and reworked the existing steel structure to create an elegant new City office with high sustainability credentials”**

high durability has easily assured a designed life far beyond these buildings’ existing 40 years,” explains AKT II technical director David Watson.

Steelwork’s high strength has allowed novel strengthening details to carry the additional loads with minimal new material and waste. Steel has made the project’s shallow transfer beams and super-slim suspended floor structures possible, allowing these to fit within the existing buildings’ limited clearance zones.

“Analysis of the structure allowed us to identify and utilise redundancies in the original design, and work out which areas of the retained steel frames would need strengthening,” adds Watson.

“The lightweight nature of a new steel composite design, using Fabsec cellular beams, meant we were able to reuse the foundations and only had to strengthen 33% of the existing columns to support the new build elements,” he explains.

The new floors utilise a composite design, with cellular beams supporting metal decking and a concrete topping. New steel columns are bolted to the existing steel frame where possible and the building follows the original structural grid, based around a 7.5m x 7.5m column spacing.

The new office spaces open onto new terraces and atriums, while the station’s western pedestrian artery has become a dramatic, full-height

PHOTO: HUFTON + CROW

## REMODEL AND REMAKE

TWO CITY OF LONDON OFFICE BUILDINGS HAVE BEEN RECONFIGURED AND EXTENDED INTO A SINGLE MIXED-USE SCHEME THAT FORMS PART OF THE WIDER BROADGATE REDEVELOPMENT

**Totalling 66,000 sq m, 100 Liverpool Street** consists of two steel-framed buildings that have been reconfigured and enlarged into a single structure. This has achieved a 40% increase in leasable area while reusing 50% of the existing superstructure and 100% of the foundations.

New steelwork was erected to knit the structures together, replace

demolished areas and add four new floors to the top, creating a new 10-storey landmark building.

“The project shows the unique circular economy credentials of steel-framed construction. The steel industry’s fantastic quality control processes and provenance have enabled the retention of much of the existing frame, while steel’s

**Above:** Four new floors were added to create a 10-storey building

retail mall. Many of the office floors are extended outwards, while the new upper levels are progressively set back to preserve sunlight down to the adjacent Broadgate Circle plaza. The cores have been upgraded, with new express lifts installed.

AKT II also developed the structural design with proprietary design software that allowed structural performance and embodied carbon analysis directly from the shared model geometry. This included generative parametric modelling, to rapidly iterate and verify design options for balancing the new and existing structure in terms of carbon, logistics, buildability and flexibility.

The team first identified ways to distribute the increased loads with minimal intervention by assessing the buildings' designed capacity along with the consequent occupational, cladding and finishing loadings to date, and analysing the overall balancing to identify possible areas of opportunity. Through back-analysis of the existing structure using 3D finite element



**Above:** A new central atrium is at the heart of the building

**Below:** The original 1980s steel frame has been reused and extended

PHOTO: HUFTON + CROW



PHOTO: AKT II

modelling (FEM), several existing redundancies were affirmed.

Tying in a new steel frame to an existing 1980s frame has been done as seamlessly as possible. Floor slab thicknesses vary throughout the scheme, but in areas where the new build meets the retained structure, the new slab corresponds to the old.

The SSDA judges said the reworking of two 1980s office buildings cleverly presents itself as a new building. On an extremely constrained site, built over a main access into Liverpool Street Station, the team has added floors and reworked the existing steel structure to create an elegant new City office with high sustainability credentials. ●

**Award:** 100 Liverpool Street, London

**Architect:** Hopkins Architects

**Structural engineer:** AKT II

**Steelwork contractor:** William Hare Ltd

**Main contractor:** Sir Robert McAlpine

**Client:** British Land

## Shapeshifting tower overcomes site complexities

The unusual twisting form of 100 Bishopsgate was achieved with the flexibility of steel



CHARLES HOSEA PHOTOGRAPHY

**Commendation:**

100 Bishopsgate, London

**Architect:** Allies and Morrison

**Structural engineer:** Robert Bird Group

**Steelwork contractor:** William Hare Ltd

**Main contractor:** Multiplex Construction Europe Ltd

**Client:** Brookfield Properties

Featuring a shape that transforms from a parallelogram at its base to a rectangle at the top, the 40-storey 100 Bishopsgate development is the latest landmark City of London office scheme, featuring flexible, high-quality open floorplates more often associated with shorter, wider HQ buildings.

At low level the scheme features a six-storey contiguous 60m-long podium, adjoining the main tower, which accommodates large column-free floors in excess of 4,080 sq m. It is topped by a landscaped roof terrace, offering tenants a large breakout or entertaining space.

The main 40-storey tower provides the main standout element of the project and has floorplates ranging from 1,800 sq m to 2,300 sq m.

To form its eye-catching twisting shape, two facades, north and south, feature a series of inclined columns. They are installed in a staggered configuration from ground level up to level 24, where the building straightens into a rectangle.

The judges said this city tower is a fine example of good Chicago-style commercial architecture. The simplicity and refinement of design and execution conceal the considerable site and logistical complexities that this project had to overcome.



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# STEEL CREATES ELEGANT AND LIGHTWEIGHT BRIDGE

SPANNING ONE OF WORCESTER'S BUSIEST ROADS, HAMS WAY FOOTBRIDGE HAS A TRUSSED-ARCH MAIN SPAN AND REPLACES A SIGNAL-CONTROLLED PEDESTRIAN CROSSING



PHOTOGRAPHS: SIMON KENNEDY

**Forming part of the Worcester Southern Link Road Phase 4** and spanning the A4440, Hams Way Footbridge is a 300m-long pedestrian and cycle bridge with an elegant trussed-arch main span.

Client Worcestershire County Council expressed a preference for the arch-type main span design as it would be consistent with other footbridges in

the region. Aware that traditional steel arch bridges with vertical hangers can fall foul of the Eurocode pedestrian dynamics requirements, the design team proposed a 42m-long bowstring truss.

The truss diagonals provide additional stiffness and push the resonant frequencies above the limits for pedestrian excitation. The 6m-high trusses lean inward by 7.5 degrees

**Above:** The truss diagonals lean inward by 7.5 degrees

and are unbraced to give what has been described as a dramatic user experience when crossing on foot.

The main span chords and diagonal members are formed from square hollow sections (SHS) rotated through 45 degrees. These diagonal sections are said to mirror a similar detail on the nearby Diglis Footbridge and are designed to catch light on their upper



**Left:** The main span is reached via multispan approach ramps

**Below left:** Standardised 12m steel spans on single RHS piers

half with shadow cast on the lower, which makes them appear slender.

The bridge's deck plate is 10mm thick and is stiffened with flat plate stiffeners welded beneath and two edge stiffeners above, formed by folding up the edges of the deck plate. The crossbeams are rolled universal beam sections at 3m centres, designed with stiffened connections to the truss chords to provide a degree of 'U-frame' stiffness, stabilising the unbraced top chord.

At the ends of the arches the top and bottom chords meet at a tight curve, hiding the supports and giving the impression that the bridge is floating above the piers. This element of the bridge is fabricated from conically curved steel plate, stiffened internally.

"This was an important part of the

bridge design, as the architectural detail needed to resist significant forces at the junction of the arch and the hidden bearing crossbeam," says COWI associate Ben Curry.

"Early collaboration between the design and fabrication teams was key in achieving a detail that is efficient in both structural performance and fabrication effort. The finished product is said to be seamless, giving no hint of the complicated engineering within."

The bridge's main span is reached via multi-span approach ramps with an overall length of 250m, as well as a staircase at the northern end. Because of the ramps' length, an economic method and one that was quick to construct was required. The solution was to use standardised 12m-long steel spans on single rectangular hollow section steel piers.

The ramp edge beams feature the same rotated SHS form as the main span chords, but use simplified flat plate crossbeams for economy. The ramp edge beams mirror the tightly curved arch end segments at the junction between the ramps and the main span.

The steel piers were required to be relatively flexible in the longitudinal direction to accommodate thermal expansion in flexure, but stiff enough in the transverse direction to provide stiffness and restraint to eccentric loading.

The judges said this is an excellent example of how inspired architectural details can create a 'statement' bridge. ●



**Award:** Hams Way Footbridge

**Architect:** Moxon Architects

**Structural engineer:** COWI

**Steelwork contractor:**

S H Structures Ltd

**Main contractor:** Alun Griffiths (Contractors) Ltd

**Client:** Worcestershire County Council

## Hull's sculptural steel footbridge connects the city

Unusual pressed-steel form provides a welcome crossing, say the judges



**Commendation:**

Murdoch's Connection

**Architect:** Matter Architects

**Structural engineer:** Arup

**Steelwork contractor:**

S H Structures Ltd

**Main contractor:** Tilbury

Douglas Construction

**Client:** Highways England

With a span of 40m (54m long including cantilever ends) Murdoch's Connection is named after Dr Mary Murdoch, Hull's first female GP, and is one of the most important elements in Hull City Council's (HCC) masterplan for joining the north of the city centre to the vibrant southern waterfront.

Crossing the busy A63, the pedestrian bridge was funded by the Humber Local Enterprise Partnership and Highways England. Recognising the long-term role of the bridge within a developing city centre, the design makes passive allowances for future connections to adjacent areas as well as lifts and retail spaces underneath.

