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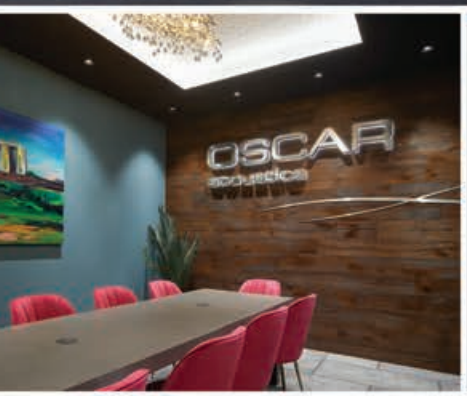

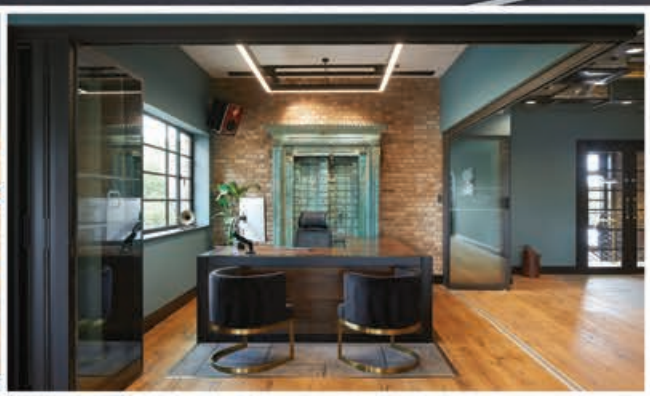

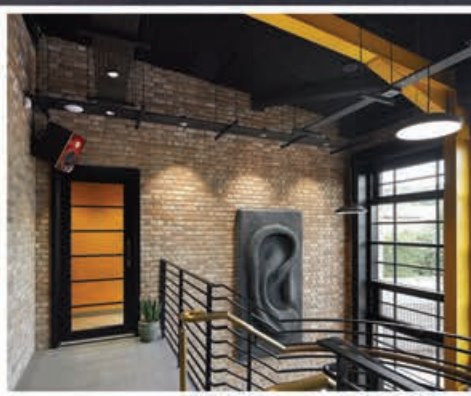

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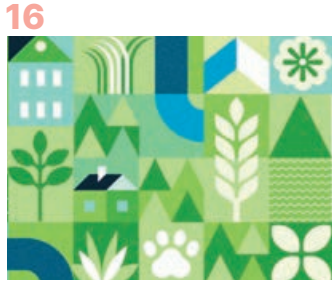
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HEATHROW AIRPORT LTD

Noiseproofing Heathrow's homes

Heathrow Airport has appointed Kier's FM arm, Kier Places, to install noise insulation measures in about 20,000 homes around the airport's residential areas. The project is part of an eight-year programme to reduce the noise impact generated by aircraft traffic.

World's first floating wind farm maintenance

Maintenance work is underway on the world's first floating wind farm, the 30MW Hywind Scotland pilot park. The bearings of the five floating wind turbines are being replaced in the port of Wergeland, Norway, using cranes supplied by Sarens. After the replacement, all units will be reconnected to the Hywind Scotland site.

Matt Adams MCIOB shows *CM* around Willmott Dixon's new net zero in operation project overlooking London's Tower Bridge (see p32-36)

Showcasing modular construction

A low-energy, zero-carbon three-bedroom house was built on Liverpool's waterfront using MMC to launch a major initiative by Liverpool City Region. The Future Homes LCR plan aims to make the metropolitan area the UK's centre of excellence for offsite construction of new homes.

Lord's roof clean-up

Rope access specialists from CAN have cleaned the 20m high canopy roof at Lord's Cricket Ground in north-west London as part of routine maintenance of the structure. The team used specialist industrial rope access techniques and advanced rescue plans to carry out the job safely.

Sunderland's newest landmark

VolkerStevin has lifted into place and installed the first two steel sections – spanning 83m – of the New Wear Footbridge. The £31m structure will connect the Sheepfolds area of the city with Keel Square in the city centre.

Birmingham's 'Hidden Heroes'

A new 50m-long section of hoardings around HS2's Curzon Street Station site displays LoveBrum's 'Hidden Heroes' campaign, which profiles small charities tackling issues affecting communities in the city.

NICK@NICKROBINSONPHOTO.COM

‘Never again’: CIOB reacts to Grenfell report publication

The institute has welcomed the final report of the seven-year-long inquiry led by Sir Martin Moore-Bick

CIOB’s chief executive has called on the built environment to take “every step possible” to ensure that another Grenfell tragedy “can never happen again”.

Caroline Gumble said: “We very much welcome the publication of the final report into the Grenfell Tower fire and will be reading it in detail to understand the implications for the construction sector in the UK. Improving the safety of buildings must be a priority. Although some progress has been made with the introduction of the Building Safety Act and changes to the Fire Safety Act, there is still much to do.”

The Grenfell inquiry published on 4 September its second and final report into the circumstances that led to the fire which killed 72 people on 14 June 2017.

It found that all the deaths were avoidable and concluded that the disaster “was the culmination of decades of failure by central government and other bodies in positions of responsibility in the construction industry”.

The 1,700-page document put forward 59 recommendations which place new responsibilities on people and organisations. These include establishing an independent construction regulator and a licensing scheme for contractors on higher-risk buildings.

Gumble added: “We are committed to working with others across the industry to follow up on the recommendations made in the report. Every step possible must be taken to ensure such a tragedy, which has impacted the lives of so many people, can never happen again.”

> **We are committed to working with others across the industry to follow up on the recommendations made in the report. Every step possible must be taken to ensure such a tragedy can never happen again**
> **Caroline Gumble, CIOB**

‘Limited’ candidates for new chief construction adviser role

Former UK chief construction adviser Paul Morrell (left) said the pool of candidates fit for the new chief construction adviser role recommended by the Grenfell Inquiry is “very limited”.

One of the recommendations of the final report calls on the government to appoint a chief construction adviser with enough budget and staff to provide advice “on all matters affecting the industry”.

Morrell, who was the government’s first chief construction adviser between 2009 and 2012, told *CM* that although there is no lack of qualified contenders in the industry with the required knowledge and leadership skills, their commercial interests could be problematic.

He said: “Few of those will be able to rid themselves of any commercial relationships during their period of tenure, which I did (and would) regard as entirely necessary for the avoidance of actual or perceived conflicts of interest. And those used to the ‘make it so’ style of leadership in some organisations in the private sector will struggle to settle in.”

Care home fire safety reforms get cautious welcome from campaigners

Changes to regulations mean sprinklers must now be included in new buildings but not existing care homes. By **Will Mann** and **Cristina Lago**

A CIOB fellow who called for reform of care home fire regulations has welcomed a rule change that requires sprinklers to be fitted in new-build developments – but says the campaign is not over.

Steven Miles and his wife Claire, whose mother died in a care home fire in 2017, argued that care homes should be classified as 'higher-risk buildings' under the Building Safety Act and that sprinklers should be mandatory. They lobbied the government following the tragedy at Newgrange Care Home in Hertfordshire, where two residents died in the fire, supported by CIOB.

Ministers responded by publishing a consultation in 2022 to amend Approved Document B of the building regulations. After reviewing the responses, the government announced last month that sprinklers will now become mandatory in all new care homes in England irrespective of height from 2 March 2025.

New care homes will also be expected to limit compartment sizes to 10 beds while ensuring self-closing devices are fitted to doors.

"This is a positive change, which we welcome," said Steven and Claire Miles in a statement. "But our campaign is for sprinkler systems to be installed in all care homes – including existing developments – and for all care homes to be classified as 'higher-risk buildings', regardless of height. This campaign will continue."

> **We will continue to support Steven and Claire Miles in their campaign aims**
> **Eddie Tuttle, CIOB**

▶ CIOB backed the campaign led by fellow Steven Miles and his wife Claire

They highlighted a comment from Grenfell Inquiry chair Sir Martin Moore-Bick that the definition of a higher-risk building in the Building Safety Act focused on height, rather than the presence of vulnerable people, and that this should be "reviewed".

The Mileses told *CM* that they recently met with their new MP for Harlow, Chris Vince, who is supporting their goals, as did his predecessor Robert Halfon.

CIOB has also backed the Mileses' campaign, writing to then communities secretary Michael Gove about fire safety rules for care homes.

"The regulations changes on sprinklers in new care homes is very welcome news, but we will continue to support Steven and Claire Miles in their campaign aims," said Eddie Tuttle, CIOB director of policy, research and public affairs.

Building safety minister Rushanara Ali said: "Many care home providers already include sprinklers in new designs. For those that do not yet provide for sprinklers, again, I recognise that businesses and investors seek certainty.

"So, care home owners and developers will benefit from a six-month transition period until the guidance comes into effect and will then have a further six months to enable work on current development projects that are underway, or about to start, to continue."


Consultation on care home sprinklers opens, after CIOB member campaign

How credit availability affects tender prices

Observing financial risk indicators can help construction prepare for uncertainty in tender price inflation, writes **Barrett Harris**

How do you measure the impact of the unpredictable? This is the question every business is faced with when trying to price risk into their financial models. For construction, it's a key driver for inflation in tender pricing as contractors seek to protect themselves from market uncertainty.

One of the main ways financial risk manifests itself for construction is in credit availability. The Covid pandemic, followed by Russia's invasion of Ukraine, has significantly affected borrowing costs and the lending criteria of banks. These events have led to cashflow issues and insolvencies, threatening ongoing projects and reducing the likelihood of firms taking on new work.

The Bank of England Agents' scores (top graph) assess credit availability and are based on conversations with businesses. The score for each variable ranges from +5 to -5 points. Negative scores indicate tightening credit, while positive scores suggest improvement. Following the Covid pandemic, these scores reached lows of -2.8 and -1.6 points for medium and large companies, and the outbreak of the Ukraine conflict pushed them lower still.

Despite a modest recovery since, scores remain negative, indicating a continued tightening of credit. As of Q3 2024, small, medium and large businesses scored -2.0, -1.5 and -1.0 respectively.

Understanding funding constraints and their impact can provide valuable insight into future fluctuations in tender price inflation.

Percentage of TPI variation that can be explained by changes in investment

80

Understanding funding constraints and their impact can provide valuable insight into future fluctuations in tender price inflation

Investment relationship

The availability of credit significantly influences investment levels in the industry, as limited access to funds constrains the ability to commit to new projects. This was evident during the Covid pandemic, when credit availability scores for medium and large companies fell to historic lows.

Construction investment saw a quarter-on-quarter decline of 17.8% in Q2 2020. This downturn led to two consecutive quarters of contraction in the Building Cost Information Service (BCIS) All-in Tender Price Index (TPI).

Investment and TPI have a positive relationship. High investment levels often signal that firms perceive the environment as stable and are more optimistic about investing capital, which in turn drives up TPI. Conversely, tender prices decline when investment levels drop.

Capital expenditure and tender price inflation are highly and positively correlated. The bottom graph shows how an increase in the index of investment (base Q1 2010=100) explains more than 80% (R^2=0.812) of the variance in the BCIS tender prices index (base Q1 2010=100).

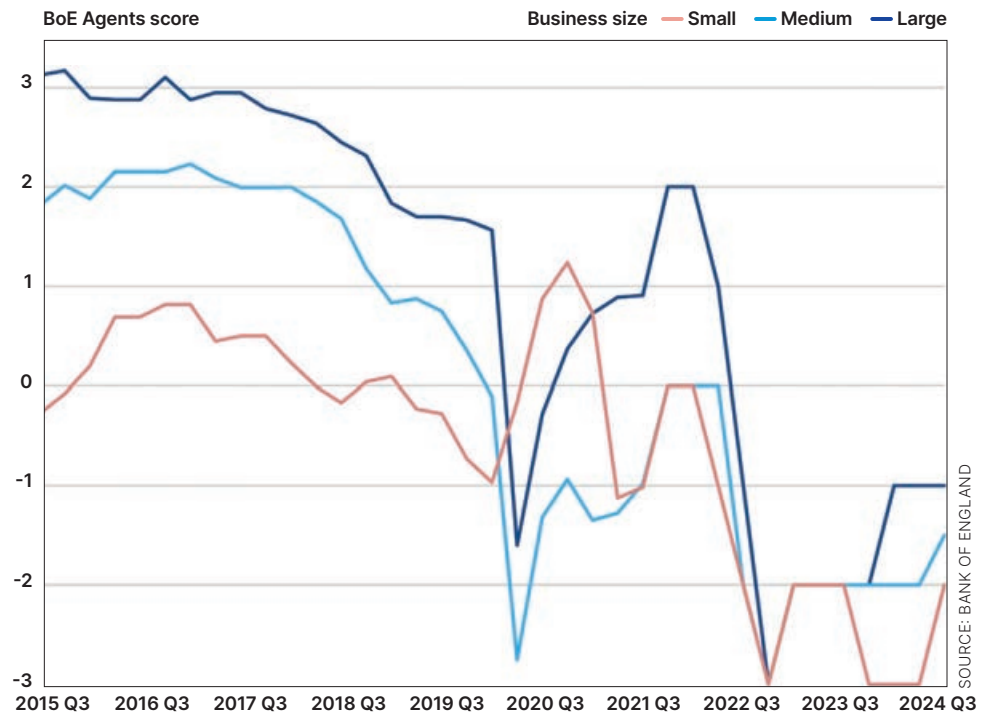
By closely monitoring financial risk indicators and enhancing financial resilience through robust cashflow management and securing diverse funding sources, industry stakeholders can better anticipate and manage fluctuations in tender price inflation.

Stable pricing might seem appealing, but not if it is born out of low investment to counteract low availability of credit.

Barrett Harris is an economist at Turner & Townsend.

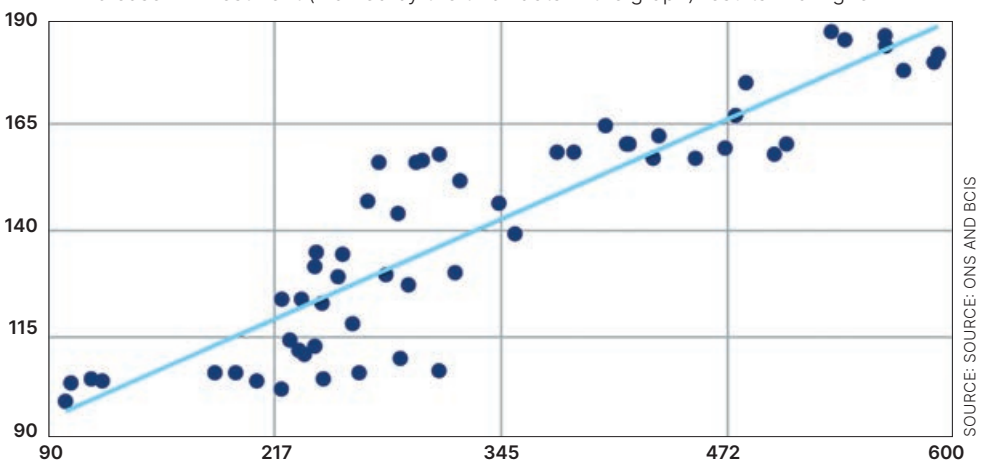
Credit availability plunged following Ukraine's invasion

Scores for companies given by the Bank of England Agents, who assess credit availability based on conversations with businesses



Correlation between investment and TPI

An increase in investment (marked by the thick dots in the graph) results in a higher TPI



Caroline Gumble
CIOB

The time is up: construction must pass the 'climate test'

Caroline Gumble reflects on the challenges of delivering a sustainable built environment

I am writing this after our first-ever Net Zero Built Environment conference, hosted by CIOB head of environmental sustainability Amanda Williams, which I found incredibly inspiring.