The steel superstructure has a hybrid shell form with a conventional tied arch formed of steel circular sections and an integrated structural canopy acting compositely with the perimeter tubes. Below the deck, the perimeter tubes transition through 'arch-feet' units, which gather the arch forces and transfer them through to the substructure on piled foundations.

The judges said the bridge provides a welcome crossing over a busy inner-city road. The unusual, sculpted form uses pressed steel plates that connect the tubular structure together resulting in a complex geometric 'roof'. This is not just a bridge but an integral part of a new urban public space.



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PHOTOGRAPHS: TOM MCNALLY / ERIC WRIGHT AND CUMBRIA COUNTY COUNCIL



## CROSSING RESURRECTED WITH STAINLESS STEEL

AN HISTORIC CUMBRIAN BRIDGE, DAMAGED BY FLOODS IN 2015, HAS BEEN REPLACED BY THE UK'S FIRST STAINLESS STEEL ROAD BRIDGE

**Storm Desmond** caused havoc in many areas of the UK in 2015 and this disruption was keenly felt in the Cumbrian village of Pooley Bridge where its historic Grade-II listed stone arch bridge collapsed due to severe flooding.

The installation of a temporary bridge relieved the pressure on local

roads, but a new permanent crossing was deemed necessary and bridge specialist Knight Architects was appointed by Cumbria County Council (CCC) in mid-2017 for the concept design of a new structure.

The objective was to conceive a flood-resilient and future-proof bridge, complying with the current

technical standards and the Environment Agency (EA) regulations and supported by the community.

The new bridge is said to be a unique and exceptionally slender 40m-span open-spandrel arch with an innovative composite stainless steel and high strength concrete structure that emerges from reinforced concrete abutments clad in local sandstone. The single clear span minimises environmental impact and flood risk.

According to the SSDA judges, ingenuity, innovation and beauty have been combined in this remarkable replacement bridge, which is the UK's first structural stainless steel road bridge.

**Above:** The light design minimises obstruction to water in flood events

Importantly, the new bridge pays homage to its predecessor and other examples of British bridge heritage. It also looks to the future, becoming a fitting addition to the site thanks to its lightness and transparency, not only providing unhindered views but minimising obstruction to water in flood events.

The bridge has 7.5m-long hidden back-spans within the abutments to transfer the horizontal component of the arch compression to the deck. This provides a traditional deck-arch appearance, but without transferring horizontal reactions to the low-capacity ground conditions.

According to the project team, the use of lean duplex stainless steel made it possible to deliver a bridge that looks contemporary, will age naturally like the previous historic bridge, has excellent durability without the need for maintenance and has about 25% more structural capacity than a conventional steel bridge.

Stainless steel has also allowed the bridge to be lighter, both for construction and in terms of slenderness. The choice of material was also based on whole life cost, having been considered by the client as a cost-effective solution when taking maintenance savings into account.

The slender design, made possible by the high strength stainless steel, minimised the amount of material used and its associated embodied CO<sub>2</sub> content. The specific type of steel used has one-fifth of the embodied carbon of the global average of stainless steel, due to its 85% recycled content and the low-carbon energy at production sites.

When it came to the construction programme, a number of challenges had to be overcome. The construction of the bridge was constrained by environmental and economic aspects



as the work had to happen outside of the salmon spawning season, but without impacting on tourism.

These issues left a very short window for the onsite works and encouraged maximising offsite construction. Using steel as part of the structure was fundamental to achieving these requirements. The 110 tonnes of steelwork, all made up of bespoke sections, was fabricated in four quarters, taking approximately 22,000 man-hours to complete. ●

**Award:** Pooley New Bridge  
**Architect:** Knight Architects  
**Structural engineer:** GHD  
**Main contractor:** Eric Wright Civil Engineering  
**Client:** Cumbria County Council

**Above:** The single clear span helps to minimise environmental impact

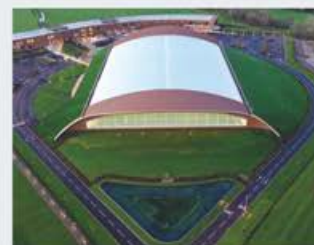
**Below:** The partially complete structure is lifted into place

**What the judges said**  
**"Ingenuity, innovation and beauty have been combined in this remarkable bridge"**



## Leicester dome blends into the landscape

A steel-framed building is at the centre of city football club's training facilities



**Commendation:** Leicester City FC Training Ground

**Architect:** KSS Group Ltd

**Structural engineer:** TRP Consulting

**Steelwork contractor:** BHC Ltd

**Main contractor:** McLaren

**Client:** Leicester City Football Club

Premier League side Leicester City has recently taken up residency in a new state-of-the-art training ground set around a main signature steel-framed building that houses an air-conditioned full-size indoor artificial pitch.

Designed to blend into the landscape, this spectacular domed structure also houses a media centre, press conference room, broadcast facilities and hospitality space.

The steel-framed building is set within a gently sloping earth embankment that blends seamlessly into the surrounding landscape.

The dome offers clear spans of 74m x 122m, achieved by using a series of 13 arched steel trusses, set at approximately 9.3m centres, supporting a box-section steel diaphragm and a series of intermediate arched rafters set at 4.65m centres.

The site also features a three-storey S-shaped training centre to accommodate the first team and academy squads, while other steel-framed buildings on site include the two-storey sports turf academy and a 499-seat grandstand for a junior pitch.

The judges said changing the design to a full steel frame saved valuable programme time and resulted in an efficient and economic solution.

## Bringing together old steel and new

Reuse and extension give a tired City office block a new lease of life

Located in the City of London, 60 London Wall consists of a complex redevelopment of an existing post-modern office block. Previously a tired and outdated steel-framed building, the seven-storey structure has been partially retained, strengthened and enlarged to create a new 11-storey structure with adaptable floorplates and a new communal atrium.

The building's extensions are formed from new steelwork, requiring a complex coordination programme to integrate the new and existing steel frames. This required a substantial number of new connection designs to support the new framing and ensure level finishes between floor levels.

By opting to reuse much of the steel frame, the original columns and beams

were surveyed and back analysed to ensure they could carry the additional loads from the new floors and to keep strengthening works to a minimum. Much of the new and existing steelwork has been left exposed internally, giving the lettable floor area a modern, industrial aesthetic.

In summary, the judges said, through careful analysis of the existing structure, this redevelopment has provided a 50% increase in floor area, including the addition of five new floors, and made major savings in carbon. An excellent achievement.

**Commendation:** 60 London Wall

**Architect:** EPR Architects

**Structural engineer:**

Heyne Tillett Steel

**Steelwork contractor:** Severfield

**Main contractor:** Skanska

**Client:** LaSalle Investment Management



PHOTO: MAX BROOK



PHOTO: JACK HOBHOUSE

## Elegant industrial look for 80 Charlotte Street

Steelwork and services are exposed in this net-zero contemporary commercial scheme

Comprising three separate buildings, 80 Charlotte Street is a prime central London commercial scheme incorporating new steel-framed elements as well as retained and renovated structures.

Exposed steelwork throughout, combined with a 9m x 6m column grid pattern, has been used to create a contemporary and spacious office environment. The exposed nature of the internal steelwork meant the detailing of the connections needed to be simple, clean and elegant. Flush end plates have been used, with toe plates to beam and column flanges.

Within the building, the services, accommodated in bespoke cells cut into the plate girder beams, are also exposed, adding to the scheme's industrial look.

The steel plate girder design provided a customised depth of steel beam with limiting deflection values. As floor-to-ceiling heights were critical, Bourne invested in advanced

robotic manufacturing techniques to ensure the quality of the assembled girders met the enhanced manufacturing tolerances.

Summing up, the SSDA judges said the team had achieved the surprisingly difficult task of making a complex building look simple.

Optimising beam spans reduces embodied carbon and an all-electric power system that uses renewable electricity ensures the building is net-zero carbon.

**Commendation:**

80 Charlotte Street, London

**Architect:** Make

**Structural engineer:**

Arup

**Steelwork contractor:**

Bourne Group Ltd

**Main contractor:**

Multiplex Construction Europe Ltd

**Client:** Derwent London



Produced by the BCSA and Steel for Life  
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## Steel brings in complex Catalyst on time and budget

Sloping facades and a triangular site called for the adaptability of a structural steel frame

Located in the heart of Newcastle city centre, The Catalyst is the new steel-framed home of the National Innovation Centre for Ageing and National Innovation Centre for Data.

A striking and unique exterior has been created by sloping the facades, while the triangular site, which dictated the structure's shape on plan, has been softened by curving the three corners.

This exciting and yet simple and elegant architectural solution was then combined with the structural engineering to create the finished standout building.

The structural steel frame is highlighted by expressed sloping diagrid facades and triple-storey diagrid trusses that span the open landscaping area at the front of the building.

According to shed managing director Marc Horn, the innovative diagrid solution was made possible by the very close collaboration between the architect, engineer, steelwork contractor and main contractor.

"The complex intertwining of different uses alongside the building services meant that the main internal spaces are largely column-free, using shallow cellular beams for service integration."

Structural steelwork allowed the building to be built in a short construction programme and under budget. Using an alternative framing solution would have meant an increased budget, a longer programme and more of an environmental impact on the surrounding area.