In a pleasing coincidence, the event date was Amanda's anniversary with CIOB – we've now had a head of environmental sustainability in post for a year and have been able to accelerate our work to drive a more sustainable built environment. This was also the headline for our event: accelerating towards a net zero built environment.

We were fortunate to have an excellent, international line-up of speakers, including our president Mike Kagioglou FCIOB and our vice president Saul Humphrey FCIOB (winner of this year's CIOB Sustainability Award).

There was a lot of great content during the day but Mike Kagioglou's opening remarks had the biggest impact on me. As readers probably know, Mike has put the UN Sustainability Development Goals (SDGs) "at the heart" of his presidential year and, from the start of his talk, injected a note of urgency, saying that everything we do must now pass the "climate test" and contribute to a net zero built environment.

Mike's sign-off was a call to use the SDGs to drive the culture change that we need to see across the industry

He gave a powerful reminder that the challenges in delivering on the SDGs are significant, but also that safety, progress as a society, health and wellbeing, diversity – and much more – are all inextricably linked.

Understanding this and the impact of all that we do is key to moving forward at pace to create a more sustainable built environment.

Mike went on to issue some calls to action, which are worth sharing, and linked them to the CIOB theme of working as a modern professional: modern professionalism is about challenging "siloed ways" of working; we must challenge the traditional routes into professionalism and the old ways of attracting and developing talent; and we must, of course, also challenge old techniques for putting together a building.

Mike's sign-off was the headline challenge, though, with a call to use the SDGs to drive the culture change that we need to see across the industry and to think about what more each of us can do.

I want to thank all the fantastic speakers we had, as they contributed to a really engaging event on an important issue. Plus I can confirm that we already have plans to run this as an annual event – so watch this space for news from Amanda about next year's sustainability conference.

Caroline Gumble is chief executive of CIOB.

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Feedback

A selection of readers' comments about news and issues in the industry from across the CIOB community and social media

Birmingham is undergoing a mammoth city-centre regeneration project, which includes major projects like HS2

CM

Building Brum: experts ponder impact of urban development

CIOB and Building Brum brought together construction leaders and industry stakeholders to explore the opportunities and challenges of Birmingham's regeneration projects.

Roger Greasley MCIOB

I came into the industry exactly 60 years ago as an articled pupil with John Laing & Son based in the Birmingham Regional Office.

The Bull Ring Centre was just about complete, the Maternity Hospital and no less than four large university halls of residence were well underway when I joined. I did work on all of them – much of it administering the famous John Laing cost and bonus system.

The government of the day was intent on delivering their promised 300,000 homes per year and we (Laings) were at the forefront with system-built high-rise apartments, known as Jespersen – remember them?

Over the five years of my indentures, I spent my academic terms at Brixton School of Building and my 'practical training' on sites throughout the Midland region centred in Brum: Shrewsbury Shopping Centre, Denman Street residences in Nottingham, Doncaster Racecourse Grandstand and the Rolls-Royce RB211 engine factory.

Good old Brum, still building after all these years!

> I do hope that the whole industry will come together and stop treating not-for-profits as 'nice to haves'
> **Alison Watson MBE**

CIOB People

Why the Women into Construction closure reflects badly on the industry

Professor of employment relations at Queen Mary University of London Tessa Wright reflected on the closure of WiC after 16 years of supporting women accessing construction.

Alison Watson MBE

Tessa, I had the news with the same disappointment. It's always so hard to convince the same organisations who 'champion' the sector and at the same time complain they can't recruit to part with an investment that secures future talent.

There are some really good organisations out there, doing some good work, but it's still often down to the 'commit if we win the bid' or 'it's what we've always done' approach. The question is always 'what's the cost?' instead of 'what's the value?'

A good friend of mine who works at the top level in social value (where the funding for such 'initiatives' usually lies) once commented that HR and corporate social responsibility never talk to each other. I find this staggering. Access to home-grown talent should be an absolute priority. WiC and our own organisation [Class of Your Own] provide an exciting funnel directly into the most in-demand vacancies. Want apprentices? Sign up. Want more women? Sign up. Want more respect? Sign up. Want to change perceptions? Sign up. Want to stop spending money on the same reports year on year that tell us what we already know? Sign up.

I do hope that the whole industry – driven by the great leaders – will come together and stop treating NFPs (not-for-profits) as 'nice to haves'. We provide a critical service to the seriously depleted construction workforce.

Julie Newman

I was part of the inclusion consultations leading up to 2012 and was pleased that there was positive support and recruitment for women to be part of the construction contracts. The formation of WiC and the ongoing work was part of what turned out to be a very limited legacy. I am deeply saddened and disappointed that this groundbreaking organisation is having to close. Tessa makes an excellent point when citing the potential support from within the industry, but also surely the new government should find a way to encourage this?

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DASSAULT SYSTEMES

Saul Humphrey
CIOB

Why sustainable construction makes commercial sense

CIOB vice president **Saul Humphrey** argues that the climate challenges facing the built environment are a great opportunity for the industry

▲ Truly sustainable buildings can attract premium brand value

The earth has just recorded the 13th hottest month on record as warming oceans and climate change challenges persist – but I write in a spirit of optimism, not despair as there is now a real opportunity for construction to stop being part of the problem and instead become part of the solution.

We know that, globally, the built environment is responsible for circa 39% of greenhouse gas emissions. The problem is not just operational CO_2 caused by heating and cooling poorly insulated buildings, but also embodied carbon caused by the extraction and production of the construction materials. If cement were a country, it would be the third biggest CO_2 emitter in the world; if steel were a country, it would be fifth.

The negative impact of the sector on biodiversity loss, water usage and extraction of resources also pushes the planet beyond its finite boundaries and risks initiating tipping points and irreversible feedback loops.

But construction can become part of the solution. We can all immediately shift from degenerative and exploitive growth towards more sustainable development. This can also align with a commercial benefit, with truly sustainable buildings attracting known asset value enhancements, energy cost savings and premium brand value.

This is not hard to do. By way of example, my own modest sustainable project management consultancy has saved 82,000 tonnes of CO_2 by aligning every project to the UN Sustainable Development Goals, optimising sustainable value, and targeting the highest standards of sustainable solution including BREEAM accreditation, Passivhaus or Future Homes Standard.

> **The World Green Building Council reported that BREEAM certification can increase rental rates for buildings by up to 24.9% compared to conventional, code-compliant buildings**

The CO_2 saving is calculated by contrasting the solution adopted against what would have otherwise been a building regulations compliant build. That saving in carbon is the equivalent to building over 1,600 homes for free. The carbon saving is enormous, but so are the broader environmental benefits.

Perhaps critically, the commercial benefit also reflects this paradigm shift. The same projects that can boast a saving of 82,000 tonnes of carbon can also promote a net added commercial value of £44m against peer-reviewed benchmarks.

The value of a BREEAM Outstanding office is valued at a premium of between 12.3% and 30% over building regulations compliant stock. The World Green Building Council reported that BREEAM certification can increase rental rates for buildings by up to 24.9% compared to conventional, code-compliant buildings.

Greta Thunberg, the environmental activist, said: "We already have all the facts and solutions, all we have to do is to wake up and change." Built environment professionals can address net zero now – by demonstrating the added value of sustainable construction measures to quantify the positive and tangible impacts. ●

Saul Humphrey is a sustainability consultant, professor at Anglia Ruskin University and vice president of CIOB.

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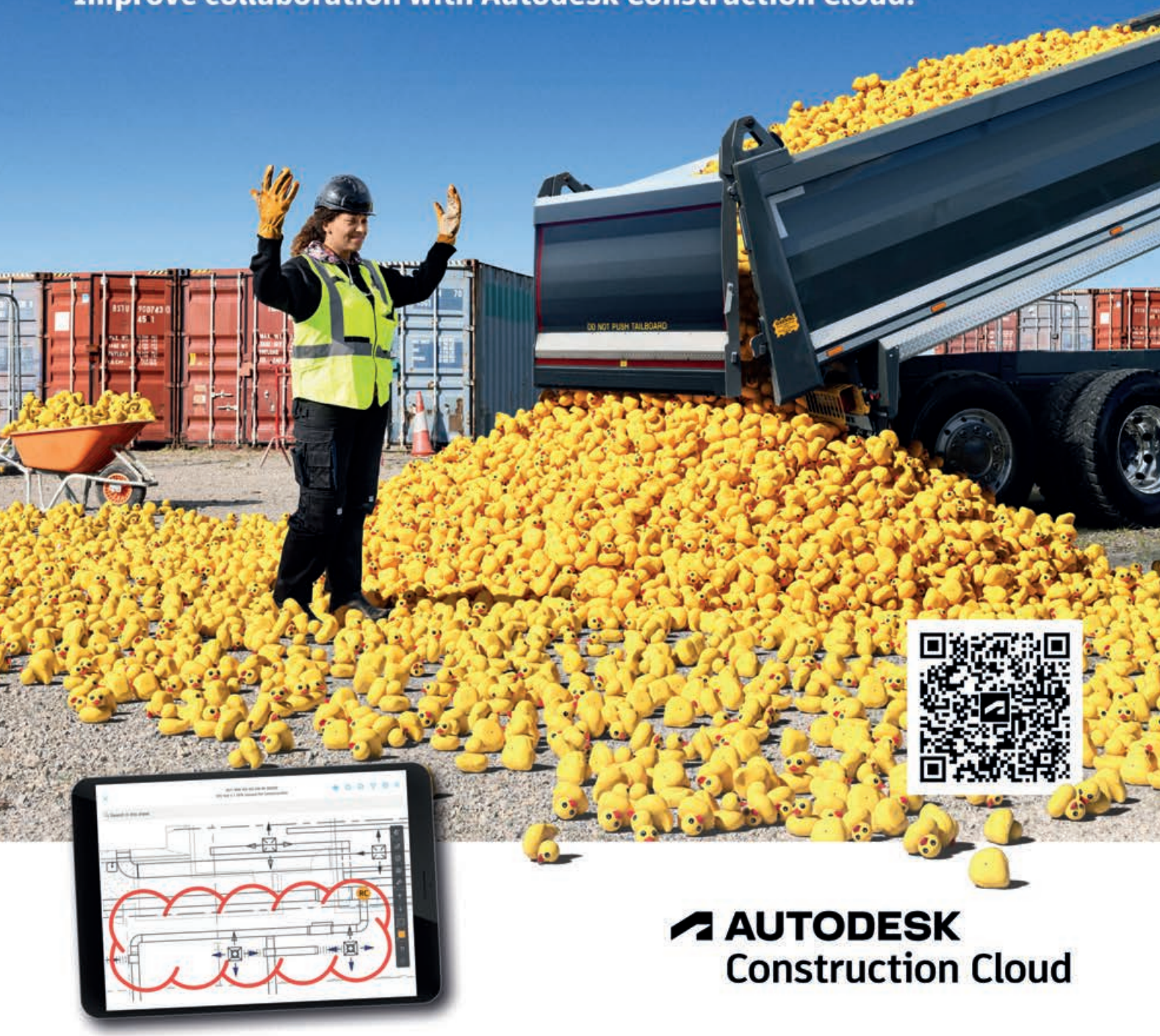

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Jo Stott: 'We're committed to following up to see what benefits are being delivered'

'Let's deliver real benefit for nature'

Major UK housebuilders recently signed the Homes for Nature commitment, meaning new developments will include biodiversity features such as nesting bricks and hedgehog highways as standard. **Will Mann** speaks to Miller Homes' Jo Stott, who has led the working group behind the initiative

Tell us about the Homes for Nature commitment. What are the targets and why have housebuilders been happy to sign up?

The Homes for Nature initiative was developed by the Future Homes Hub's On-Site Nature Measures Working Group, and is a voluntary commitment that housebuilders have made to support two key species that are currently facing loss of traditional habitat – the swift and the hedgehog. In particular, cavity nesting birds have suffered loss of nesting sites due to the improved design for energy efficiency of our homes.

Although these two species have been the focus of the commitment so far, we expect that other species of birds, bats and pollinators will benefit from the scheme, which encourages a wider range of measures for nature to be deployed on site.

All those committed to the scheme have signed up to deliver integrated universal nest bricks at a ratio of one per home and a hedgehog access route or highway on all developments. The commitment applies to all developments going through the planning process from September.

Some housebuilders, including Miller Homes, have been installing measures for nature for several years now, but we all recognise the need to accelerate delivery. It's something we can do right now to help nature while the wider benefits of the biodiversity net gain legislation gradually come to fruition.

What is the technical guidance the On-Site Nature Measures Working Group is working on and what format will that take?
The guidance will ensure that everyone in the sector has a quick access guide that sets out correct installation and location of the measures we're signed up to deliver and more. The measures are relatively simple but there is a bit of detail that our technical, planning, production and sales teams need to know to ensure the success of the project.

We've been fortunate to have input from experts at the RSPB, Action for Swifts, the Bat Conservation Trust and the Hedgehog Street campaign in addition to sector experts at the NHBC and ecologists, planners and designers representing the organisations that have signed up to the scheme.

Critically, the guidance also covers how we expect signatories to report on the measures they've installed so that we can keep track of progress. There is also content on the conversations we need to have with our customers to ensure they are aware of what we're aiming to achieve by installing nest bricks and hedgehog highways. That's also a great opportunity to mention other things that households can do to help nature.

The guidance will be available as a digital document that anyone can access.

From a construction perspective, what are the main technical challenges in creating 'nature-friendly' developments?
Making sure that sites deliver the best outcomes for nature while balancing all the other competing needs means relevant teams getting together at the very beginning of the design. That means getting technical, ecology, design, planning and commercial teams to think about how site design can be more nature-friendly and then keeping that on the agenda as the site design develops.

SuDS design is a great example – there is an obvious technical function and a space impact but there is also potentially a great opportunity for nature. Thinking about levels across the site and how mammals, amphibians and reptiles can move through the site needs to be considered, especially when significant infrastructure is required. Hedgehogs are particularly affected by steep level changes so ensuring suitable routes for hedgehogs needs careful consideration.