**Commendation:** The Catalyst, Newcastle upon Tyne

**Architect:** GSSArchitecture

**Structural engineer:** shed

**Main contractor:**

Bowmer and Kirkland Ltd

**Client:** Newcastle University



PHOTO: BOWMER AND KIRKLAND LTD

## Wraparound stadium meets Brentford's design goals

A restricted site posed complex structural challenges

Back in English football's top flight for the first time since 1947, Brentford kicked off the current Premier League campaign in a new 17,250-capacity stadium.

The Brentford Community Stadium's design responds to a site bounded closely by three railway lines, which truncate two corners of the typical stadium footprint. This posed the challenge of integrating the taller south stand with the three remaining lower height stands.

By sloping the gable ends of the south stand, the design achieves a continuous plane, dynamically connecting the cantilevering tips of the roofs.

This not only achieves the client's ambition for a continuous seating bowl, a remarkable achievement for such a constrained site, but it also symbolically frames the view of the historic Kew Bridge Standpipe tower.

Lightweight steelwork roof options were used to achieve a continuous roof concept without movement joints. The longest span in the south stand roof is formed from a series of 37m-long cantilever trusses.

The judges said this simple wrap-around stadium has a clean uncluttered appearance, with no tension bracing despite some long, cantilevered sections. Careful design and planning resulted in significant savings in both cost and carbon.



PHOTO: ARUP

**Commendation:** Brentford Community Stadium

**Architect:** AFL Architects

**Structural engineer:** Arup

**Main contractor:** Buckingham Group Contracting Ltd

**Client:** Lionel Road Developments Ltd

## Other finalists:

- Majestic, Leeds
- Manchester Airport Terminal 2 Transformation
- Pinewood Studios Phase II
- Royal College of Obstetricians and Gynaecologists, Union Street
- The University of Winchester, West Downs Campus



## Steel spans revive Lake District sites

As well as constructing two new bridges on the Railway Trail, a third was needed for their installation

Brundholme and Low Pearson are two new steel truss bridges that have been installed as part of the reconstruction of the Lake District's popular Railway Trail walking route.

Beaver Bridges developed a build sequence in agreement with the main contractor which eliminated the need for disruptive concrete works in the Greta river and reduced programme time and associated costs.

Because the Low Pearson site required access via the Brundholme site, the proposal included a modular temporary steel bridge designed to accommodate construction traffic up to 44 tonnes in weight.

Applying the principles of DfMA (Design for Manufacture and Assembly), the Low Pearson bridge was fabricated in three

sections, delivered to a compound next to the Brundholme site, loaded on temporary vehicle bogies and moved to site by tractor.

On site, the sections were bolted together, fitted with a temporary launch nose adapter, launch frame and lower boom launch runway beams, which enabled the bridge to be launched into position without damaging the permanent works. The same system was used for the Brundholme bridge.

**Merit:** Brundholme and

Low Pearson Bridges

**Architect:** Capita

**Structural engineer:**

Beaver Bridges Ltd

**Steelwork contractor:**

Jamestown Manufacturing Ltd

**Main contractor:**

Cubby Construction Ltd

**Client:** Lake District National Park Authority

## A lightweight solution for Heron Quay Pavilion

Canary Wharf estate needed the right frame to work with 1980s Docklands foundations

Sitting on a weathering steel grillage, spanning over a portion of Middle Dock in London's Canary Wharf estate, Heron Quay Pavilion is a unique structure 63m-wide x 23m-deep.

The five-storey building is mixed-use housing including restaurants, guest rooms and leisure spaces including a gym and spa.

Its 6,000 sq m internal floor space includes open terraces at every level and a roof terrace giving visitors views across the wharf.

The project utilises a series of marine piles and pile caps, constructed in the early 1980s to support low-rise office buildings, and a logistics dockside deck, which were demolished in 2017.

The foundations are a major factor in the design of the building as they limit the size and weight of the new structure. Because of this, the choice of a steel framing

solution for the building was said to be the only option.

Using steel for the structure also delivered the principal stability system, using steel bracing, and allowed for control of individual beam stiffness – essential for the steel members supporting the facade, which had onerous deflection criteria.

**Merit:** Heron Quay Pavilion

**Architect:** Adamson Associates

**Structural engineer:** Arup

**Steelwork contractor:** Elland Steel Structures Ltd

**Main contractor:** Canary Wharf Contractors

**Client:** Canary Wharf Group



PHOTO: PETER MATTHEWS



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## The Hickman uses steel to express Whitechapel's industrial past

A group of separate buildings in a conservation area have become a unified modern workplace and retained their history



PHOTO: ZISHAN KHAN

Situated within the Whitechapel High Street Conservation Area, The Hickman is a contemporary workplace formed by unifying a collection of separate buildings that had evolved over the past two centuries.

The site comprised six buildings, patched together and reconstructed over time, each with varying structures, the earliest of which dated back to 1800s.

The original main building had five storeys plus a part basement. The roof and part of the fourth floor had been demolished several years ago and replaced with a new lightweight steel structure. As part of the new scheme, the building now rises to level seven, with three further steel-framed storeys added.

Internally, to express the building's industrial past, the structure is left exposed. On the original floors, the concrete encasement to the columns has been stripped back, exposing the riveted plates.

The judges said that, despite an almost total absence of base building information, through an exemplary level of investigation, an intensely forensic analysis of fire insurance documents and a highly responsive approach to 'as found' construction, which included innovative digital modelling of the completed work, this project showcased the potential of structural steel in repurposing and adding value to even the most challenging projects.

**Merit:** The Hickman  
**Architect:** DSDHA  
**Structural engineer:** Heyne Tillett Steel  
**Steelwork contractor:** Hillcrest Structural Ltd  
**Main contractor:** Ellmer Construction  
**Client:** Great Portland Estates plc

## New steel roof structure lifts Wenlock Works

Concrete-framed Shoreditch offices from the 1980s are given a new lease of life

Wenlock Works in Shoreditch, east London, is a former 1980s concrete-framed building that was once divided into two parts to accommodate offices and a printing press. It has now been completely refurbished and enlarged with new steelwork to create approximately 14,000 sq m of high quality commercial space.

The client's brief included a number of architectural and structural improvements for the building, most notably an increase in the net internal area (NIA), a new services strategy, rejuvenation of the facade and a comprehensive redevelopment of the architectural and structural features.

To increase the building's NIA, the existing roof structure was removed and replaced with a lightweight, two-storey, plus plant deck, steel structure.

Through careful design of the new lightweight steel storeys, the fifth-floor slab was retained to become the transfer element, thereby saving significant time, money and embodied carbon. The slab was strengthened where required using carbon fibre to avoid the need for transfer beams that would have compromised the floor-to-ceiling heights.

The judges said it was a good example of sustainable construction. By using steel to open up



PHOTO: BETH DAVIS

an existing building, extend it upwards and outwards with a lightweight frame, this 1980s office building has been repurposed with a 40% increase in floor area and greater flexibility.

**Merit:** Wenlock Works  
**Architect:** Buckley Gray Yeoman  
**Structural engineer:** Heyne Tillett Steel  
**Steelwork contractor:** Billington Structures Ltd  
**Main contractor:** Sir Robert McAlpine  
**Client:** Stanhope PLC



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## THE IMPORTANCE OF ENSURING WC COMPLIANCE

SPECIFYING THE RIGHT WC SYSTEMS CAN HELP PROTECT THE BUILDING'S POTABLE WATER SUPPLY FROM CONTAMINATION, EXPLAINS **SCOTT JAMES**

Innovations in bathroom and washroom systems have delivered significant benefits for users and enabled water saving. However, when specifying these products it is important to ensure they comply with the Water Supply (Water Fittings) Regulations 1999, which are intended to prevent the waste, misuse, undue consumption and contamination of the drinking water supply.

While often not fully appreciated, the specification of good quality WC cistern has a role in protecting the integrity of potable water supplies within a building. If poorly designed, it is possible for backflow to occur from the cistern into the supply pipework and contaminate the water.

**Above:** Viega has released new Prevista pre-wall cisterns to meet updated guidelines

In the past decade there have been a number of documented cases where this occurred, and the backflow was often identified because the water contained evidence of the dissolved cistern block. These became known as 'blue water' incidents because of the characteristic colour.

One of the simplest and most reliable ways of achieving compliance with the regulations and ensuring the system performs correctly is to specify products certified by the Water Regulations Advisory Scheme (WRAS) or Kiwa. However, the WRAS and Kiwa acceptance criteria for the design of filling valves have recently been updated to strengthen the protections against backflow and contamination of the water supply.

If the valve is faulty, of poor quality or improperly installed, backflow can occur when the water level in the cistern reaches the filling valve, and a drop in pressure causes the water to be drawn back into the supply pipework. Pressure within the system may drop for a number of different reasons including leaks in the system or water being drawn from elsewhere, such as a tap, shower or toilet.

To prevent this, cisterns contain backflow protections, such as a physical air gap between the filling valve and the water level. However, in some cases these protections can become compromised or are not sufficient to prevent the backflow. To address these issues WRAS and Kiwa updated their acceptance criteria for approval of filling valves to create a more robust requirement called the Type AUK1 air gap.