▲ Swifts will have new nesting sites

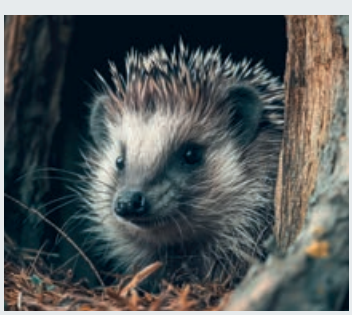
> **It's something we can do right now to help nature while the wider benefits of the biodiversity net gain legislation gradually come to fruition**
> **Jo Stott, Miller Homes**

The commitment's been launched. How will you follow-up with signatories to check they are delivering?
From the outset it has been our priority to ensure that this project delivers real benefit for nature. The commitment itself requires signatories to agree that they will report progress annually to the Future Homes Hub, but also in annual reports and on websites.

We're also committed to following up to see what benefits are being delivered for nature. It can be difficult to survey when homes are occupied but we are confident there will be opportunities to follow up with residents, for example through management companies, and this is something we have started to explore at Miller Homes.

This is crucial because it will take time for nature to find and make use of these measures. Homeowners may move out and new families move in, so we need to have an eye on longevity and enduring communication about our long-term goals.

The project will run for at least five years by which time we hope the measures we are installing will be supporting nature and will have become a standard item which everyone expects to see on all new developments.



Homes for Nature commitment

The Homes for Nature commitment was developed by the Future Homes Hub's On-Site Nature Measures Working Group, chaired by Miller Homes associate environmental sustainability director Jo Stott.

The commitment:

- **will see a nesting brick or box installed for every new home built, and hedgehog highways as standard on every new development;**
- **applies to new developments taken through planning from September 2024;**
- **features 21 participating housebuilders, who build more than 90,000 homes a year;**
- **will run for five years, with annual reporting and reviews to track progress; and**
- **currently applies to low-rise houses, with work underway to identify an appropriate nature positive approach for new apartments and high-rise buildings.**

Organisations such as the RSPB, Action for Swifts, Hedgehog Street and the NHBC are helping to develop guidance.

Eight ideas for boosting biodiversity

Housebuilders and contractors are working to conserve nature and improve biodiversity on sites around the UK. **CM** looks at some of their initiatives

SIMON DEWHURST PHOTO LTD

Keepmoat creates hedgehog highways

Housebuilder Keepmoat, a Homes for Nature signatory, has introduced 'hedgehog highways', a series of 13cm by 13cm holes included in its developments' fences as standard, to help roaming hedgehogs pass through. Reports suggest that in the 1950s there were 30 million hedgehogs in the UK, but there are estimated to be fewer than a million today. Keepmoat is also providing homebuyers with tips on how to create a hedgehog-friendly zone in their gardens.

Crest Nicholson builds bee hotels

Housebuilder Crest Nicholson, which has also signed the Homes for Nature commitment, has constructed 'bee hotels' at several of its developments, including Grange Meadows in Somerset. The hotels, designed by Elmtree Garden Contractors, provide a haven for bees to rest and lay their eggs. The initiative hopes to help reverse bee population decline while providing wider biodiversity benefits through pollination of plants.

Morgan Sindall partners with RSPB

Morgan Sindall has partnered with the Royal Society for the Protection of Birds (RSPB) since 2023, helping fund the purchase of 54ha of farmland to extend the Lakenheath Fen reserve in Norfolk. The land is being turned into wetland and grassland habitats for wildlife including endangered cranes and bitterns. This will also reduce loss of carbon from the peat-rich soil. Morgan Sindall staff take part in volunteering days at the reserve.

Bouygues achieves huge BNG score in Llanelli

Bouygues is delivering a mixed-use development for Carmarthenshire County Council that is predicted to increase biodiversity by 137% on completion. The 34ha Pentre Awel project on the Llanelli coast involved ecology surveys as well as measures to safeguard reptiles, water voles, otters, nesting birds and bats during the works, making sure the habitat is in a better state than before construction started.

Jones Bros relocates coastal wildlife

Civil engineering firm Jones Bros has relocated a habitat of honeycomb reef worm as part of its work on a coastal defence scheme in North Wales. Prior to construction of the beach groyne at Penrhyn Bay, which involved 60,000 tonnes of rock armour, the contractor extracted the worms from under the footprint of the new defence structure and transported them to their new habitat.

Barratt lays swift bricks

Barratt is another housebuilder to sign the Homes for Nature commitment, which will see a bird-nesting brick or box installed for every new home built, such as on its Ladden Garden Village in Yate, Somerset. A minimum of 300,000 nesting bricks and boxes are thought to be required to support swift populations and other bird species across the country. Historically, swifts nested in the nooks and crannies of old buildings, but recently the loss of nesting sites has had a detrimental effect on the species.

MIKE SEWELL

Balfour Beatty plants wildflowers by M25

Balfour Beatty, National Highways' contractor for the M25 junction 10 improvement scheme, is investing £20,000 in a wildflower planting scheme near Ockham in Surrey. The project team is taking seeds from around Bolder Mere lake to grow at the nursery of wetlands specialist Salix in Thetford, before transporting them back to the site to replant, helping to create a space for wildflowers and other wildlife.

Sisk and Speedy Hire invest in peatland restoration

Contractor Sisk and equipment hirer Speedy have invested £10,000 into a biodiversity project to help reduce carbon emissions in England's largest bog. Staff from both firms helped with the planting of 10,000 sq m of cotton grass plants in the North Pennines, which will help sequester carbon. Sisk and Speedy worked with North Pennines National Landscape on the peatland restoration project, which supports the companies' sustainability targets.

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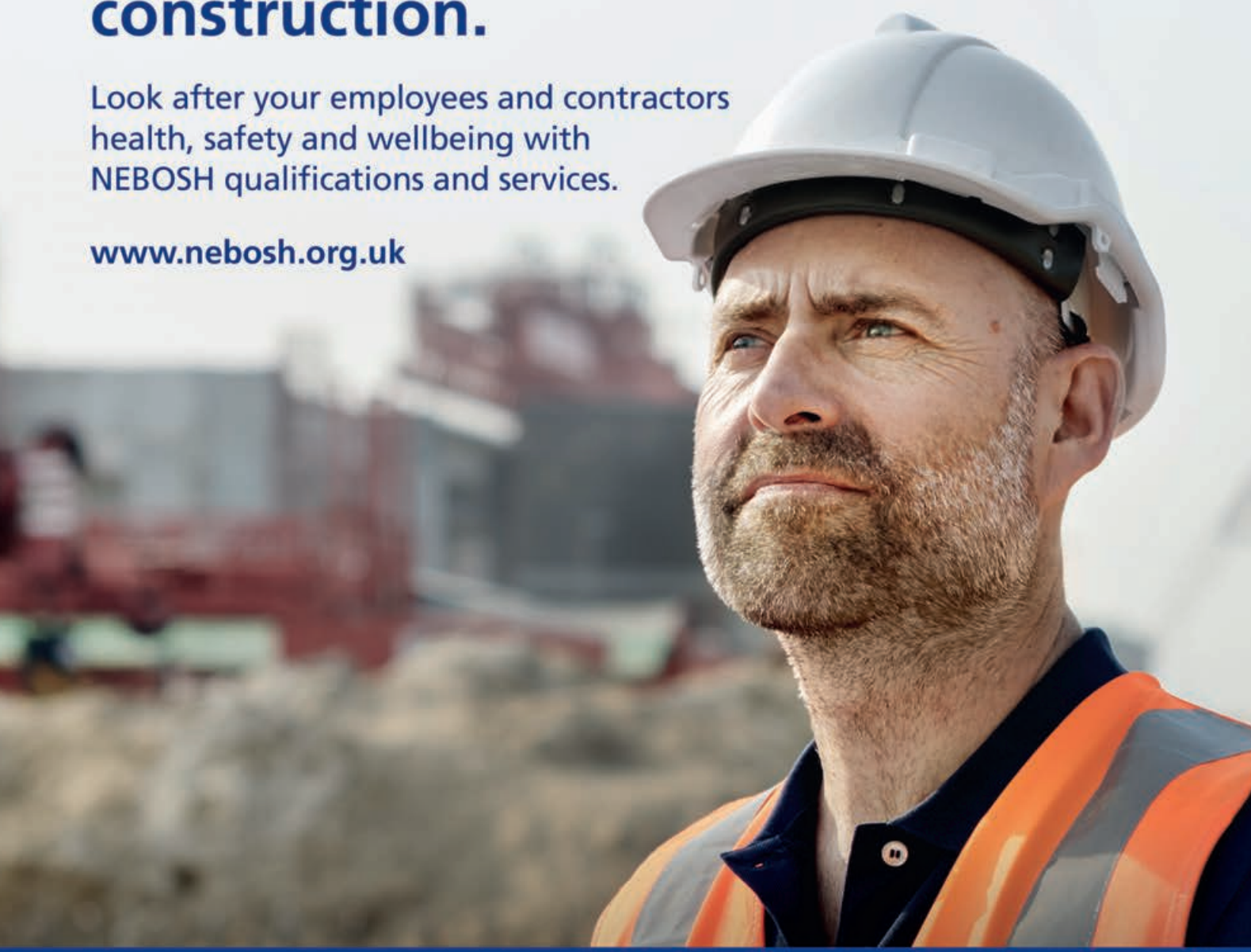

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The world's first climate-positive university

A new agricultural university in Rwanda provides a living case study of how an informed, regenerative approach to both buildings and land can provide a net boost for the environment rather than just minimising harm. By **Rod Sweet**

Although we're still in the early stages, construction has made some progress in thinking about how to reduce the embodied carbon in what gets built, and the amount of carbon emitted in building it.

But the industry is less advanced in thinking about the other side of the coin: how to enhance biodiversity and the health of habitats even as we build in them.

The challenge is how to do more good rather than just do less harm, as Will Arnold, head of climate action at the Institution of Structural Engineers, told July's 21CC podcast.

One recently completed project, a new agricultural university in Rwanda,

The 1,300ha site is next to Rwanda's last savannah woodland outside its national parks

1,300

We wanted to demonstrate that the buildings can contribute to the mission of regeneration and preserving an ecology
Chris Hardy, MASS Design Group

shows what is possible to achieve when habitat improvement is baked in as a requirement from the start.

The project

The Rwanda Institute of Conservation Agriculture (RICA) opened fully last year, offering a three-year course to around 250 undergraduates.

It's located in the south-eastern Bugesera District near the Burundi border: an arid, lightly wooded savannah chosen because of the challenges it poses to agriculture, which are common across East Africa.

The 1,300ha site is next to Rwanda's last savannah woodland outside its national parks. It had previously been logged.

The area is prone to siltation, the process by which stormwater washes topsoil away into local waterways, degrading both the soil and the waterways.

RICA promotes small-scale farming techniques that protect and enhance soil health and biodiversity in vulnerable localities, so it was conceived as a living object lesson in sustainable agricultural practice.

The campus has 69 buildings with a gross built area of 20,350 sq m set between two lakes. MASS Design Group, headquartered in Boston, Massachusetts, masterplanned the campus site, designed the buildings and managed construction between 2017 and 2023.

MASS is a not-for-profit design collective that promotes architecture for justice and human dignity. Its name is an acronym for Model of Architecture Serving Society.

"We wanted to demonstrate that the buildings can contribute to the mission of regeneration and preserving an ecology," says architect Chris Hardy, who worked on the site from early 2018.

"The goal was to use the buildings as teaching tools as part of the curriculum and demonstrate that construction can contribute."

The buildings

MASS strove to achieve the lowest embodied carbon as possible in the buildings while keeping costs down as well. Starting at the bottom, it decided on quartzite stone quarried within 10 miles of the site for their foundations. The stones were placed in an interlocking pattern and hand-mortared by local masons, following traditional foundation methods.

Some reinforced concrete was used for a grade beam to tie the foundation together and to resist seismic bending forces, but using natural, local rock dramatically reduced embodied carbon and emissions from concrete manufacturing and transport.

Moving up to the walls, MASS chose the site's earth, drawing on another local technique. Its geotechnical and structural engineers dug pits to find the right soil mix for compressed stabilised earth blocks and rammed earth, and strengthened it by adding 4.5% Portland cement and 2.5% volcanic ash.

Local workers made around 2.5 million blocks by hand on site for the 300mm-wide block walls. Using a modified traditional rammed-earth technique, workers made 500mm-wide rammed-earth walls.

MASS brought in a Canadian earth-construction specialist to direct and train the workforce. The thermal mass of the thick, earthen walls and passive ventilation keep the buildings cool without air conditioning.

Timber for the roof frames and other structures was sourced in part from Rwanda's first Forest Stewardship Council (FSC) certified forest and in part from a forest seeking FSC certification in ▶

◀ The Rwanda Institute of Conservation Agriculture (RICA) sits on a 1,300ha site made vulnerable by deforestation

▶ Aerial shot of the site early in the construction progress

MASS DESIGN GROUP

▼ Using a modified traditional rammed-earth technique, workers made 500mm-wide walls. The thermal mass and passive ventilation keep the buildings cool without air conditioning

MASS DESIGN GROUP

> **It was a little bit of a complex dance with a lot of levers that we were pulling, but the goal was lowest carbon footprint along with lowest operational cost**
> **Chris Hardy, MASS Design Group**

▼ MASS used earth to construct the walls, digging pits to find the right soil mix for compressed stabilised earth blocks and rammed earth

neighbouring Tanzania. Local clay tiles for the roof were fired with agricultural waste.

MASS calculates that its designs for the buildings led to a 60% reduction in embodied carbon compared to a typical building in Rwanda. "It was a little bit of a complex dance with a lot of levers that we were pulling, but the goal was lowest carbon footprint along with lowest operational cost," says Hardy.

The land

MASS devised a long-term land management plan for the site, which includes reforesting the depleted savannah; restoring wetlands that had previously been farmed by planting papyrus and native trees; and restoring natural corridors between the lakes and the savannah.

The corridors let species like the grey-crowned crane move between their roosts in the acacia trees to the wetland edge where they feed. The cranes are famous as a symbol of longevity in Rwanda, but they've been endangered by their illegal capture and sale as pets.

The corridors also absorb stormwater, slowing siltation and thus conserving soil and protecting the water network.

Crews also removed the toxic flowering plant, *Lantana camara*, one of the world's most invasive species. It forms dense thickets and secretes chemicals that inhibit the growth of other plants, such that the soil of

MASS DESIGN GROUP

IWAN BAAN

▲ MASS achieved a 60% reduction in the buildings' embodied carbon by using local stone for the foundations, local earth for the walls, and timber and clay tiles for roofs

Lantana-infested areas had to be removed and buried or used as backfill.

The main pedestrian path through campus is also lined with various plantings for the students and faculty to study and propagate so they can curate landscape types appropriate to the savannah ecology.

Hardy says they planted hundreds of thousands of plants. He is most proud of a new stand of the native flowering tree, *Kigelia africana*, which he says had been nearly impossible to find in nurseries and anecdotally had become rare in Rwanda.

"Providing them that stock is one of the small ways we've demonstrated conservation principles, almost as a subtext of the campus," Hardy says. "The students will see this orchard nearly every day as they walk to class."

"We wanted to give them some flexibility," he adds.

"They're not going to reforest the whole site because they're growing food, but [we wanted to] give them the ability to restore the ecologies that are critical to it functioning well."

Local expertise

Before work began, MASS hired an ecologist, Samuel Nshutiyayesu, to provide an initial assessment of the site's flora and fauna. He went on to become the institute's senior lecturer in ecology.

Hardy says that collaboration proved essential.

All these things we've done have only achieved a 60% reduction, which really means that all of us need to look hard at how we design and build buildings

Chris Hardy, MASS Design Group

"He was living on campus and we were able to have meetings with an ecologist that helped form our understanding of the land, and who was living on it and basically in charge of stewarding it for the university," Hardy says.

"We were able to have ongoing, multi-year conversations about, say, what type of grass is best for this woodland species. I didn't know anything about that before I got there."

First climate-positive university

For Hardy, the 60% reduction in embodied carbon is not so much a triumph as a reminder of the scale of the challenge.

"All these things we've done have only achieved a 60% reduction, which really means that all of us need to look hard at how we design and build buildings if we're going to achieve the targets the UN has said we need to hit if we're going to avoid a climate catastrophe," he says.

On the other hand, he claims RICA will be the world's first climate-positive university in 2044, when all the new trees and plantings have matured.

That means that by then it will have sequestered more carbon than was emitted in building it, and it will carry on sequestering carbon into the future, showing how carbon reduction and regenerative land management go hand in hand.

Amelia Ku-Neale
Decipher

‘What happens if we can’t meet BNG requirements?’

In this month’s contract clinic, a contractor is worried about the implications of not meeting the new biodiversity net gain regulations in its new project. **Amelia Ku-Neale** looks into it

THE QUESTION:

We’re building a 0.5ha housing project on a brownfield site with no vegetation near York. The planning requirements appear to suggest that we must have 10% greater biodiversity after we complete than before. Is this compulsory and what are the legal implications if we don’t or can’t comply?

THE ANSWER

With wildlife habitats at risk and a plan to build 1.5 million new homes, there is a recognised need for biodiversity net gain (BNG).

BNG became a mandatory planning condition in February 2024 and is embedded into UK legislation through the Environment Act 2021. This applies to all new small and major developments with few exemptions. Projects must deliver a 10% net gain in biodiversity compared to pre-development conditions.

Without clear rules, voluntary changes would be slow and inconsistent. This, in turn, would hinder progress on long-term climate resilience. The legislation aims to address this.

Strategies to achieve BNG include innovations such as habitat creation, green roofs and walls, urban greening, sustainable drainage systems (SuDS) and species-specific protection.

BNG technicalities

The BNG process starts after the local planning authority (LPA) approves the planning application.

Contractors and developers must use the Department for Environment, Food and Rural Affairs’ official biodiversity metric calculation tool – which can be found at www.gov.uk – to demonstrate the calculation of the number of ‘biodiversity units’ for existing habitat or habitat enhancements following the statutory biodiversity metric.

Eligible small developments can use a simpler version of the metric tool, called the small sites metric. The calculation determines how many units the pre-development site has, and how many units are needed to achieve a 10% net gain. The BNG plan, along with the calculated units, are then submitted back to the LPA.

> **BNG became a mandatory planning condition in February 2024 and is embedded into UK legislation through the Environment Act 2021**

After project completion, habitat enhancement must be maintained for at least 30 years. Common tools used to ensure this are section 106 agreements or conservation covenants.

Developers may face penalties for non-compliance or extra costs for remediation if they cannot reach the 10% target, which can be achieved either on site or off site. As a last resort, biodiversity credits can be bought to fund biodiversity across England. 2022 figures from law firm Kennedys show that credits are sold for between £25,000 to £50,000.

The project

North Yorkshire Council requires BNG delivery where a competent person carries out the assessment using the statutory biodiversity metric tool under UK legislation.

The project will be built on brownfield land, which is generally still arable enough to support biodiversity and have onsite gains. There may be a higher upfront cost, as brownfield

Question for contract clinic? Email construction-management@atompublishing.co.uk

land often requires soil remediation, but achieving 10% BNG is more attainable as the land has a lower original ecological value.

Onsite strategies might include:

- providing an aquatic habitat by installing a small pond, doubling as SuDS;
- urban greening by planting trees and shrubbery – further, planting species capable of phytoremediation to extract common heavy metals (lead and arsenic) found in brownfield land improves soil quality and allows plant and animal species to thrive; and
- installing bird and bat boxes, as well as hedgehog highways.

Implications of non-compliance

The implications of non-compliance include penalties, delays and possible rejection of planning approval. Currently, however, the consensus – including the view of the National Audit Office – is that there is a lack of clarity and guidance from the government on how to manage BNG.

Councils have limited enforcement options. And, as the legislation was only introduced earlier this year, there have been few, if any, examples of BNG enforcement.

In the meantime, it is important to exercise due diligence on contract changes and restructuring to remove uncertainties regarding responsibility for ensuring BNG is achieved.

▲ Projects must deliver a 10% net gain in biodiversity compared to pre-development conditions

Currently the consensus – including the view of the National Audit Office – is that there is a lack of clarity and guidance from the government on how to manage BNG

In terms of the contract: if you contracted before the law changed, check contract documents for their references to changes in law and who bears that risk. Typically, such events may be covered and might attract compensation of some kind. However, much will depend on what's written in your contract.

If you contracted after the law came in, then check your contract in relation to statutory requirements and references to BNG. If unsure, get help from a qualified legal professional.

Although it may sound onerous, a net gain of 10% should be entirely achievable in a brownfield site. With careful thought, it should be built into the project budget and planning.

If done well, BNG fits neatly alongside other UK environmental policies and goals. Provided there's a robust regulatory infrastructure, it should ensure a holistic approach to land management. ●

Amelia Ku-Neale is an environmental consultant at Decipher (A DeSimone Company).

Tara Garraty
Tunley Environmental

Understanding small sites and BNG

New biodiversity net gain rules have come in for sites under a hectare in size. **Tara Garraty** explains the implications for developers

Biodiversity net gain (BNG) is a framework that ensures any new development contributes positively to biodiversity and is a crucial part of the government's strategy for environmental sustainability.

The goal is to leave the environment in a better state post-development than it was before. Developers are required to assess the biodiversity value of a site before and after development, with a target of achieving a minimum 10% net gain in biodiversity. Traditionally applied to larger projects, from April 2024 BNG now extends to smaller sites as well, following an update from the Department for Environment, Food & Rural Affairs (Defra).

Historically, BNG was a requirement primarily for larger developments. However, with the new regulation, small developments – defined as those under a hectare in size or involving fewer than nine dwellings – are now also subject to BNG rules. This expansion recognises that cumulative impacts from smaller projects can significantly affect local biodiversity.

To aid in the assessment of these smaller projects, Defra introduced the small sites metric (SSM) calculation tool, a simplified tool adapted from the existing statutory biodiversity metric calculation tool, to help measure the biodiversity value of smaller sites, making it easier for developers to meet the BNG requirements.

▲ Cumulative impacts from smaller projects can significantly affect local biodiversity

The metric considers factors such as habitat quality and area, guiding developers on how to achieve the mandatory 10% biodiversity net gain.

Implementing BNG on small sites

Tunley Environmental has already worked on small developments projects to achieve BNG and clear the planning hurdle, as demonstrated at Leicester College (see box).

Here are four key steps to follow when implementing BNG on small developments.

1. Baseline assessment. Start by evaluating the existing biodiversity of the site using the small sites metric. This involves identifying and quantifying the types and quality of habitats present.
2. Design and plan. Develop a plan that outlines how the project will achieve at least a 10% net gain in biodiversity. This could include enhancing existing habitats, creating new ones or improving habitat connectivity.
3. Implementation. Carry out the planned biodiversity enhancements during the construction phase and ensure ongoing management to maintain the biodiversity gains.
4. Monitoring and reporting. Regularly monitor the outcomes and report on the biodiversity improvements to relevant authorities.

Implications and future updates

The extension of BNG requirements to small sites marks a significant step in the UK's biodiversity conservation efforts. Traditional metrics and frameworks often overlook these sites, despite their collective impact on local biodiversity. Developers, planners and landowners must now integrate biodiversity considerations into all scales of development projects to align with legal requirements and support global environmental and sustainability goals.

As the understanding of biodiversity and ecosystem services deepens, the metrics and tools used to assess biodiversity impacts will likely keep evolving. These could include more nuanced metrics that consider ecological connectivity and specific landscape. And, as enforcement mechanisms strengthen, developers may face more rigorous scrutiny to ensure compliance with BNG targets.

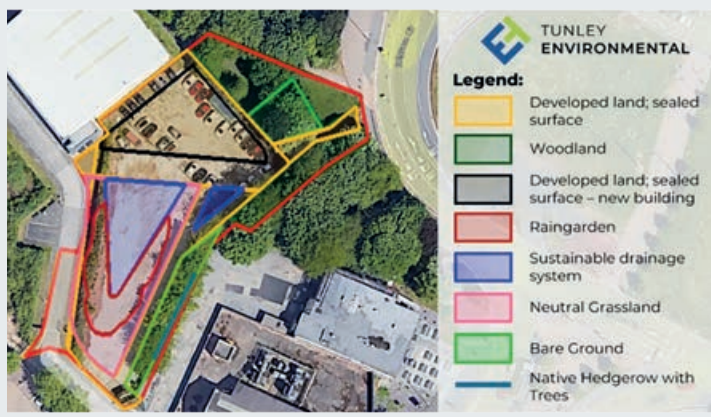
New developments will increasingly focus on innovative design and the integration of green infrastructure, even on small sites. By prioritising nature-inclusive solutions, developers can contribute to larger ecological networks, enhancing habitat connectivity and resilience in the face of climate change. This approach will be crucial in meeting environmental goals and regulatory requirements in the years ahead.

Tara Garraty is a biodiversity specialist and sustainability scientist with Tunley Environmental.

> **Traditional metrics and frameworks often overlook these sites, despite their collective impact on local biodiversity**

Pre-development site plan

Post-development site plan



DATA SOURCE: GOOGLE EARTH 2024 DRAWN BY L DRESSER APRIL 2024

Case study: Leicester College

New facility achieves biodiversity net gain of 21.1%

Tunley Environmental conducted an independent small-site BNG assessment on a project at Leicester College to identify and quantify the biodiversity of the site before and after development.

The college was planning to build a new training facility at its Abbey Park Campus, working with Moss Architecture Interiors, and needed to provide evidence of 10% BNG post-development for planning permission.

The proposed development retained 653 sq m of its 3,278 sq m area for habitats and includes the design and implementation of a sustainable drainage system which feeds into a rain garden, planting of individual trees and inclusion of a meadow mix to form neutral grassland. The development also enhanced the line of trees to a 'native hedgerow with trees' with medium distinctiveness.

The total biodiversity units post-development were 0.90 for 'area habitats' and 0.26 for 'hedges and lines of trees'.

Overall, the BNG assessment showed a net gain in biodiversity, with a 21.1% increase in biodiversity units for area 'habitats' and a 16.8% increase in biodiversity units for 'hedgerows'.

ALESSANDRO DE BESI

A view from the bridge

Willmott Dixon's latest project, next to London's Tower Bridge, has incorporated 1930s steel beams in a building designed to make an impact on sustainable construction. **Cristina Lago** reports

▲ **TBC.London faces towards Tower Bridge and the City to the north and Canary Wharf to the east**

It was a £2.7m-£2.8m decision to move the lift course to the back of the building

2.7m

TBC.London might soon become one of the most photographed office buildings in the world. Located on the south bank of the River Thames, it sits in a unique spot overlooking Tower Bridge and within the Shad Thames conservation area, famous for its 19th-century warehouses and cobbled streets.

But aside from being at the steps of an iconic landmark, Willmott Dixon's project has strong sustainability credentials: it has been designed to be net zero in operation, becoming one of the first workspaces in the capital to be run solely by electricity.

It is also a poster child for the retrofit-first approach: instead of demolishing the former 1990s office block, sustainable real estate developer Fore Partnership – Willmott Dixon's client – was adamant that the project should reuse the old foundations and make the most of the circular economy. So much so that it decided to reclaim 16 tonnes of prewar steel beams from the old House of Fraser store in the West End and incorporate them into the building's frame – believed to be a UK first.

Retrofit

The original building, Tower Bridge Court, was first put on the market by Savills in 2018. Erected in 1990, it had a gross internal area of 10,300 sq m comprising six floors and a basement including 20 car parking spaces. It was built with a concrete frame construction and external cavity walls with an outer skin of clay-facing brickwork.

Southwark Council agreed during a pre-application meeting in September 2017 that the building could be demolished as long as the replacement made a better contribution to the character and appearance of the conservation area. One of the proposals considered was to demolish the block and rebuild it as a 14-storey hotel.

"I think it effectively scared people off because any smart hotel person would have thought there's no way that they're going to get planning approval for a knockdown rebuild for a 14-storey class building next to Tower Bridge," says Basil Demeroutis, an aeronautical engineer and Fore's managing partner.

In the end, Fore was one of three bidders that put an offer and successfully bought it for £51m, £6m less than the asking price.

"We bought it as a sale-leaseback from the West of England insurance company, which was the owner-occupier of the building," Demeroutis continues. "They stayed in for a year and during that time we got our act together in terms of what we wanted, which we finally decided in February 2020."

Demeroutis laughs at the "perfect timing" of the resolution: one month later, Fore had to put everything on hold as a result of the covid pandemic.

"But our strategy was from the beginning not knocking down the building," he emphasises. "As part of our company ethos [Fore's motto is 'Do well by doing right!'], we are committed to no new construction and therefore it was important to us to work with the existing building. Carbon was embedded into our thinking and strategy from day one."

Getting Willmott Dixon on board

To realise Fore's vision, which included working with a contractor committed to overcoming the challenges of implementing sustainable methods of construction, they needed to team up with the right people. ▶

TBC.London

- Value: £56m
- Client: Fore Partnership
- Main contractor: Willmott Dixon
- Architect: ECE and Stiff + Trevillion
- Structural engineer: Webb Yates Engineers
- Form of contract: Bespoke contract based on JCT
- Timeline of the project: 95 weeks contract programme extended to 101 weeks
- Completion date: October 2024

Building dimensions

- Building height: 36m (measured from average ground floor level to top of level 09 parapet)
- Building dimensions: 25m (w) x 83m (l) (measurement taken at level 01 at the widest and longest point of building)
- Floor space: 13,660 sq m
- Size of site: c2,150 sq m

"It was important to us to work with the existing building. Carbon was embedded into our thinking and strategy from day one"
Basil Demeroutis, Fore Partnership

▶ The project reused 16 tonnes of reclaimed steel from the old House of Fraser building

They initially signed a preconstruction services agreement with McLaren but the process eventually ended as a single-stage tender after Demeroutis met with Chris Tredget, then managing director of Willmott Dixon's construction team for London and the east of England, at a UKGBC event, where Demeroutis sits on the board.