### Type AUK1 AG air gap

A Type AG air gap is a non-mechanical arrangement inside a cistern that provides a visible, unobstructed and complete physical air break between

**"Systems previously approved by WRAS and Kiwa may no longer comply. Product information must be reviewed carefully to make sure it meets the new guidelines"**

the lowest level of water discharge and the critical water level (CWL).

The physical air break must be at least 20mm, or twice the internal diameter of the inlet pipe, whichever is greater. There must also be a gap of at least 300mm from the overflow pipe to the top or spillover level of the WC pan. The overflow must be circular and of a minimum size 19mm, providing this is capable of accommodating maximum inlet flow.

Lastly there must also be at least a 15mm gap between the lowest level of the WC cistern and the top or spillover level of the WC pan.

As a result of this update, systems previously approved by WRAS and Kiwa may no longer comply. Therefore, the product information must be reviewed carefully to ensure it meets the new requirements.

At Viega, we have released new, fully WRAS and Kiwa-approved versions of our Prevista pre-wall cisterns to meet the updated guidelines. Our Prevista range, available in different heights and installation options, also includes features such as height adjustability, flexible dual flush, easy installation and simple maintenance. This allows simple compliance with the regulations, regardless of the requirements of the bathroom or washroom. ●

**To find out more about the Viega range of pre-wall systems visit [prevista.viega.com](http://prevista.viega.com). Scott James is managing director at Viega.**

# salus

Building Compliance without Complexity

Salus are a leading Corporate Approved Inspector who are now looking to recruit new Project Surveyors who have a good depth of experience and technical knowledge of construction methods and who are looking for a career change.

Having experience within building control would be an advantage, however, our structured Career Pathway would see you supported and trained in all aspects of the building control profession.

If you are looking to diversify and transfer your construction experience into the realm of building control, we would very much like to hear from you.

These new posts will build upon your strengths and experience whilst ensuring you receive on the job and off the job structured training in both the building regulations and associated legislation, and the best practice methods that we have adopted through the Building Control Performance Standards and the CIC Code of Practice for Approved Inspectors.

## PROJECT SURVEYORS

**EAST MIDLAND REGION & M5 CORRIDOR  
AND THE SOUTH EAST**

We have a diverse range of established clients throughout the UK and a fantastic team of employees throughout the country who enjoy their roles here at Salus and can achieve their desired work life balance. Our workload is distributed to enable you to work within a reasonable distance of either your home or one of our established offices.

Working for us you can expect:

- Competitive Salary
- 31 Days Annual Leave + bank holidays
- Pension Scheme
- £4,800pa Car Allowance plus 45p per mile or
- Generous salary sacrifice contribution to our new tax efficient hybrid / electric car scheme
- Payment of 2 professional fees
- Excellent structured Career Pathway opportunities including Building Control Specialisms

**Our Ethos is simple - Come to work, Enjoy what you do, Be acknowledged and rewarded**

Would you like more information or an informal chat?

For opportunities in the East Midlands Region or M5 Corridor please call:

**STEVEN COOPER, MCABE C.Build.E**  
Regional Managing Associate  
07500 776 358

For opportunities in the South East Region please call

**JAMES EMERY, BSc MRICS FCABE**  
Regional Managing Associate  
07876 594 259

Or send your CV to  
[recruitment@salusai.co.uk](mailto:recruitment@salusai.co.uk)

Visit our website at  
[www.salusai.co.uk](http://www.salusai.co.uk)



## CITIZEN

Playing a crucial role in Construction and parts manufacture for Yellow Goods

Machines in the Construction and Yellow Goods sector have tough lives - this is why manufacturers of these hard-working machines rely on Citizen CNC lathes to produce the complex precision parts that keep the equipment operating at peak performance. Our machines feature patented LFV technology to optimise cutting processes for difficult-to-machine materials. Find out more by visiting our website.

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## FLEXIBLE LEASING STILL RETAINS ITS STATUS

AS DEMAND FOR CONSTRUCTION VEHICLE FLEET FLEXIBILITY GROWS AMID SUPPLY CHAIN CHALLENGES AND THE SWITCH TO ELECTRIC VEHICLES, FLEXIBLE LEASING CAN PROVIDE THE SOLUTION, SAYS **COLIN WILSON**

**Above:** Ford offers a variety of vehicles to suit all purposes

**Top right:** Ford's Mobile Service keeps businesses on the road

**Right:** Flexible leasing provides the right van for the site

When I started my career in the motor industry over 35 years ago, flexible leasing hadn't really been heard of, yet there were plenty of established rental companies and many new ones entering the market on a regular basis.

These rental companies had started to identify the demand from the

construction and civil engineering industry to hire vehicles on a shorter term basis, to match contracts they were winning and to avoid the risk and cost of vehicles standing idle between those contracts.

Vehicle choice was pretty limited back then. Ford was one of the key manufacturers supplying to the rental

industry, which generally meant a choice of an Escort van, Transit van, Luton and 7.5 tonne box, dropside or tipper body. These vehicles would almost certainly be white and, if you were lucky, you could spec a tow bar. Those were the days when most people could drive a 7.5 tonne vehicle on a standard licence too.

In association with



This prompted rental and leasing providers to start to either market themselves as flexible vehicle providers or simply drop the word 'flex' in the title somewhere, to illustrate the changing demand of rental.

The construction industry was really the pioneer of flexible rental. Even companies that didn't match flexible vehicle supply to specific contracts quickly developed a 'sweet spot' of around 20-30% of their total fleet having a degree of flexibility.

Now, however, every sector of the industry adopts this mantra as the world fluxes in and out of certainty. No one wants to be left with vehicles in a downturn – which, let's be honest, we have all had our fair share of in the past few decades.

We now find ourselves in a world where many manufacturers are consolidating. The lack of materials and parts is limiting supply and the transition to electric vehicles is well under way, so now, more than ever, demand for flexibility is growing.

Flexible leasing is Ford Fleet Management's solution designed for all fleet sizes and complexity. Ford Fleet Management has the experience and products to enable it to offer a flexible leasing solution that is truly unique in the market.

We have taken a conscious decision to move away from traditional cars and standard vans to a more specialist and varied product range of vehicles, from Ford Rangers to Transits, including dropsides, tippers, welfare vehicles, traffic management, cherry pickers and refrigerated vehicles. We also have E-Transits on order.

Our goal is to make life easier for our customers. By choosing the correct vehicle with a full service package, they can benefit from:

- Contract from one to 24 months
- No delivery costs or collection fees on agreements over 90 days



**"We have taken a conscious decision to move to a more specialist and varied product range of vehicles"**

Colin Wilson,  
Ford Fleet  
Management

- Road fund licence, maintenance and roadside assistance included
- Access to our most popular vehicle groups at industry-leading competitive rates
- Contract termination with just 48 hours' notice
- No mileage surcharges within the equivalent maximum of 30,000 miles per year and not exceeding stipulated de-fleet mileage.

Help and impartial advice is always available and only a phone call away. Speak to one of the Ford Fleet Management team: we would welcome the opportunity to help your business to thrive. ●



To contact Colin Wilson, corporate account manager at Ford Fleet Management, email: [Colin.Wilson@fordfleetmanagement.co.uk](mailto:Colin.Wilson@fordfleetmanagement.co.uk) or phone: 07545 648172. Or visit: [www.fordfleetmanagement.co.uk](http://www.fordfleetmanagement.co.uk). Business customers only.

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## 'BIM AND SAFETY CAN HELP EACH OTHER'

IMPROVED HEALTH AND SAFETY IS A GREAT ARGUMENT FOR BIM ADOPTION, AND AUSTRALIAN PROFESSOR KERRY LONDON IS SET ON PROVING THAT. SHE TELLS **ROD SWEET** ABOUT HER RESEARCH

If BIM was proven to deliver improved health and safety, would that help convince construction business leaders encourage of its benefits? Professor Kerry London FCIQB believes so. Pro vice chancellor of research at Torrens University Australia, she has for years researched the adoption of new technologies in construction, including robotics and offsite manufacturing.

For the last three years, she has focused on how BIM can make projects safer for workers. Her reasoning is straightforward: if a digital model of a project can be minutely interrogated to optimise construction planning, construction methodologies, logistics and clash detection, it's a small step to interrogate that model for safety risks such as working at height and plant collisions.

In August 2019, the government of New South Wales (NSW), through its Centre for Work Health and Safety, commissioned London to lead a team of researchers from Torrens



**"Integrating BIM and safety can happen when the client has created an environment for good data management"**

Kerry London  
FCIQB

and Western Sydney University to investigate how BIM could be used to improve safety outcomes. The work involved scouring the world for examples of best practice and developing tools and guidelines for clients to use. The research project was completed in October this year.

### Integrated safety management

In the first phase, researchers sought examples of safety management being integrated in BIM-enabled projects around the world, interviewing experts in Australia, Singapore and the UK.

"Some projects were pilots, while others were little gems of interesting practice where people were using a model to query and interrogate construction methodology so they could go to the client leadership team and say, did you know that if we did this, it would make the work safer?" she explains.

"The model was used to visualise the construction sequencing of different construction methodologies. This was especially

useful to show the client what a safer approach looked like on site compared to the approach that was maybe less safe."