From that point, Fore and the contractor worked bilaterally to develop and negotiate the cost plan. The pandemic and lockdowns meant that work had to be paused for six months but both companies ultimately signed a bespoke JCT contract in August 2022, with works starting on site the following month.

Demeroutis adds that while Willmott Dixon was ready, willing and able to join Fore's journey – the hardest part was to convince its funding partners to come aboard.

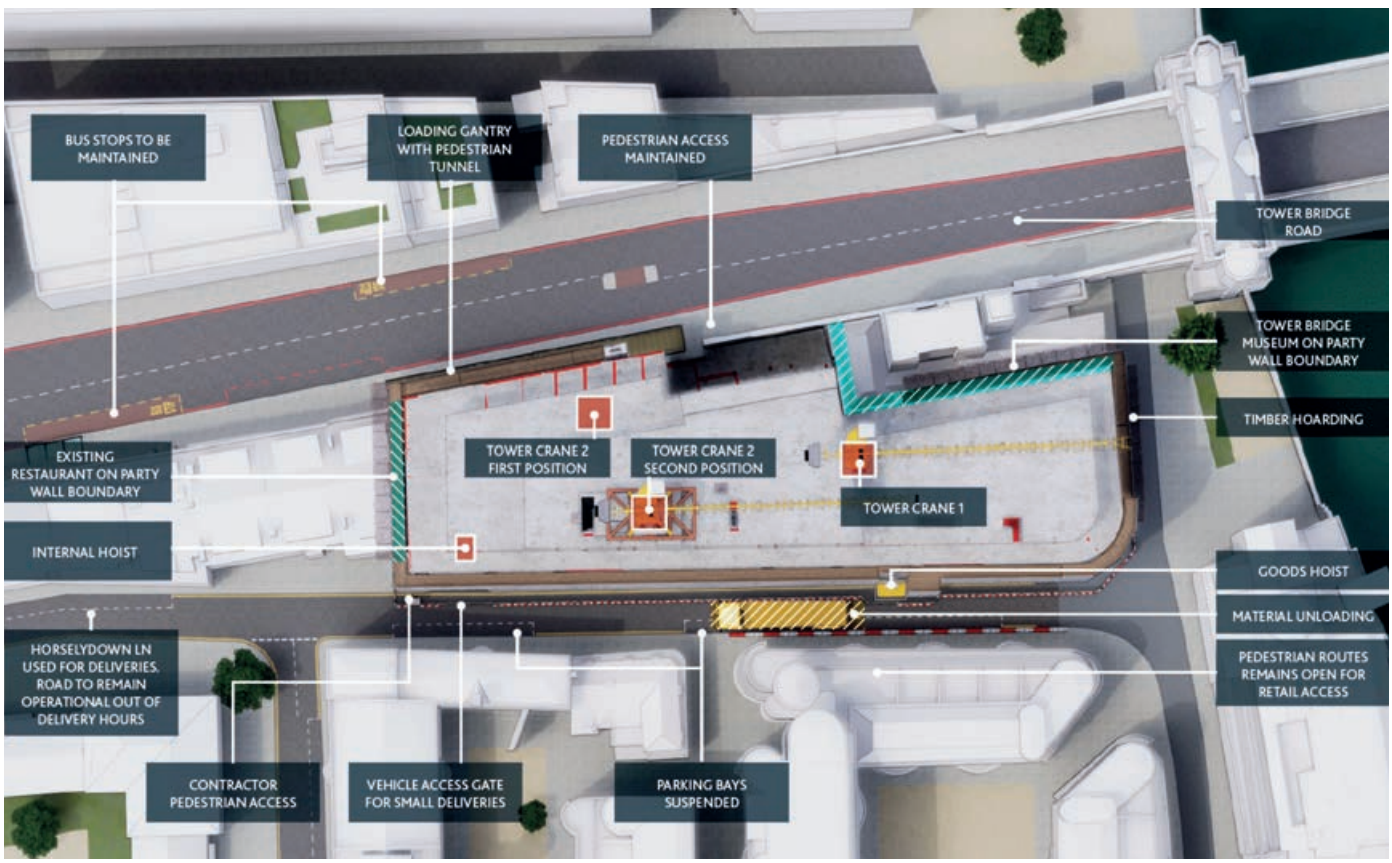
"There was a financing component that unlocked the ability to start on site, which only unlocked once the pandemic officially ended in the summer of 2022," says Demeroutis. "It's hard to remind ourselves what it was like back then but, from a company's standpoint, it was uncertain times.

"However, we knew that at some point we would come out of it and we knew that it was the right product, the right building and that we had the right story."

Reimagining Tower Bridge Court

Constructing TBC.London involved the implementation of innovative and sustainable materials and technologies – but it also came with important challenges associated with the building's tight location in a densely populated heritage area with minimal storage access, explains Matt Adams MCIOB, senior operations manager at Willmott Dixon.

The scheme required cutting and carving the existing building while retaining some of the structure, including the concrete frame, to add three floors and turn it into an eight-storey plus basement building. It was expanded from a 6,300 sq m net internal area to almost 20,000 sq m,



▼ Diagram of the site setup. The tight location and lack of storage space were among the project's biggest challenges

TBC.London has led a breakthrough in 'urban mining' by reusing 16 tonnes of 1930s steel beams

16

We reconfigured the whole basement, which was a big challenge because it meant that all the space down there – including car facilities, sprinkler tanks, attenuation tanks – had to be shifted around
Matt Adams, Willmott Dixon

which had to be done sensitively, due to the location's significance.

"Essentially, what we've constructed is the removal of the middle of the building, replaced it with a new core, added three additional floors and then knitted the existing frames together," says Adams.

A big financial decision early on, adds Demeroutis, was deciding where to move the core, which in the old structure was on the west side, facing Tower Bridge Road.

"We reconfigured the whole basement, which was a big challenge because it meant that all the space down there – including car facilities, sprinkler tanks, attenuation tanks – had to be shifted around and ductwork locations moved around inside the building," Adams tells *CM*.

"Originally, on Tower Bridge Road, there was a glassed-type facade atrium area which was using up a lot of space and we removed it and extended the floor plates."

Demeroutis adds: "It was a £2.7m-£2.8m decision to move the lift course to the back of the building, which is what we did in the end. That created a 12m clear span from the edge of the left corner to the windows – up from the previous 6m in the old building between the core and the windows facing the river and the City – and, instead of the doughnut-shaped floorplates, we designed it as a c-shape."

A positive of the new entrance forecourt is that it gives breathing space to the adjacent accumulator tower and chimney stack, a Grade II-listed building next to Tower Bridge. Its purpose was to store high-pressure water for use in hydraulic machinery. To avoid obstructing its view, the north side of TBC.London was designed to be lower than its middle, and even the brick colours match those of the historic structure.

▲ The project has used sustainable building materials including bricks made of at least 60% waste and carbon-sequestering plasterboard

"The relationship between the accumulator tower and ours started to inform how we wedding-cake the building with the surrounding landscape," Demeroutis says.

"We were able to reuse the existing piles and only had to introduce new ones underneath the new staircores," says Adams.

Made of steel

TBC.London led a breakthrough in 'urban mining' by reusing 16 tonnes of 1930s steel beams salvaged from the former House of Fraser building in London's West End.

"The idea came from Basil while he was going on a bike ride with Gareth Atkinson, a director of Civic Engineers, who was working on the House of Fraser refurbishment project. He told him that he had some steel beams there, so Basil came to us and said, can we use them in our building?" explains Adams, who laughs when retelling how taken aback he was by the suggestion. "I said: what, really? But we did it."

The use of reclaimed steel was a core sustainability initiative for the project, but it required significant coordination and problem-solving to successfully implement it. Willmott Dixon had to pause its original steel order, and work with the suppliers to cancel a portion of it, to instead use the House of Fraser steel. The original plan was to reuse many more beams from the old department store but challenges around supply and demand and testing constrained it.

For this, Adams's team worked with Cleveland Steel, a company specialising in sourcing and storing reclaimed steel. "You send them your steel fabrication drawings and ask them to match them with what they've got available," Adams says.

"It's very economical and an important step towards the ▶

▲ TBC.London overlooks Tower Bridge and sits within the Shad Thames conservation area in the borough of Southwark

circular economy. I would have loved to use many more [recycled steel beams] but we engaged with Cleveland a bit later in the programme and it is all dependent on what is available at the time. Next time we'll do more."

Because the beams dated from the 1930s, they had to be thoroughly tested to establish the mechanical and chemical properties of the steel, which added another layer of extra time and complexity.

The independent Steel Construction Institute's protocol for reusing reclaimed steel excludes any produced before 1970, and guidance in this area is still underway. There are some limitations to the applications of this older stock. For example, it cannot be used in structures that are subject to fatigue, plastic analysis or seismic loading. It should also be stripped of paint and finishes and hardness tested to determine its yield and ultimate strength.

In addition to the House of Fraser beams, TBC.London incorporated a further 40 tonnes of reclaimed steel from sites across south-east England, and all reinforcement within the structure's concrete comes from 98% recycled steel.

"It's a powerful story that shows you can change things in the industry," Adams adds. "You are working with your competitors and new people you've never met before to achieve something that's very positive which also offers an end cost-neutral position. But the carbon saving is invaluable."

I would have loved to use many more recycled steel beams but we engaged with Cleveland a bit later in the programme and it is all dependent on what is available at the time
Matt Adams, Willmott Dixon

CV: Matt Adams MCIOB, senior operations manager, Willmott Dixon

My career in construction began in surveying, working for a very small PQS firm based in Watford. Since then I have worked as a senior surveyor for Kier and have been with Wilmott Dixon for 12 years now.

Approximately six years ago, I was asked to lead a challenging project in Hampstead as a senior operations manager – just before the pandemic hit, which brought a whole new unknown set of challenges.

TBC.London is the most sustainable project I have ever built and its complexity and the location being next to a national treasure are the type of challenges I thrive off.

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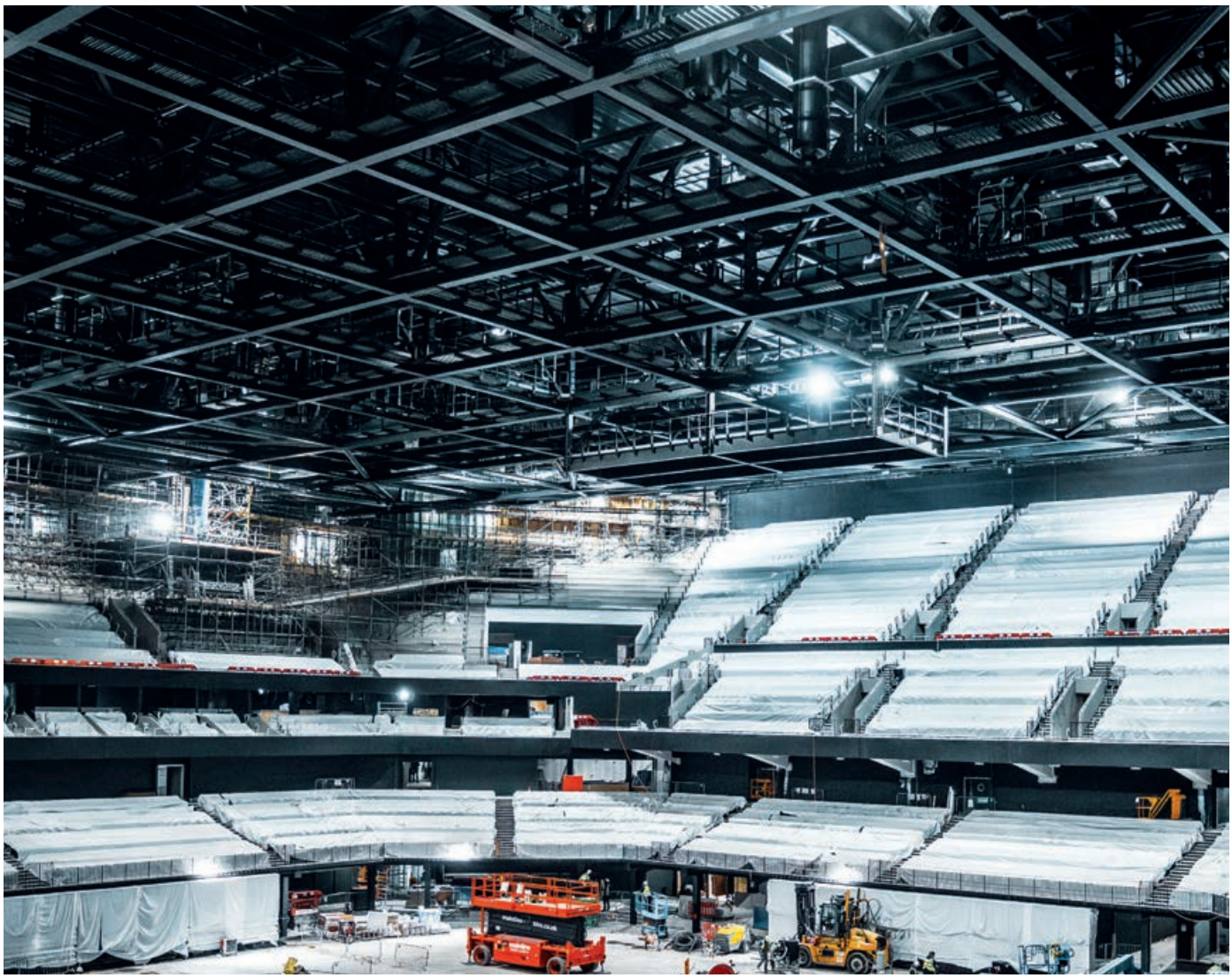

Structural Steel Design Awards 2024

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Introduction

Since 1969, the Structural Steel Design Awards have showcased excellence in modern steel construction. This year's shortlist continues the tradition

Jointly sponsored by the British Constructional Steelwork Association (BCSA) and Steel for Life and celebrating their 56th year, the 2024 Structural Steel Design Awards (SSDA) have once again highlighted and rewarded many of the best examples of excellence, ambition and innovation in our built environment.

The entries this year reflect the wide geographical spread of steel's appeal for a variety of projects, which include prestigious mixed-use schemes, office buildings, entertainment venues and beautifully designed footbridges. The judges were particularly interested in projects that reflected the reuse of existing structures and showed a commitment to lessening a project's embodied carbon.

Twenty-one projects made the shortlist, from which the judges presented six awards, seven commendations and one merit.

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

PHOTO: PAWEL PANICZKO

Steel performs with flexibility

A world-class cultural venue, capable of hosting a range of events, including the Manchester International Festival, could only have been created with interlinked steel trusses and a host of mega columns

Set within the St John's regeneration area, on the site of the former Granada TV premises, the Aviva Studios are set to enhance Manchester's status as a hub for arts and culture.