In Australia, the researchers interviewed 25 senior industry figures, and examined three major BIM-enabled projects. That led to the development of a suite of guidance notes, decision-making tools and cases studies for clients, which are to be launched by the NSW government in the coming months.

"What we found was that client leadership is a really important part of BIM adoption and bringing BIM and safety management together," said London. "Procurement and tendering are important because sometimes we put things out to tender and we ask for a BIM model but we may not quite know what we're getting at the end of the day.

"So we thought, how can we give clients tools and understanding so they can lead more effectively in a collaborative way?

"Integrating BIM and work health and safety management can



happen when the client has created an environment for good data management. Some clients are already focused on that, such as Transport for NSW. They're very keen on digital engineering. So they create the environment and the construction supply chain has to respond."

#### Subcontractors using BIM

Some specialist subcontractors are already using BIM imaginatively. A global crane company active in NSW – Marr Contracting – uses BIM extensively to model crane erection and dismantling, organise communication with the client and engineers, and interrogate and visualise construction methodologies to optimise movements for safety.

Another example is F&D Normoyle Engineering, which prefabricates timber screens for facades. It was working on a complex project to construct a nine-storey circular building, the Darling Exchange at Sydney's Darling Harbour. F&D

modelled the logistics planning in BIM and each week it would use the BIM model to communicate to other trades what elements were arriving on site, when and how they would be installed.

"Examples like these informed the principles and tools we produced, and they make a great argument for early contractor involvement in achieving a good outcome," London says.

Separate to the research, the NSW government released its Infrastructure Data Management Framework (IDMF) in December last year.

"I was scared to open that document," London says, "because I worried it might say everything we've done is completely off track, but it was very gratifying to see that everything we're doing is aligned with their framework."

There has been disagreement over how much weight clients should give BIM during procurement, London says, but she feels clients need to know what use they will make of a BIM model and how it will work with their company's ethos for work health and safety.

#### Kerry London FCIOB CV (selected roles)

**2020-present:** Pro vice chancellor research, Torrens University

**2017-20:** Dean, School of Built Environment, and other roles, Western Sydney University

**2016-17:** Dean, research and innovation, University of South Australia

**2011-16:** Professor, construction project management, RMIT University

**2013-present:** Board member, Australian Sustainable Built Environment Council

**2011-13:** President, Australasian Chartered Institute of Building

"In Australia multiple parties, such as employers, contractors, designers and clients, can be liable for work health and safety and site accidents, so interest should be keen," she said. "People tend to approach BIM generically, from a technology point of view and with a focus on improving productivity in general."

"But with health and safety being such an important topic here, as it is in the UK, it made sense to talk about how one can help the other, and see if that helps BIM adoption in a different way."

#### Drafting the new standard

London says the approach is gaining traction. She is joining the committee responsible for drafting the ISO 19650 standard to focus on BIM and safety management.

"Not everybody gets excited about that kind of thing," she says, "but I think it's a really good outcome for the project. International standards have such reach and longevity that the research outcomes from this study will certainly have significant impact." ●

## Careers

### This much I know

#### Jackie Pinder

Managing partner, Rider Levett  
Bucknall West and Wales Region

## 'Look for the positive in everything'

RLB's Jackie Pinder tells **CM** about the importance of listening and communicating in successful construction, and the inspirational influence of David Bucknall

Pinder: "The built environment has a huge influence on society"



ANDREI LUCA

### What made you go into construction?

My family were all in the Navy and I did not want to follow in their footsteps. I wanted a career where I could work in teams and not be entirely office based.

My careers officer told me about quantity surveying and so I spent a week with a local practice. I had a great time measuring drainage off a drawing and then going to site to see how it had been installed and constructed.

### What do you remember from your first project?

It was a residential project where local authority Reema PRC (prefabricated reinforced concrete) houses were being repaired to remove concrete cancer. An entire housing estate was vacated and we had a very tight programme to complete the works and allow the families to return. It was really interesting to see how the properties were deconstructed and reconstructed in accordance with the Reema repair system.

### What is the best advice you whave been given?

Be positive and learn from your mistakes.

### Which project you worked on are you most proud of?

Southwick House - HMS Dryad - a grade II-listed property that we had to convert into officer cabins for the Royal Navy. But the unique part was that this was the building from which Operation Overlord, the D-Day landings, was coordinated.

It had the original operational map of the Normandy beaches and landings with all of the craft and ships marked with pins. We had to undertake all of the works while protecting the map and not let any of the pins drop out!

**"Communication skills are very important and can be the key to successful projects and help create longlasting career relationships"**

Jackie Pinder, Rider Levett Bucknall

### Who do you most admire in the construction industry, past or present?

David Bucknall. He was an inspirational man, to those who worked with him and knew him throughout his long career. David had energy, passion and drive for the construction industry and always took the time to talk to all of his staff.

### What advice would you give someone starting in construction today?

Communication skills are very important and can be the key to successful projects and help create long lasting career relationships. Learn how to be a good listener and look at any issues from all points of view.

### What one thing would you change to make careers in construction more appealing?

Professional bodies should emphasise that property and construction is not all about onsite construction. The built environment has a huge impact on society and so our careers and projects can make a real difference.

### What's the most valuable training you've received and why?

Not training as such, but I read *The Energy Bus* by Jon Gordon and this has changed the way I look at the world.

### Do you have a motto that applies to your work and if so, what is it?

Look for the positive in everything. There is too much negativity in this world and it saps energy, creativity and ultimately success. ●

### Job spotlight

**Nyree Millar-Bell**, director  
Millar-Bell Aviation Consultancy

## Cleared for take-off



Made redundant from her role as Edinburgh Airport operations resilience manager in 2020, Nyree Millar-Bell went on to set up her own airport safeguarding consultancy

### Describe a typical day in your job.

I liaise with clients in the property, renewables and construction sector.

The first step is to carry out a free pre-application assessment. This determines whether their development is within 15km of an airport. This allows us to gather facts on the type of development and identify any high problem issues.

We form a hypothesis, which advises the developer of any airport restrictions. This will highlight if these will have a detrimental impact to their planning application.

If this results in an impact, we then carry out an airport impact assessment (AIA). This allows us to assess each airport restriction and identify possible mitigation solutions. Our goal is to provide the correct 'build' specifications to our developer. This is to ensure it meets all the safeguarding requirements of an airport.

The AIA provides evidence in a report form for our developers. They can submit this to the local council, alongside its planning submission. We support the developer throughout their entire planning process.

### What key skills and knowledge are needed for your role?

A role within aerodrome safeguarding requires extensive aviation knowledge and experience. This includes working airside at an airport, learning the fundamentals of airside operations. Knowledge of specific aviation regulations are also required. These are: International Civil Aviation Organisation (ICAO) and European Aviation Safety Agency (EASA).

I undertook airside operation and wildlife hazard management training at Edinburgh Airport. I also attended training in Gatwick called Aerodrome Safeguarding and Town & Country Planning.

### What are the most challenging aspects of your job? And the most rewarding?

The challenge is balancing the airport safety regulations with the developer's design expectations. This requires innovative thinking and problem-solving. The fulfilling part is securing the result of an airport planning consent. Especially first time, with no planning delays or extra costs for the developer.

I used to work as a safeguarding manager at Edinburgh Airport. This involved issuing many objections to full planning applications. We now take great pleasure in supporting developers through this process. We're a key part of the successful delivery of the developer's project - which as an airport safeguarding consultant is our end goal. ●

# CONSTRUCTION MANAGER JOBS

Hundreds of the best jobs in construction.  
Recruitment news and insight.  
[www.constructionmanagerjobs.co.uk](http://www.constructionmanagerjobs.co.uk)

## New training facility delivers fresh opportunities

Trainees at Winvic and IM Properties' Future of Construction Training Centre offered employment



**Above:** The first cohort of trainees **Below:** Anthony Land (right), who was offered a trainee position with TSM, with Winvic's Alex Whitelaw **Bottom:** Traffic management training in action

The first cohort of trainees from a new training facility have secured jobs as a result of the skills they acquired.

Seven trainees who undertook a specialist vocational traffic management course at the Future of Construction Training Centre in Mercia Park, Leicestershire, were offered employment with various traffic management contractors at the end of the course.

The centre, which was set up by Winvic Construction and its longstanding client IM Properties, opened in September. It marks the two companies' joint intention to make a difference to local people's lives through social value initiatives - with a focus on bringing forward training and employment opportunities.

The training centre is available for use by contractors, subcontractors, colleges, universities and specialist training providers. It comprises an onsite construction training facility with practical outdoor space where training scenarios can

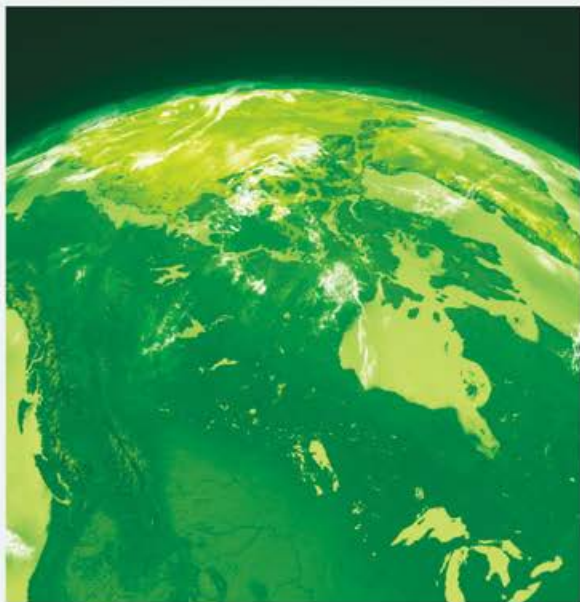
be created - from traffic management to health and safety, from groundworks to steelworks. The classroom environment accommodates around 10 people for theoretical training.

Local and regional education and training providers have been in discussions about making use of the centre and a number of subcontractors are lined up.





## CIOB Community



### Event

## Net zero challenges

Live discussion with views from experts promises to make an exciting event

The Midlands team is hosting a unique event in November featuring speakers from the government, the CIOB, a designer and a main contractor sharing their thoughts and plans for achieving carbon-neutral projects in the Midlands.

Net Zero: A View from All Sides will take place on Thursday 18 November

**Right, from left:** Alex Carter, David Cadiot, Eddie Hughes MP and Paul Chatwin will all speak at the event

at the Arden Hotel and Leisure Club, Solihull. During the course of the evening there will be time built in for networking.

The first speaker, who will present the government's view of net zero is Eddie Hughes MCI, MP for Walsall North within the Department for Levelling Up, Housing and Communities (DLUHC).

He will open with a summary of the ministerial office move to Wolverhampton and the benefits this will bring to the region, followed by a government view of net zero, including targets and Midlands-specific goals.

Daisie Rees-Evans, CIOB policy officer, will then share how the CIOB is leading on discussions for sustainability and net zero at industry and government level.

The designer's view will then be delivered by two speakers from Cundall – partner Alex Carter and sustainability associate Paul Chatwin. They will share approaches and best practice in relation to

successfully delivering low and net zero carbon designs.

They will also look at how the net zero design challenge is being applied to regional projects such as Curzon Wharf in Birmingham.

Finally, the main contractor's view will be covered by David Cadiot, executive general manager, UK regions, construction – Europe at Lendlease.

He will look at the ways in which net zero can be delivered in practice, bringing in experience on regional schemes – plans for Smithfield, Glen Parva prison and Perry Barr residential scheme.

Cadiot will also cover Lendlease's ambitious carbon targets, the tangible progress made to date, key learnings and views on how the sector can accelerate to net zero.

Attendees will have the opportunity to put questions to all four panellists. ●

**For more information, or to book your place, please contact** [gffloyd@ciob.org.uk](mailto:gffloyd@ciob.org.uk).



### Climate change

## COP26 opportunity for young professionals



The CIOB Tomorrow's Leaders are offered the opportunity to be involved with COP26

The Construction Leadership Council has a rare opportunity for a young professional (aged 18-35) to co-chair an event at the COP26 Green Zone in Glasgow in November.

This workshop will discuss the sector's global role in collectively reducing its carbon emissions and achieving net zero by 2035.

The chosen candidate will have the opportunity to talk about their personal experience, any barriers and opportunities

they see, and will be part of a broad menu of speakers which includes Andrew Griffith MP, the prime minister's net zero business champion.

If you register your interest please promote the fact you are part of the CIOB community or reach out to the CIOB Tomorrow's Leaders team to let them know. To register your interest email [construction.enquiries@beis.gov.uk](mailto:construction.enquiries@beis.gov.uk).



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

## Training

# Academy offers coaching course for more effective management

Dave Stitt's online Coach For Results course empowers participants to instill a coaching culture in their companies, to achieve good results



The CIOB Academy begins a course this month teaching how to incorporate coaching techniques into management style.

The online, two-month course Coach for Results is designed to enable candidates to become more effective managers and to grow confidence, capability and enthusiasm in the people around them.

Designed with young professionals in mind, and drawing on the trainer's 45 years' experience in the construction industry, Coach for Results challenges the 'command-and-control' management style that demotivates people, increases stress and suppresses initiative.

The course equips participants with coaching skills to raise colleagues' awareness of the barriers they face, which empowers them to take responsibility for moving forward. They will become more effective in their jobs by unleashing the talent latent in the people around them.

The course consists of two five-minute videos released each week over 10 weeks, which set out the essentials of a coaching approach. Participants can view the videos in their own time.

Each week an interesting in-work assignment allows participants to practise what they are learning and share their findings with written feedback that allows them to network and learn from each other.

Coach for Results was created by Dave Stitt FCIOB, a chartered civil engineer and certified coach who rose up the ranks at Taylor Woodrow, then Birse, before leading an award-winning culture change programme at Wates. ●

**The course begins on 2 November and costs £149. Contact academy@ciob.org.uk.**

**Opposite:**  
Certified coach  
Dave Stitt FCIOB  
will lead the course

**"Coach For Results challenges the 'command-and-control' management style that demotivates people and suppresses initiative"**

## Video

# CIOB film shows members sharing their views on EDI

London and Hemel Hempstead Hub members talk about diversity in new YouTube short

Members of the CIOB have created a video setting out their vision for an inclusive future in construction.

Building an Inclusive Future features members of the London and Hemel Hempstead hubs.

In the video, steered by Andy Stanley, members describe their experiences and talk about what diversity and inclusion in construction mean to them.

They invite other construction professionals to share their views on what changes they would like to see to help the industry to be more inclusive.

Alan McKenzie, Andy Stanley, Anjali Pindoria, Dylan Rishworth, Jean Duprez, Rachael Keeble, and Stuart Wilks feature in the video, which is available to watch at [www.youtube.com/watch?v=nli6JLebv04](https://www.youtube.com/watch?v=nli6JLebv04).

## Site visit

# Visit a modular net zero build

Book a place for Reds10's new Wokingham project

Members are invited to a live site visit of Dinton Activity Centre in Wokingham, Berkshire, in November.

The £2.8m project is a modular construction within a very limited site area and adjacent to the Emm Brook river.

Wokingham Borough Council appointed modular building specialist Reds10 to commence design work in August 2019. The two-storey centre supports the council's mission to make Wokingham a carbon neutral borough by 2030.

The centre includes with a number of energy-efficient features, including solar panels and windcatchers on the roof and air source heat pumps, which will significantly reduce the centre's overall energy demand.

Some 75% of the new building was completed off site using modern methods of construction by Reds10. The modular units were constructed in its factory in Driffield, Yorkshire, with 16 modular frames built and transported to Dinton Pastures Country Park then lifted into place.

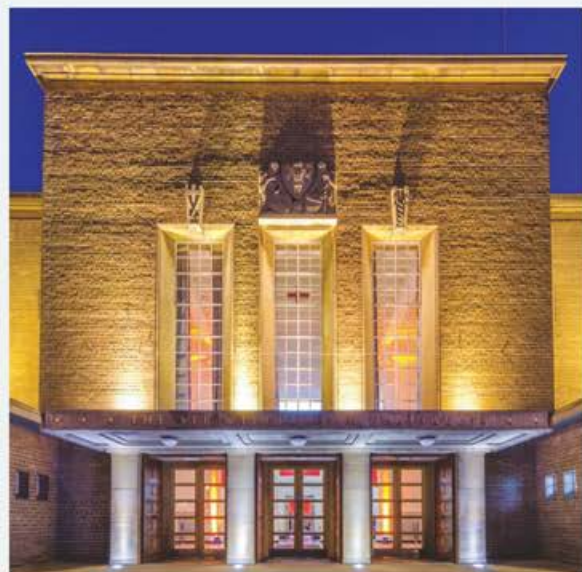
The centre will be used by the public and also by local schools as an extension to their existing teaching facilities. Key features include a new bridge and decking walkway to the new building and activity hall with climbing wall.

The building's features are designed to connect with its location in the country park, with the exterior clad in Siberian larch that weathers over time in order to blend in with the natural surroundings.

To book a place on the visit, email [ecatalano@ciob.org.uk](mailto:ecatalano@ciob.org.uk).

Constructing Reds10's modular units





## Event

## Live graduations in London and Belfast

CIOB ceremonies resume for the first time since 2019

For the first time in two years, the CIOB is hosting graduation events.

London has seen events during October and the next ceremony will take place on 20 November in Belfast.

The graduation ceremony will be an opportunity for attendees and their guests to celebrate their tremendous achievement at gaining Chartered

**Above:** The ceremony will take place at Whitla Hall, Queen's University, Belfast

or Fellow Chartered membership status. Chartered membership sets graduates apart as true professionals in their field; it enhances their careers, boosts the professionalism of their organisation and raises the standards of construction management around the world.

The event will take place at Whitla Hall at Queen's University in Belfast. Graduates booked to date are from organisations including Woodvale Construction, McAleer & Rushe, McLaughlin & Harvey, Henry Brothers, Farrans Construction, Graham, Geda Construction, Department for Infrastructure, Robin Hill Construction, DJ Fealy Construction, Ardmac, Michael Slattery & Associates, Cord Planning & Design, Edward Building Developments, Precision Industrial Services, Global Port Services Scotland, RPS, Mythen Construction, James F McCue, Granite Exchange, Glasgow City Council, and Johnnie Johnson Housing Trust.