The steel-framed venue will be run by the team behind Manchester International Festival (MIF), the city's biennial arts celebration and it is supported by Manchester City Council, HM Government and Arts Council England.

It occupies around 17,000 sq m and includes a large warehouse space and adjoining theatre that can be used independently or together.

"Flexibility is key to the project's design," explains Laing O'Rourke project technical leader Andy Bell. "The performance spaces

▲ Structural steelwork has been used to create a box-in-box design

have movable partitions and are acoustically isolated so they can be used individually or as one large area."

Measuring 68m long, 34m wide and 20m high, the warehouse is the biggest of the two venues. It can be one large performance space, or divided in two by closing a set of large steel-framed acoustic partitions that retract around the interior walls on tracks.

The interconnected theatre can be used simultaneously as an individual venue, but the addition of two 60-tonne acoustic proscenium doors, which can be raised, will allow it to connect into the warehouse, significantly enlarging the stage. The doors are supported by a 23m long x 5m deep truss, which weighs 125 tonnes.

A box-in-box approach has been used on the scheme. This structural design means there are two isolated inner boxes (theatre and warehouse), both surrounded by a void (up to 2.5m thick) and then a larger outer box. The latter box is formed by a series of 300mm-thick concrete panels, which are isolated from the main steel frame via acoustic bearings.

The inner steel-framed warehouse box has an attached series of 200mm-thick precast isolation panels, while the theatre has 200mm-thick timber panels supported by its steelwork.

This complex acoustic treatment not only negates noise ingress between performance spaces but also prevents sound penetrating the venues from outside.

As well as creating the box-in-box design, structural steelwork has formed trusses and transfer structures that help the building bridge over a number of site constraints.

One of the more challenging parts of the steel frame is known as the west mega wall. It spans over Water Street, separates the warehouse from the theatre and contains the connecting proscenium arch. The wall is supported by three mega columns, which measure 2.5m x 2.5m and reach a height of 34m.

PHOTO: PAWEL PANICZKO

▼ Steel trusses support the warehouse and theatre roofs

Award: Aviva Studios, Manchester
Architect: Office for Metropolitan Architecture
Structural engineer: Buro Happold
Steelwork contractor: William Hare Limited
Main contractor: Laing O'Rourke
Client: Manchester City Council

A world-class cultural venue housing a warehouse space capable of supporting 200 tonnes of rigging from long-span steel trusses, and adjoining theatre, to be used independently or together. The result is a visually striking space able to host a wide range of events with large audiences, enhancing the city's status as a hub for arts and culture
SSDA judges

Limited space for the mega columns has been compounded by the fact that the middle member of the west wall's three columns had to be located directly above numerous important arterial service routes.

To solve this, a large truss supports this central mega column, diverting 5,000 tonnes of load via a cantilever into the ground and away from the subterranean services.

An interlinked series of trusses span between the mega columns to form the warehouse and theatre roofs. These trusses absorb considerable loadings as they also support a crane and its two runway beams, which will allow the warehouse to display and move large exhibits hung from the roof.

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

Rising high in the City

Soaring from a plot bounded by two of the City of London's busiest thoroughfares, 8 Bishopsgate is the UK's tallest structure to achieve a BREEAM 'Outstanding' rating

PHOTO: DIRK LINDNER

Breaking away from the traditional office block design, the 50-storey 8 Bishopsgate project has also achieved a number of sustainability credentials, making it a standout structure in many ways.

Containing 30% less structural embodied carbon than London tall building benchmarks, the building's design revolves around the breaking down of its massing into smaller blocks. This allows the tower form to address the site constraints and brings human scale to the scheme.

The blocks are differentiated by scale, materiality and structural function, while the building's stepped form is accentuated by terraces and cantilevers that contribute to a visually dynamic composition.

Starting at ground floor level, the steel frame incorporates three distinct blocks that are stacked up to form the overall building.

Each has a unique identity related to the cladding module, the addition of fins to the mullions or how the structure is seen through it. While the building is mainly glazed in a double-skin curtain walling, the lowest block is clad in stone to respond to the street context.

A low-rise block extends up to level 11, while a mid-rise one, positioned behind it, rises from level six to level 26. A slim high-rise block tops out at floor 48. A pavilion above this incorporates a public viewing gallery and plant zones.

Award: 8 Bishopsgate, London
Architect: WilkinsonEyre
Structural engineer: Arup
Steelwork contractor: William Hare Limited
Main contractor: Lendlease
Client: Stanhope plc

WilkinsonEyre director Oliver Tyler says sustainability has been a key design driver from the project's inception, and one of the main goals was to achieve material efficiency.

"We used bespoke fabricated steel sections throughout, which were optimised for individual unique loads. By rationalising the building's frame, we needed 25% less steel, which saved approximately 5,000 tonnes of carbon."

The primary internal grid for the majority of the building is based around a 12m x 9m column pattern, using 620mm-deep plate girders with circular and rectangular openings to accommodate the building services.

"The column positions were selected in order to mitigate any column transfers, whereby the internal columns in the low-rise block continue upward to become perimeter members on the mid-rise part of the project," says Arup project engineer Jeremy Edwards.

Using the same column grid pattern, the high-rise block has no internal columns. Beams span directly between perimeter steel columns and the core, creating 21 storeys of column-free space.

Providing the stability for the 50-storey building are two concrete cores. The north core extends to the full height of the structure, while the south core terminates at level 24.

Giving some extra stiffness to the structure, the mid-rise block is a braced box, featuring perimeter steel bracing that connects the two cores and mobilises the perimeter columns to resist horizontal loads. This stiffens up the low and mid-rise blocks and allows for a narrower north core for the uppermost block.

To further maximise floor space, the building cantilevers out along its western elevation, oversailing the pavement along Bishopsgate. This overhanging west face reinforces the architectural concept, while providing 15% of the net internal area, improving the scheme's viability.

The western elevation's overhang commences at level six and initially extends up to floor 26. Further cantilevers begin at level 26 and 48, with the former overhanging by up to 3.8m.

"Eschewing the creation of a simplistic City icon, this 50-storey building successfully combines a fragmented form, determined by function and site constraints, with a rigorous structural system. The resulting variety of spaces has proved a letting masterstroke. Impeccably constructed through a construction management contract, this is a top-class project"
SSDA judges

◀ 8 Bishopsgate's stepped design has created another City of London icon

▼ Openings in the girders accommodate building services

PHOTO: DIRK LINDNER

East End trader

Exposed steelwork forms a standout retail building adjacent to a historic market

Commendation: Bishops Square, London
Architect: Foster + Partners, Bond Bryan
Structural engineer: Price & Myers
Steelwork contractor: Elland Steel Structures Ltd
Main contractor: VolkerFitzpatrick
Client: J.P. Morgan

Forming part of the multi-million-pound Bishops Square redevelopment, which has transformed a large area next to east London's historic Spitalfields Market, a steel-framed structure has added 10 retail and food outlets.

The distinctive two-storey building includes an exposed structural steel frame, coated in dark red iron oxide, infilled by glazing, canopies and partitions to give it a modern, industrial feel.

As well as providing the scheme with its integral aesthetic look, steelwork was chosen for its speed of construction. The material created a lighter structural frame than many other forms of construction – an important consideration as the new building is positioned and founded on top of an existing car park substructure.

One elevation is directly supported on an existing basement wall, while the main elevation, containing the shopfronts, has been formed with a series of trusses.

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

All change at Victoria

Located opposite London's Victoria railway station, n2 Nova Evolved is an example of how engineering excellence can unlock value in heavily constrained sites without compromising quality and sustainability

Built on a confined site, surrounded by busy roads and neighbouring properties, and with transport and water assets located beneath, the 17-storey n2 Nova Evolved commercial building has overcome numerous challenges during its construction.

Landsec project director Damien Bettles explains: "Built on one of London's most bustling sites, this project could only be supported on a small number of large-diameter foundation piles positioned in between the subterranean assets.

"To overcome this challenge, the ground floor and first floor spaces are cleverly designed around a system of steelwork trusses, able to transfer the optimised commercial grid of the superstructure to the foundation piles. With spans of up to 45m, the use of steelwork for the truss system was key to delivering a sustainable design solution."

▲ Steelwork trusses were positioned at the lower levels

As the space to install new foundations was very limited, the only option was to install a few very deep piles, with one of them as close as 1.5m from a London Underground tunnel. To achieve the required capacity, some of these piles had to be designed to reach almost 80m, which is said to make them the deepest piles in London.

Structural steelwork starts at ground level, atop a concrete basement substructure. In total, eight trusses are positioned at the lower levels of the building. These

Award: n2 Nova Evolved, London
Architect: Lynch Architects, Veretec
Structural engineer: Robert Bird Group
Steelwork contractor: William Hare Limited
Main contractor: Mace
Client: Landsec

A complex site with congested services restricted building supports to just a few points, resulting in steel trusses creating a distinctive double-height feature at ground floor. Secondary transfer trusses between first and second floors house the plant, with the rest of the building free to create a unique, top-class office space
SSDA judges

not only form bridges between the pile locations but also create column-free spaces for the ground, first and second floors.

"We worked together with the client and architect to provide the optimum superstructure grid for the scheme. However, due to the presence of the assets below ground, we needed to design a series of internal and external trusses to transfer all superstructure loads down to the foundations," says Robert Bird Group associate director Alejandro Cruz.

Positioned between the ground floor and level three, the trusses vary from single- to double-storey-height elements.

Three internal full-height trusses at level two span between the core and an eastern perimeter truss. These internal trusses were integrated with the plant room that is located at level one and level two.

Probably the two most visible trusses are known as A and 6A. These form the main southern and eastern facades of the building. They both start at ground level and extend up to the underside of level two. Truss A measures 44m long and is 10m high and, like all of the trusses, it was fabricated from steel plate ranging in thickness from 25mm to 75mm.

A further five bridging trusses help to create the open-plan column-free spaces for the lower floors, while also supporting the columns for the upper levels.

Landsec is a signatory to SteelZero – a global initiative committed to driving the transition to a net zero global steel industry – and says it is encouraging steel producers to decarbonise steel production. Consequently, a proportion of the steel used on this scheme came from recycled sources.

"We've made a commitment to transition to 100% of our steel requirement to be net zero by 2050 and to transition 50% of our steel requirement to meet the SteelZero interim criteria by 2030," says Bettles.

▼ The trusses are incorporated as a visible feature of the finished design

PHOTO: STUDIO STAGG

Keeping the lights on

Behind the Piccadilly Lights, a steel-framed scheme has transformed a site once occupied by 13 buildings

PHOTO: CENTRAL PHOTOGRAPHY

Commendation:
Lucent, London
Architect:
Fletcher Priest Architects
Structural engineer:
Waterman Group
Steelwork contractor:
Severfield
Main contractor: Wates Group
Client: Landsec

An eight-storey steel-framed development known as Lucent, consisting of Grade A office space, retail units and seven apartments, includes a rooftop restaurant that opens up stunning views of the capital.

Two large retained elements are incorporated into Lucent. One is the structure supporting the Piccadilly Lights digital screen and other is a two-storey store incorporating a Boots unit.

Severfield project associate director Nick Scott says: "We had to carefully erect steelwork over the existing Boots store and thread steel beams around the Lights, without damaging them or requiring them to be shut down."

The structure supporting the digital screen was temporarily propped during the demolition and construction works. Once Lucent was completed, the props were removed and the screen now gains its lateral stability from being connected to the new steel-framed structure.

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

Sky's the limit

The Sky Innovation Centre represents the latest phase in the redevelopment of the media company's west London campus

Designed to include impressive wellness, sustainability and environmental performance credentials, the Sky Innovation Centre was delivered with a significant focus on driving down embodied carbon.

To this end, waste was reduced through prefabrication and efficient design, and by ensuring materials were responsibly sourced. One hundred percent of construction waste was diverted from landfill and, with its supply chain partners, main contractor ISG says it eliminated the majority of single-use plastic packaging during construction.

Occupying the site of two former buildings, the new three-storey steel-framed building has been designed to maximise natural light within the majority of its open-plan accommodation.

The exterior features a ziggurat-style facade, created with splayed columns. Internally, a full-height atrium is flooded with daylight. Topping the building, a large photovoltaic (PV) array generates emission-free electricity.

Steelwork was chosen for a number of reasons, one of which was speed of construction. The frame was faster to build and required less trade coordination than alternative framing solutions.

Using steelwork also helped the project team maximise offsite construction, which enabled the job to progress during the Covid-19 pandemic. With minimal delay and few workers on site, the steel erection team were able to 'bubble' themselves and maintain effective Covid protocols, which meant the site was only shut down for three days.

▲ The ziggurat-style facade makes use of splayed columns

The steel frame creates floorplates that are column free, with perimeter columns spaced to provide direct support to a series of primary trusses. In this way, 13.5m-wide spans have been efficiently achieved with a minimal steel tonnage.

The trusses' T-plate bottom chords minimise visual appearance, while facilitating simple welding of truss nodes. The internal visual impact of the trusses is further reduced

▲ The steel frame allows creation of column-free floorplates

Award: Sky Innovation Centre, London
Architect: AtkinsRéalis
Structural engineer: Arup
Main contractor: ISG Ltd
Client: Sky

by integrating the top chord box section into the depth of the slab.

During the design phase, several options were considered for the slabs. The choice of hollowcore slabs has provided a durable and robust solution that gives enough mass to control dynamic footfall response.

Arup says the highly efficient, beautifully crafted minimalistic steelwork trusses are integral to the architectural feel of the building. They are created with advanced structural analysis and design, achieving a steel weight of 60kg/sq m.

The primary steel frame geometry is linear and regular for direct load paths and ease of construction. The eye-catching ziggurat facade is formed with shaped secondary steel members. This enabled the primary frame fabrication to start while final facade coordination continued, shortening the critical programme path by two months.

The design, and the use of splayed columns, helped reduce stress and deflection in the primary beams. They have also improved the footfall response of the slab, while providing stiff landing points for atrium stairs connecting onto the floorplates. This saved 19% CO_2e compared with vertical columns.

"Beautifully detailed trusses, elegantly tapering splay columns and flat soffits provide Sky's desired sophisticated industrial look and feel," says Arup engineer Timothy Snelson.

"We were able to design out ceilings and other finishes, thereby substantially reducing the overall building embodied carbon."

A further embodied carbon reduction was achieved by designing out any structural topping for the internal slabs to allow future disassembly and potential recovery of the structure.

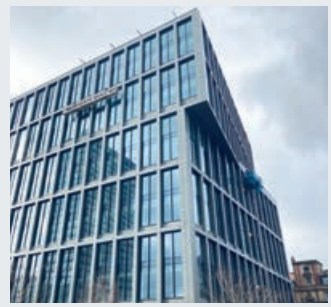
"We had a clear vision to create a unique and responsible building, steeped in our ethos to do the right thing for the environment and our people," says Diana Foxlee, director, Sky Spaces

"Staying true to these principles and using learnings from previous experience helped us make brave decisions, challenge industry standards and deliver even better outputs."