Caroline Gumble, chief executive of the CIOB, will be travelling from London to speak at the event.

Public health measures due to Covid-19 will be in place to ensure all attendees safely enjoy the occasion. Limited places are still available. ●

**For further enquiries or to book a place, contact Julie Fitzsimmons, member services and events coordinator. Call +44 (0)1344 630729 or email [JFitzsimmons@ciob.org.uk](mailto:JFitzsimmons@ciob.org.uk).**

## Community

## Tomorrow's Leaders take to the stage

Novus representatives transition to their new Tomorrow's Leaders roles

The CIOB's work to develop and support Tomorrow's Leaders continues and the transition from Novus to CIOB Tomorrow's Leaders has been completed, with the Novus group structure and brand discontinued.

All existing Novus representatives were invited to transition across to new Tomorrow's Leaders roles either as a Tomorrow's Leaders representative, sitting on the hub committee, or as a Tomorrow's Leaders champion.

The CIOB is delighted that most of those invited to take on their new role chose to accept, and have become the founding members of the CIOB Tomorrow's Leaders community.

The development of the Tomorrow's Leaders community is going to be progressive, with Tomorrow's Leaders champions playing an integral role in helping to shape and develop it.

While development of the community continues, Tomorrow's Leaders champions across the globe continue to deliver a wide variety of events and activities aimed at the community and other new entrants to a career in construction. ●

**Further information regarding Tomorrow's Leaders or local events, can be found at [www.ciob.org/tomorrows-leaders](http://www.ciob.org/tomorrows-leaders), or alternatively from Sophie Cox, Tomorrow's Leaders officer, at [scox@ciob.org.uk](mailto:scox@ciob.org.uk).**

## Event

## Save the date for student festival

Event on 9-10 March offers career guidance to global student community

The second ever CIOB Student Festival is planned for 9 and 10 March 2022, to coincide with National Careers Week.

The festival brings together the global student community in an event that offers insight from industry and academic leaders.

Students will hear of personal reflection, industry

best practice and future career guidance.

By participating in the two-day event, student members can expect to build upon their competence, confidence and knowledge of the built environment sector, developing skills, sector know-hows, and top tips.



## Webinar

# Demolition project razes interest

Get a glimpse behind the scenes of the redevelopment of a Nottingham landmark

Despite the site's complicated history, there's no doubt that the redevelopment of the Broadmarsh Shopping Centre is on the lips of every Nottingham resident.

With plans for the disused site due to be released imminently, Willmott Dixon is working with Nottingham City Council on the demolition phase.

The Nottingham Hub has organised a virtual site visit, courtesy of Willmott Dixon, to view the demolition phase of this landmark building. The visit will take place on 1 December at 12pm.

As a closed site, this offers a unique opportunity to take a glance behind the hoardings, with exclusive insights into the project.

Willmott Dixon's Broadmarsh Shopping Centre site in the centre of Nottingham

Although only partially complete, the site has already provided the Willmott Dixon team with challenges ranging from the building's stability, logistics and even uncovering historical artefacts.

During the course of the webinar, you will hear from the project team managing the demolition – with exclusive video footage and a site tour from Willmott Dixon's operations manager, Paul Smith.

Following the site tour, which will showcase the digital technology and demolition techniques used by the contractor, the webinar will also feature a Q&A section for questions about the technicalities and challenges faced on site. ●

To register for this event please book at <https://events.ciob.org> or email [gffloyd@ciob.org.uk](mailto:gffloyd@ciob.org.uk).

## MEMBERS' FORUM SET FOR NOVEMBER

For the first time this year, and in response to demand from members, the CIOB is running a second Members' Forum, to be held on 2 and 3 November.

Delegates have had their invitations and plans to provide some interesting and engaging sessions are well underway.

Sustainability and innovation will be the key topics, along with an update on the CIOB's governance review.

The meeting will be held virtually – more information can be found at: [membersforum.ciob.org](https://membersforum.ciob.org).

## Training

# Academy for veterans seeks industry support

New future for ex-services

CIOB members are being asked to support an initiative from a retired construction company owner.

Malcolm Whitehead is endeavouring to establish the Forces Remap Training Academy to deliver a national veterans training programme that supports vulnerable and homeless veterans from the UK Armed Services. This will be achieved by training and provision of equipment to manufacture the components for a complete timber house.

He needs one more trustee to enable the initiative to obtain a registered charity number so it can start to raise approximately £3m to build and equip the academy. He is also seeking patrons and ambassadors for the charity once it is set up.

Whitehead came up with the idea when brain aneurysm surgery forced him to stop work.

"The lasting effects of the brain aneurysm are that I have to rely on crutches to walk, and on bad days I am in a wheelchair. I physically cannot do the things I loved to do, now I find it almost impossible to swing a hammer. I decided that the situation I was left in should not force me to put all of my training to waste, I could still instruct people on how to do things and produce something practical and more importantly required," he said.

"There are so many homeless veterans that need help and there is a national skill shortage to be resolved; the academy would be in an excellent position to help in a small way of addressing both of those problems." If you are interested in the trustee position, or wish to offer support, contact Malcolm Whitehead at [forcesremapacademy@outlook.com](mailto:forcesremapacademy@outlook.com).

Veterans will be trained to build homes



## Fundraising

# Members offer pro bono charity work to save ailing sea cadets

Beleaguered youth charity seeks support and funding to salvage unique premises



Two members have come to the rescue of a charitable project that has suffered repeated construction setbacks. Daniel Samson MCIOB, a Bristol Hub committee member and senior project manager at Mace, along with David Farage, an associate member who is senior partner with BMD Architects, have stepped in to help the ailing Sunbury and Walton Sea Cadets.

The self-funding charity, run by local volunteers, has an 80-year history of helping young disadvantaged people gain confidence, skills, success and have fun from its riverbank centre.

One of the key volunteers is William (Bill) Spray, a master builder who joined as a trustee when he retired from running his own domestic and commercial construction business.

Sunbury and Walton Sea Cadets' proposed HQ

A 2013 premises review highlighted that the rundown, single-skinned, prefabricated, cold and damp building was increasingly difficult to maintain, too small and not fit for purpose.

The site location is rare, with excellent direct access to the Thames, so the charity set about raising funds to rebuild next to the old HQ (to be converted into a boat shed in the future).

However in February 2014 devastating Thames flooding (the first since 1947) forced closure for four months and it took six years before the small team of volunteers was able to raise sufficient funds for the build contract, professional fees and design.

What followed was a litany of contractor disasters – two went into liquidation and a third project manager left. By October 2020 the charity was onto its third builder and progress had been painfully slow.

The current situation is to get to dry with frame, roof, windows and cladding installed. “We simply do not have enough funds and are out of options without additional funding,”

“Our young people are squeezed into a small training area in a substandard building along with all our training equipment”

Gail Cramp, Sunbury and Walton Sea Cadets

says Gail Cramp, chair of Sunbury and Walton Sea Cadets.

“Getting to dry is critical or we risk damage when riverbank conditions deteriorate in November. In the meantime, our young people are squeezed into a small training area in a substandard building along with all our training equipment.”

Farage is assisting Matt Letty, a partner with BMD, which has been supporting the Sea Cadets since the removal of the first contractor in 2018.

Mace has also stepped in with pro bono project management and will approach its supply chain as part of a drive to encourage donation of materials and labour.

“BMD has been an absolute shining light for us,” says Cramp. “Their support has been inspirational. We are immensely thankful for their help through the highs and lows of the build.”

**The charity is still seeking funding and/or expertise. Anyone willing to help should contact Gail Cramp, chair, at [sunburyandwaltonseacadets@gmail.com](mailto:sunburyandwaltonseacadets@gmail.com).**

## Training partner

## Consultancy firm supports five staff on MCIOB journey

Kent Construction Consultants invests in its employees

Kent Construction Consultants, a CIOB training partner, is supporting five of its employees to acquire chartered status.

Manraj Bhuhi, James McGuire, Adam Cordrey, James Inglis and Lee Coombes will all be supported on their journey to MCIOB.

“Investing in our employees and allowing individuals to flourish only improves the quality of professionals within our industry,” says managing director Charles Kenward.

The business offers chartered surveyor, project management and construction management consultancy services.

Me and my project

## Kent's Tomorrow's Leaders race around the track

BAM claims victory at Maidstone Karting Cup

With 14 teams vying for the honour to be crowned the 2021 champions, everyone had a fantastic evening at the Tomorrow's Leaders Maidstone Karting Cup at the Bayford Meadows Kart Circuit, Sittingbourne.

Teams from construction-based companies across Kent came together on 23 September for this annual 90-minute endurance competition, now in its ninth year, with the grit and determination to win the coveted cup along with the accolade of achieving the 'fastest lap' trophy.

From starter's orders it was apparent that the competition was fierce, with everyone initially vying for the top spot – but very soon it became clear that the teams to beat were from BAM, CA Drillers, Willmott Dixon, Invvu, Teampol (event sponsor), WW Martin and London and South East Building Control (LASEBC).

Drama then ensued with LASEBC suffering a puncture, losing at least two laps, which unfortunately they didn't manage to come back from despite some superb driving.