"This minimalist structure, comprising highly optimised steel floor trusses, supported on splay columns to reduce bending, maximises design for disassembly. A key aim of the client, adopted throughout the supply chain, was to minimise environmental impacts. The result is a very adaptable, high-quality workspace with excellent sustainability credentials"
SSDA judges

Twisting net zero offices

This outstanding steel-framed commercial scheme is the latest addition to a thriving Manchester business district



Commendation: 4 Angel Square, NOMA, Manchester
Architect: SimpsonHaugh
Structural engineer: Buro Happold
Steelwork contractor: Billington Structures Ltd
Main contractor: Bowmer + Kirkland
Client: MEPC

Located in the NOMA district in Manchester city centre, 4 Angel Square is an 11-storey 18,580 sq m contemporary office building.

The steel-framed structure is set around a centrally positioned concrete core that helps maximise the extent of clear-span floor space, while allowing greater penetration of sunlight.

The frame is based around a regular 8m perimeter column spacing, with internal spans of up to 18m long. Most of the beams are fabricated plate girders with bespoke web openings for the building's services.

Adding some architectural drama and creating a standout landmark, the building is split into two blocks, with the upper four levels shifting around a central pivot point.

The upper block responds to city views towards Victoria Station and the structure's 'twist' forms a couple of 3.5m-wide corner cantilevers at seventh floor.

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

Spanning road and rail

Linking a housing development in Chelmsford with the A12 trunk road, the Beaulieu Parkway Bridge is a vital piece of infrastructure that alleviates congestion around the Essex town

Award: Beaulieu Parkway Bridge, Chelmsford
Architect: AECOM
Structural engineer: AECOM
Steelwork contractor: Briton Fabricators Ltd
Main contractor: GRAHAM
Client: Countryside Zest LLP

Constructed over an 18-month period, the Beaulieu Parkway Bridge spans both the Great Eastern Main Line railway and the northbound A12 slip road, providing a connection to the new Chelmsford relief highway, while also creating a route to a planned railway station.

Curved on plan, the steelwork elements for the 161m-long three-span weathering steel bridge consist of four lines of 2.7m-deep plate girders, which have been designed to twist into shape under permanent load.

"Accuracy of fabrication, which was vital to this project, was controlled in the workshop, using laser levels and purpose-made jigs," explains Briton Fabricators managing director Dean Morcom.

"Information was gleaned from our advanced steel 3D model, which was prepared in-house by one of our experienced design modellers."

Overall, the steelwork contractor fabricated, supplied and erected 891 tonnes of weathering steel for the bridge.

One of the main challenges was the confined nature of the site and the limited access. Consequently, the plate girders were delivered to site in small sections that were then welded together into 40m-long sections.

To carry out this preliminary work, temporary trestles were designed and deployed to support the girders,

while shrouded areas were installed to allow the team to weld, test and blast the steel sections.

Once the paired girders, weighing up to 132 tonnes each, had been made up into the required lengths, they were then lifted above the adjacent overhead railway power lines and transferred onto another temporary works set-up.

This 'at height' temporary location mimicked the bridge's final abutment and its two intermediate central support piers. With two rows of purpose-built trestles positioned at weld locations, all of the structure's connections were completed.

Once all the preliminary works had been completed, self-propelled moveable transporters (SPMTs) lifted and moved the entire bridge superstructure to its permanent location. The bridge weighed 2,400 tonnes during the installation programme.

The bridge was manoeuvred and cantilevered over the railway line and the A12 slip road, and installed within a 10mm tolerance. This is believed to be the longest bridge installation ever undertaken in the UK using SPMTs.

Martin Leach, managing director, major projects, Countryside, says: "We were enormously proud to announce the opening of the new Beaulieu Parkway bridge and relief road for Chelmsford, the final stage of a £35m infrastructure programme which will have such a positive impact on the local community."

Councillor Lesley Wagland OBE, Essex County Council's deputy to the leader with principal accountabilities on major infrastructure projects and freeports, says: "The bridge provides an important strategic link for commuters and is intended to help ease congestion around the town as people journey to and from Braintree, Stansted and the M11.

"Essex County Council has worked hard with partners to put in place a number of transport developments in this part of Chelmsford, from the relief road to the new bypass and train station, which are vitally important for making sure the transport network is fit for the future and giving local people safer, greener and healthier choices in how they travel."

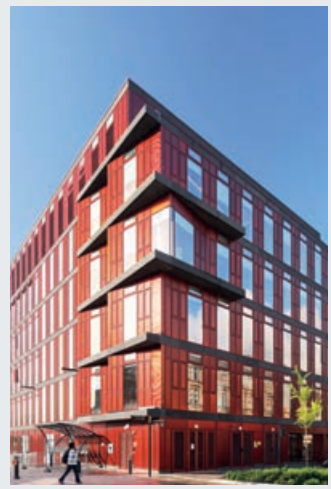
"This three-span highway bridge has an extraordinary construction story. The structure, which spans a road and live railway, is curved in plan and section. Built on the ground, complete with much of its deck, the structure was then driven into position on multiple SPMTs
SSDA judges

◀ The entire bridge was assembled on a site close to its final position

▼ The bridge was manoeuvred over the railway line and A12 slip road

Learning with steel

Different research groups come together under one roof, with a design that encourages collaborative engagement



Commendation: Clarice Pears Building, Institute of Health and Wellbeing, Glasgow
Architect: AtkinsRéalis
Structural engineer: AtkinsRéalis
Main contractor: Multiplex
Client: University of Glasgow

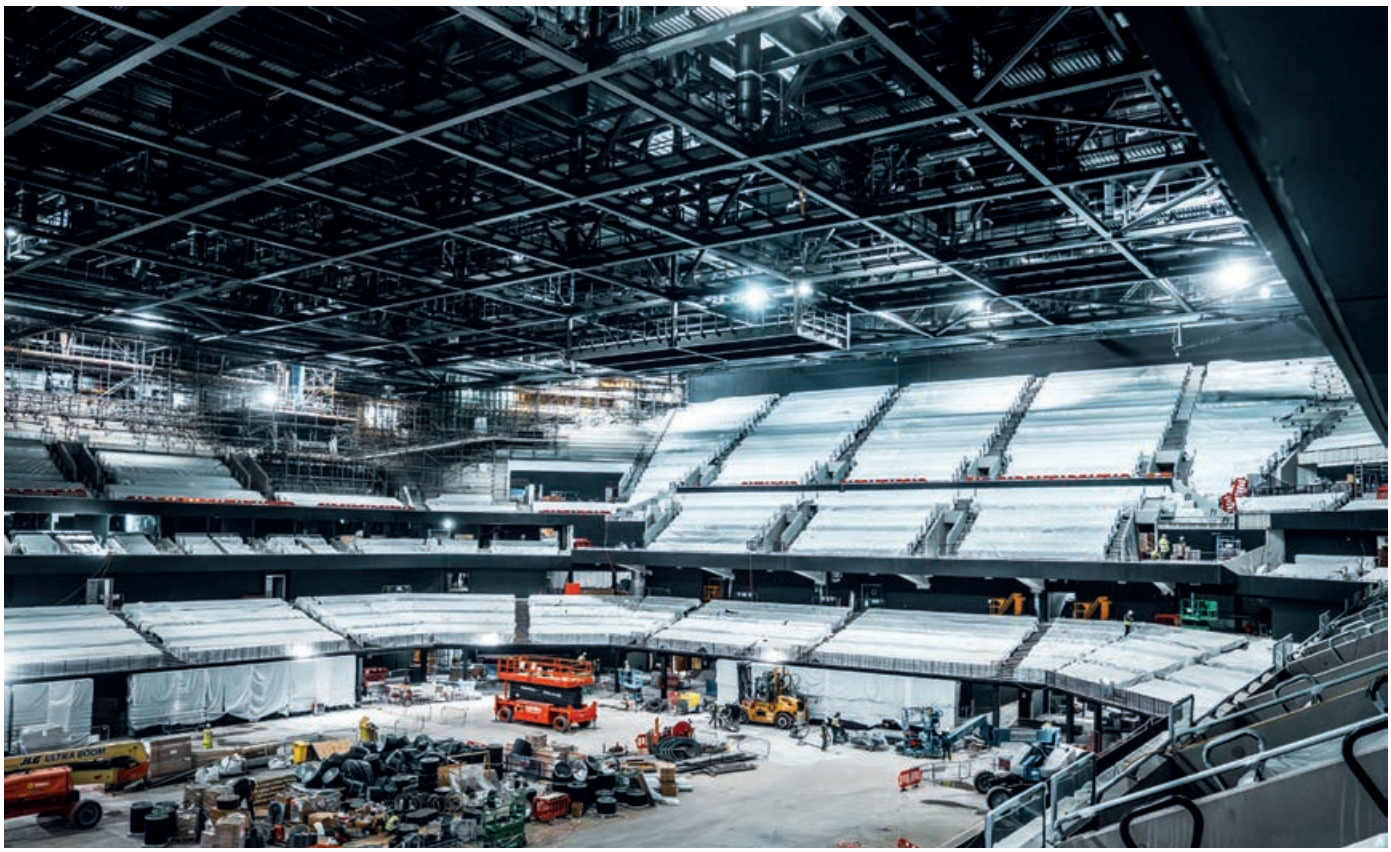
The Clarice Pears Building at the Institute of Health and Wellbeing in Glasgow is a braced steel-framed structure incorporating a number of sustainable features, such as roof-mounted PV panels.

Steelwork was chosen because the design brief required a lightweight building with minimal internal columns.

The round floor of the building has been designed as a marketplace, where social, learning and gathering spaces create informal work zones interlaced with teaching hubs.

Above this area, spread over the uppermost floors, are numerous teaching areas. At the centre of the building, a four-storey internal atrium is surrounded by complex projecting cantilevering balconies, which have been efficiently formed through the use of structural steelwork.

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



Co-op shops with steel

Structural steelwork has helped create the UK's largest indoor venue, which boasts a 23,500 capacity alongside 41 bars and restaurants

With the largest floor space of any UK indoor venue and a significantly lower ceiling, the Co-op Live's tiered seating allows fans to be closer to the artist. Unlike venues designed primarily for sporting tournaments or public exhibitions, the arena is also claimed to be the first of its kind to be built around concert acoustics.

In accordance with the client's brief, sustainability was at the heart of the project's construction. The venue, which has been designed to support Manchester's Zero Carbon 2038 commitments, includes numerous sustainability features to create an inclusive, low-carbon and low waste structure.

The building is powered entirely by electricity with no reliance on fossil fuels, while renewable energy purchased from the National Grid will be supplemented by the large photovoltaic array mounted across 10,500 sq m of roof.

▲ Three-tiered seating has flexibility to wrap around the bowl

The venue is a large steel-framed structure that is set out on a regular 8.5m column grid pattern. It comprises steel members supporting precast terrace units for the seating areas. Below these, horizontal beams support a composite metal decked flooring to create the circulation and concession zones.

Stability for the steel-framed structure is provided by the arena's seven precast concrete cores, which work in conjunction with some strategically located internal bracings.

Award: Co-op Live Arena, Manchester
Architect: Populous
Structural engineer: Buro Happold
Steelwork contractor: Severfield
Main contractor: BAM Construction
Client: Oak View Group

A 100m-clear spanning roof forms the dramatic focus of this state-of-the-art purpose-built black box performance venue. Skilfully controlled surrounding spaces are defined, but never dominated, by the expressed structure that creates them. Built to exacting standards, this is a holistic and architecturally confident solution of high quality
SSDA judges

Around the bowl, the arena is predominantly three-tiered, with the middle tier containing hospitality boxes. The exception is the east stand, which accommodates the stage for concerts but also has a single upper tier of seating. This adds flexibility, as the stage can be removed where events require the central standing area of the bowl, allowing the seating to wrap around the four sides.

Once the main bowl superstructure had been completed, the roof steelwork was installed. Due to site constraints, this was brought to site in small components, assembled into larger sections on the arena floor and then erected from within the building's footprint.

The size of these components was dictated by the size of crane that could be rigged safely within the bowl's footprint, combined with the requirement for it to be subsequently derigged underneath the completed roof structure.

A series of 100m-long trusses, each capable of supporting approximately 30 tonnes of equipment, make up the roof.

"As well as forming the roof, all of the trusses are also supporting walkways, rigging strong-points and a host of important equipment for the lighting and sound," explains Buro Happold partner Rob Amphlett. "The roof is a machine that enables the various productions. It is also the engine room of the arena."

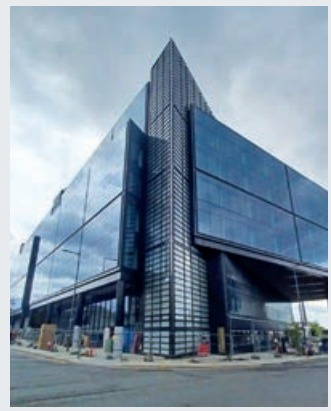
Because of the short design programme, the team adopted a strategy of suspending most of the building services beneath the steel floor beams and composite decks. Meanwhile, the venue's location close to residential buildings, meant the roof cladding had several strict acoustic requirements.

An offsite solution was used, with acoustic cassettes that slotted into the main roof steel structure. Metal decking and a concrete topping was then added to the top of the acoustic liner to carry waterproofing and the photovoltaic units.

▼ The roof steelwork was erected from inside the building

Capital design

Two office blocks form an integral element of a new multi-use destination in central Edinburgh



Commendation: Haymarket, Edinburgh
Architect: Foster + Partners
Structural engineer: Arup
Steelwork contractor: BHC Ltd
Main contractor: Sir Robert McAlpine Ltd
Client: Qmile Group, M&G Real Estate

The 1.6ha Haymarket development includes three Grade A office buildings, a 190-room hotel and a 172-room aparthotel, alongside future provision for retail and leisure space.

Two of the office buildings, known as Buildings Four and Five, are separate steel-framed structures that are connected by a full-height 12m-wide glazed atrium.

Both have been designed to span over the railway tunnels that serve the adjacent railway station.

The southern portion of Building Four spans directly over the station's northbound tunnel. Its central, 16m-wide office floorplate is formed with columns that are supported on piles founded either side of the tunnel.

Building Five, which sits above the adjacent southbound tunnel, is partially supported by a Vierendeel truss, positioned from level three to level seven, that spans the 30m distance over railway infrastructure.

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

PHOTO: GARY BRITTON

Retain and redevelop

A steel-framed office and retail development combines a retained facade with a new modern interior

Commendation:
One Great Cumberland Place, London
Architect: Allford Hall Monaghan Morris
Structural engineer: AKT II
Steelwork contractor:
Bourne Group Ltd
Main contractor: Galliford Try
Client: The Portman Estate

Located directly opposite the Marble Arch monument, a 10-storey development behind a retained facade has significantly upgraded a building originally built in the 1920s.