The final three laps proved to be the deciding ones with BAM team 1 and CA Drillers team 2 fighting it out – with BAM eventually the victors by 13 seconds. Third place went to the team from Willmott Dixon.

The fastest lap trophy went to BAM team member Michael Reader.

The race wasn't just about the fastest laps and proficient driving skills though. There were some spectacular crashes this year and the winner of the worst crash went a Perfect Homes team member who managed to completely demolish the tyre barriers on one of the chicanes.

The slowest lap honour went to one of the RIFT team who managed to take 2.30 minutes to navigate the track on one of his rounds – at least 1.5 minutes slower than the fastest lap.

A special mention and thanks go to event sponsor Teampol, which has kindly sponsored the event for the past five years.

This was the Maidstone Tomorrow's Leaders' (TL) inaugural event and hopefully paves the way for many more successful and fun events in the future. TL Hub representative James Sargeant, and TL champions Lindsey Platt, Reagan Williams and Joanna Johnson would welcome anyone who is interested in joining the TL community. ●

**For further information contact Maidstone MSEC Beverley Lawrence [blawrence@ciob.org.uk](mailto:blawrence@ciob.org.uk).**



One to watch

## Tom Debono MCIQB

Assistant project manager,  
Dubai Office, Turner & Townsend



**Why did you choose construction as a career? What else might you have done instead?**

Good question. I studied politics and history at college, however quickly realised that, aside from not being my 'forte', I felt the subjects didn't provide a clear career direction.

A lot of my close childhood friends left school and pursued vocational courses to become electricians and joiners. I saw them enjoy working on site, earning a good wage (and finishing early on a Friday...).

As such I decided to complete a course in real estate management and quickly developed a keen interest in property and construction. I then completed a construction management honours degree at Liverpool John Moores University and I haven't looked back since.

I'd encourage anyone who is unsure of a career path to consider construction. If you are creative you can pursue a career in design. If you are good with numbers, look at being a quantity surveyor. If you have good leadership skills and can proactively overcome challenges then you might have the makings of a strong project manager.

**You're working in Dubai. How did that come about and how is it going?**

I actually visited Dubai for a wedding back in 2019. One of my close friends

was working with Turner & Townsend in Dubai and had regularly encouraged me to join him. He managed to set me up with an interview during my holiday and luckily it went well, which is surprising as the wedding was the day before.

Previously, in between my studies, I'd experienced working abroad in Ibiza, which definitely gave me a taste for a warmer climate. Dubai seemed like a great opportunity to gain unique experience and earn a competitive salary.

I now work within Turner & Townsend's Corporate Real Estate team in Dubai, delivering office fit-out projects for a wide variety of clients including some well-known tech giants, financial institutions and law firms. It's very fast paced, but really interesting, with no two days the same. Most of the offices we build contain facilities you would expect to see in a five-star hotel. It's safe to say that the DNA of the corporate occupier is evolving in the region.

**What are your career ambitions?**

My career ambitions have evolved as my career has. I started my career with a small turn-key property developer which gave me an appetite to build my own developments in the future. I then joined a boutique PMC consultancy which gave me the appetite to one day own my own practice.

More recently, working for a large multinational, I have aspirations to become a partner with Turner & Townsend and develop my experience across a multitude of sectors. I would say that my goals will no doubt change and evolve again but I am sure they will remain ambitious!



# Partnership

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- **Powerproject Vision:** For one point of truth at all times, your company can store data in the cloud via Powerproject Vision, for complete transparency, integrity and control over every construction project. Connect teams to the latest updates and clearly track revision history, to keep everyone on the same page and make effective strategic decisions.

Powerproject Collaboration Cloud delivers all the benefits of Elecosoft's flagship Powerproject software and more. If you're already using Powerproject or another piece of Elecosoft technology, you can upgrade to Powerproject Collaboration Cloud for the complete collection.

**"Instant communication means that challenges and setbacks can be solved quickly, to keep projects running on time and within budget"**

## Who is Powerproject Collaboration Cloud for?

Whether you have three construction planners or 20, Powerproject Collaboration Cloud is an efficient way to streamline your project operations and foster close communication between colleagues and contractors.

It's particularly useful for SMEs and scale-ups, as it gives your company access to features and benefits typically only available to larger enterprises.

Plus, as all your project data is stored in a centralised database, your company has accurate information at your fingertips to confidently track key metrics and keep tight control over schedules and budgets, while delivering high quality outcomes.

## How can I access Powerproject Collaboration Cloud?

One of the major benefits of Powerproject Collaboration Cloud is its simplicity.

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**To find out more about Powerproject Collaboration Cloud subscription packages visit <https://elecosoft.com/collaboration> or contact the Elecosoft team on 01844 261700 or email [powerproject@elecosoft.com](mailto:powerproject@elecosoft.com).**

## Power to the project

Elecosoft launches Powerproject Collaboration Cloud to run smart, profitable construction projects

**Great construction work should never be held up by poor project management.** To help companies deliver more projects on schedule, within budget and stress-free, Elecosoft has launched Powerproject Collaboration Cloud – a collection of market-leading software in one monthly subscription.

Powerproject Collaboration Cloud empowers construction companies to plan, track and manage projects in one place, collaborating closely with team members to deliver strong results.

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**Above:** Users can share information anytime, anywhere – whether in the office or on site



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## Diary dates

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

### Digital Twins and Their Power to Address Current Industry Challenges

**10 November, 6-8.30 pm, Oxford**  
Rômulo Simionatto, associate director at BIM Technologies, will give a presentation which explores digital twins. This will cover:

- What is a digital twin?
- Context applied to other industries and AECO
- Challenges faced by the industry: Building Safety Bill, carbon targets, evidence-based decision-making
- Proof of the pudding: examples of how digital twins are solving the challenges highlighted above
- A live demo of digital twin platform Twinview.

Contact: [Ecatalano@ciob.org.uk](mailto:Ecatalano@ciob.org.uk)

### North West Annual Dinner 2021

**12 November, 7-11.45pm, Newton-le-Willows**  
The CIOB in the North West would love you to join us for our 2021 Annual

Dinner at Haydock Racecourse.

- VIP guests: CIOB president Mike Foy and CEO Caroline Gumble
- Entertainment by Live Lounge Duo Danny Lee and Gary Kirk.

Contact **Katrina Percival:**

[kpercival@ciob.org.uk](mailto:kpercival@ciob.org.uk)

Tel: 01344 630868/07827 803809

to book your tickets and for details on sponsorship opportunities.

### The CIOB at London Build 2021

**17-18 November, London**

This year the CIOB will be joining London Build 2021 to help promote the organisation and all that the industry has to offer.

We will be running two speaker presentations throughout the event, as well as running our monthly Hub in the Pub from London Build.

We will also have regional staff and hub committee members on hand at our events to chat about the CIOB and what we've been getting up to locally.

So join us for a great event focusing on the built environment.

The CIOB event schedule is:

● Wednesday 17 November:

4pm-5.30pm, Hub in the Pub (London Bar area)

● Thursday 18 November:

2pm, Legal CPD (Main Stage)

● Thursday 18 November:

3pm, Business CPD (Main Stage).

Contact: [bgrange@ciob.org.uk](mailto:bgrange@ciob.org.uk)

### Net Zero: A View From All Sides

**18 November 6-9pm, Solihull**

In this unique, face-to-face event we are bringing together experts representing the government (housing minister Eddie Hughes MP), the designer (Cundall) and the main contractor (Lendlease) to look at how net zero can be delivered across Midlands schemes.

See Community, p50, for more details.

### CIOB Annual Dinner 2021 & Construction Manager of Year Awards Hong Kong 2020

**26 November, 6-11pm, Hong Kong**

Organised by the CIOB (HK) and held at the New World Millennium Hong Kong Hotel, Tsim Sha Tsui, the awards ceremony is a biennial event that allows the construction professions to recognise the highest standards of construction management.

The awards commend the winning managers for their distinguished individual management achievements, as well as for the outstanding performance of their construction projects.

### Norwich Castle Site Visit

**15 December, 3.30-6pm, Norwich**

Following its initial virtual CPD event with live Q&A, Morgan Sindall is now hosting the first site tour of the construction site and work in progress at Norwich Castle.

On the agenda is an insight into the castle's history and an understanding of the monument and Grade I-listed castle with a presentation from Dr Tim Pestell FSA, curator of archaeology for Norfolk Museum Services. Numbers are strictly limited to a maximum of 40 guests.

Contact: [Lthompson@ciob.org.uk](mailto:Lthompson@ciob.org.uk)

### Werrington Grade Separation Rail Project

**1 December 6-7pm, virtual**

Join the CIOB and Chartered Institution of Civil Engineering Surveyors (CICES) in welcoming Matt Hadden, senior project manager, Morgan Sindall Infrastructure, for a dive into the Werrington Grade Separation project and the challenges faced in the construction of delivering the UK's first ever curved 'jacked box' portal to increase capacity of the rail network.

This project aims to increase capacity in the area north of Peterborough station, and deliver a new 'dive-under' track to provide an alternative route for freight trains, meaning they no longer need to cross the East Coast Main Line.

Contact: [hhosking@ciob.org.uk](mailto:hhosking@ciob.org.uk)

For a full list of events and to register visit [events.ciob.org](https://events.ciob.org).



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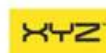
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