The project has created three floors of retail space and seven floors of high-quality Category A office space.

Once demolition was complete, a temporary retention system for the facade was installed and the existing basement enlarged into a two-level subterranean area.

New steelwork connects to the retained facade's steel columns via bolted connections and provides the support for the old structure.

The majority of the new structure's steel beams are fabricated plate girders with bespoke cells to accommodate the building's services within their depth.

The exposed steel interior of the office plates presents a modern and industrial-looking environment.

Other National Finalists

- Allerdene Bridge, Gateshead
- Battersea Power Station Phase 3B, London
- Devon Place Footbridge, Newport
- Maggie's Royal Free Hospital, London
- Plot 7B New Bailey, Salford
- Sky Studios Elstree, Borehamwood
- Tommy Taylor Memorial Bridge, Barnsley

Aesthetics in the frame

Comprising 19 floors above ground, Paddington Square has been designed as a visually striking structure with a significant portion of its steel frame left exposed

Commendation: Paddington Square, London
Architect: Renzo Piano Building Workshop, Adamson Associates
Structural engineer: WSP
Steelwork contractor: William Hare Limited
Main contractor: Mace
Client: Great Western Developments Ltd

Steelwork was chosen for the Paddington Square commercial project to fulfil the design aesthetic of a transparent frame.

This not only includes exposed beams and columns within the building's interior, but also an expressed exoskeleton that can be viewed through the structure's glazed elevations.

As the steel and connections are on view in the building, a high-specification fireproofed paint with a quality finish was specified.

As well as the aesthetic qualities of steelwork, the material was chosen to provide the best framing solution to achieve the required spans and long column-free areas within the development.

This is most noticeable on the ground floor, which includes a large column-free reception space, terrace and workspace.

All of the perimeter columns are circular hollow sections, which were chosen for their aesthetic visual qualities.

PHOTO: HUFTON AND CROW

PHOTO: PHILIP VILE

Reused steel adds sustainability

A 1980s-built office block has been redeveloped with reclaimed steelwork making up one-third of the overall steel tonnage

Merit: Holbein Gardens, London
Architect: Barr Gazetas
Structural engineer: Heyne Tillett Steel
Steelwork contractor: Cleveland Steel and Tubes Ltd
Client: Grosvenor

Holbein Gardens has been redeveloped with the addition of a two-storey steel-framed extension and a rooftop terrace to the existing four-storey building.

According to the client, the project was committed to circularity and prioritised retention over demolition. This was achieved by retaining the existing concrete frame, while the new areas of the building utilised low embodied carbon materials.

The scheme, one of the first to champion this level of circularity, became Grosvenor's flagship sustainability project and first net zero development.

The process of designing with and sourcing reclaimed steelwork has demonstrated how reusing steel can be achieved within a standard procurement route.

Approximately 9 tonnes of steel was obtained from other Grosvenor sites in London, with the remaining 16 tonnes procured from reclaimed stock.

When digital literacy generates social value

David Comiskey FCIOB, reader at Belfast School of Architecture & Built Environment at Ulster University, on the development of a virtual campus. By **Nicky Roger**

BRENDAN GALLAGHER

What are you working on at present?
Most of my time of late has been spent working on our Ulster University Virtual Campus initiative, a project currently funded by the Department for the Economy in Northern Ireland.

This is a student-driven project, originating from undergraduate research, which uses a digital workflow to create immersive 3D virtual replicas of key spaces across all three Ulster University campus locations in Northern Ireland.

A particular focus has been placed on developing important spaces from an accessibility and wellbeing perspective. This work is important within the broader national trend of increasing numbers of students reporting having a mental health condition – and within a Northern Ireland context, where the number young people experiencing mood disorders is higher than in other parts of the UK. Virtual exploration before physically visiting campus locations helps prepare pupils for transition thus alleviating anxiety and raising aspirations.

The workflow involves the use of laser scanning technology to capture spaces which are then modelled or

◀ David Comiskey: 'We wanted to be innovative in our thinking'

This is a student-driven project, originating from undergraduate research, which uses a digital workflow to create immersive 3D virtual replicas of key spaces
David Comiskey, Ulster University

updated in Autodesk Revit software before high-quality visual and virtual reality (VR) outputs are developed, all hosted on a bespoke university webpage. While this workflow allows for outputs to be viewed in VR using high-end headsets, importantly, it supports the use of more affordable viewers, which is important for reach.

What is new about this research?
A range of existing options were explored. These included the use of static images, videos, 360-degree imagery and 3D space capture solutions. However, we wanted to be innovative in our thinking, predicting the likely expectations of the next generation of learners.

This led the team to consider the possibilities around new learning environments and the metaverse concept, along with the opportunity for the gamification of spaces from the perspective of both learning and space familiarisation.

The outputs developed have not only fulfilled the main ambition of virtual exploration but also enabled this related work. Exploratory studies have included developing immersive 3D virtual meeting spaces, a game based on a Revit model output 'Virtual Campus the Experience' and a generative design plug-in which uses model outputs for space layout planning, determining optimum positioning within an educational space for students with specialist requirements. The innovation of this project is its relative simplicity, using existing platforms and applying them within a workflow which is transferable.

CV: David Comiskey FCIOB FCIAT

- **Reader, Ulster University, 2023 to present**
- **Certified Passive House consultant, 2021**
- **Senior lecturer, Ulster University, 2016-23**
- **National teaching fellow, 2017**
- **Lecturer, Ulster University, 2009-16**
- **Course director and lecturer in Architectural Technology, Southern Regional College, 2006-09**

Why is it important to the construction industry?
Firstly, it demonstrates an innovative and transferable approach to asset management, demonstrating how a client can take an as-built model and use it to help end users become familiar with new environments before physically visiting.

This can be done in several ways (via VR outputs, 3D virtual meeting spaces or gamification), depending on the intended building use and the end user demographic. Subtly, the project is also a reminder that individuals have differing needs, promoting a sense of empathy and helping to reinforce the positive work which has taken place around mental wellbeing in recent years.

The Ulster University Student Success Centre has purchased 1,000 VR viewers to distribute to incoming first-year students who have indicated a disability or neurodiversity, as well as those who experience heightened anxiety. These will play a crucial role in supporting their transition.

With this project being driven by built environment students, it develops some of the key skills we want to see from those entering the industry in terms of an innovative approach to problem-solving, creative thinking and sound digital literacy skills. It demonstrates, in a small way, the importance of social value via a desire to make a positive impact on the lives of others.

The importance of the project is evidenced by the recognition it has gained, recently winning the award for Digital Innovation in Asset Management at the Digital Construction Awards.

Where do you see related future opportunities?
Related work stemming from this project has highlighted the collaborative opportunities which exist between the built environment sector and the creative industries, especially around game design.

While the concept of gamification is not new to the built environment sector, the ability to bring model outputs into game engines in a relatively seamless manner creates additional opportunities for exploration.

To exploit this, collaboration between the built environment and creative industries is important, and indeed is already taking place in some organisations.

At Ulster, we are encouraging such collaboration, and have developed the Digital laBorAtory initiative , which is aimed at developing digital literacy skills for students including a collaborative activity focused on gamification.

SCAN ME

To visit the Virtual Campus webpage and experience the spaces please scan the QR code.

If you're interested in academic membership visit www.ciob.org/membership/become-a-member/educator.

CIOB Community

Members of Tomorrow's Leaders take a backstage tour of St Paul's Cathedral

Heritage skills on show at St Paul's Cathedral tour

Tomorrow's Leaders take a behind-the-scenes look to learn about heritage work in progress

To keep our heritage alive we need to appreciate these buildings more and understand how to preserve and maintain as well as start to plan for the skills we need to make this happen
Anjali Pindoria, Tomorrow's Leaders

Tomorrow's Leaders (TL) in London took a trip to St Paul's Cathedral in summer to learn more about the work that goes on to preserve and maintain the building.

Rebecca Thompson, director of property at the cathedral and CIOB past president, and works project manager Craig Needs took Anjali Pindoria and members of TL on a behind-the-scenes tour showing how the building is cared for – including in-house workshop space showing the skills of the staff.

Pindoria said: "I was so fortunate to see beyond the public eye the rich heritage that makes the cathedral what it is."

She added: "To keep our heritage alive we need to appreciate these buildings more and understand how to preserve and maintain as well as start to plan for the skills we need to make this happen.

"The sheer dedication the St Paul's staff have in doing just this to keep our history is a service that we should all be thankful for, whether in the industry or not."

CIOB launches new HS&W Advisory Panel

David Bucksley to chair the latest CIOB Advisory Panel, which will meet for the first time in November

CIOB has finalised its Health Safety and Wellness Advisory Panel. It joins others in sustainability, heritage, innovation, quality, EDI, global and UK to provide expert knowledge on key policy priority areas in line with CIOB's corporate plan, at a global, national and regional level.

The panel is chaired by David Bucksley (pictured), health, safety and wellbeing director at Sir Robert McAlpine.

He said: "What a pleasure to spend time with such an amazing group of industry professionals from different parts of the sector. I am honoured to be chairing such a worthwhile group, with such an important platform to improve the construction industry."

Bucksley said its mission is to:

- improve HS&W in all areas of construction (man and van to tier 1 and everything in between);
- improve the image of construction – to help attract a wider and more diverse talent pool;
- support public interest – more people work in construction than any other industry in the UK; and
- represent CIOB in HS&W matters – moving forward and providing competent advice to members, non-members and key stakeholders.

The panel will confirm its focus at its first meeting in November. Bucksley said this is likely to include: wellbeing and mental health; the effectiveness of CDM; the effectiveness of the HSE; competence – the skills gap; technology and HS&W; behaviour and psychological safety; and the provision of general HS&W support material for both members and non-members.

Bucksley said his goal for the group is to be "accessible for industry" and he is working on a comms plan.

"We will be linking into and promoting the fantastic work that is already happening around some key areas, such as the excellent work that the tier 1 Health and Safety Leadership group is doing around fatal risk categories, and the work the Construction Leadership Council and Mates in Mind are supporting around proactive controls to improve mental health in construction.

"We will be reaching out to all key stakeholders in due course to help join the dots."

See more on the other panels at https://construction management.co.uk/experts-picked-to-chair-ciob-advisory-panels.

Apprentice of the month

Olivia Mills, trainee surveyor at Higgins Partnership, is CIOB's July apprentice of the month

My favourite is approaching completion. It's really satisfying to see all the hard work actually manifest into something
Olivia Mills

What made you choose this industry?
For A-levels I did maths, economics and geography and I felt they pointed towards the built environment. I've always been really interested in property and land use and surveying encompassed all of it.

What technological advances in the sector are you most excited about?
Drones are really exciting, especially as a training surveyor.

When I do my valuations there might come a time where I won't have to walk about on site and I could use a drone to show me what I want to look at – or even if the drones were to have measurement technology so you could do all your valuations from wherever you are.

What would be your dream project to work on in the future?
I'd like to do some really luxury high-end hotel builds. Being able to look at it from much more of a quality point of view than a cost point of view as well would be really nice.

One piece of advice that you would give to someone enrolling onto a construction apprenticeship?
Get involved in absolutely everything you can, whether it be going up the crane or going on site. Also be really patient with yourself. There's so much knowledge that you've got to have. I'm 20 years old and I'm competing with people that have been doing construction exclusively for 20 years.

What are your future career ambitions?
Within the next 15 years to reach being a commercial manager. I'd have to go now from being a trainee to an assistant to surveyor, senior surveyor, regional surveyor and commercial manager.

I think that's quite realistic. Depending on my experience, I'd probably quite like to start my own company, whether in surveying as a consultant, or as a subcontractor. Find a little niche in the market.

What is your favourite stage of a project and why is that your favourite bit?
My favourite is approaching completion. It's really satisfying to see all the hard work actually manifest into something.

Obviously you have so many issues and problems that you have to go through during the whole process, but actually seeing it all come together at the end is all worthwhile.

CIOB signs up The AA as first expert partner

CIOB initiative will provide new membership benefits for company members

CIOB has introduced an Expert Partners initiative as the latest addition to its membership benefits for company members. It has announced The AA as the first of these partners.

This collaboration highlights the shared commitment of both organisations to support company members and enhances the overall value proposition for those involved in the construction industry. More expert partners are in the pipeline.

This follows the recent introduction of new standards set for chartered companies. These standards have reinforced the credibility of company members to clients and have also driven an increase in demand for company membership, particularly in light of regulation changes within the construction industry.

Being a CIOB chartered company offers numerous benefits, including enhanced professional recognition, access to cutting-edge industry knowledge and exclusive networking opportunities.

Expert partners will provide value through opportunities, business support and cost savings that are tailored to the needs of company members.

For more information on company membership, eligibility, or to hear more about the Expert Partners initiative, contact CIOB senior business development manager Helen Patel at hpatel@ciob.org.uk or call 01344 630746.

CCG Group signs up its latest generation of new apprentices

CIOB training partner has been advancing the careers of young tradespeople for 30 years

The 2024/25 CCG Group apprentice intake will mix onsite learning with college theory

CCG (Scotland), a CIOB training partner, has welcomed 10 new trade apprentices, reaffirming its dedication to the next generation of skilled professionals in the Scottish construction sector. This intake brings the number of apprentices employed across CCG's group of companies to 48.

Based in Glasgow, CCG (Scotland) is one of the country's largest construction and manufacturing group. It is celebrating its 50th anniversary in 2024.

The company, which employs 730 staff, has long been recognised for its commitment to skills development, maintaining an annual commitment to provide apprenticeship opportunities and shape the careers of young tradespeople for over 30 years.

The new recruits, aged between 17 and 18, will undertake a four-year industry-recognised programme to become qualified plumbers, joiners, electricians and heating engineers.

They will undertake a mix of practical onsite learning with CCG's Main Construction and Asset Management divisions, as well as M&E subsidiary company, Arc-Tech (Scotland), and lecture-based theory at colleges including South Lanarkshire College , Glasgow Kelvin College and West College Scotland.

CCG managing director David Wylie said: "I am delighted to welcome our 10 new recruits to the CCG family. Over the next four years they will acquire invaluable skills that will serve them throughout their careers, thanks to hands-on experience on some of the country's most innovative and pioneering construction projects.

"Despite the significant pressures in the affordable housing market, our commitment to training young people remains. Our focus on skills development must go hand in hand with support for the affordable sector in order to secure employment for future generations."

Ten trainees are also in full-time employment in specialisms including quantity surveying, estimating and business administration.

> **Over the next four years the new recruits will acquire invaluable skills that will serve them throughout their careers**
> **David Wylie, CCG**

CIOB joins industry leaders at Kent EXPO

Institute will be one of the exhibitors at the south east's largest event for construction professionals

CIOB will be one of 180 exhibitors at the Kent Construction EXPO – the largest event for construction professionals in the south east – on 3 October.

The event, now in its 10th year, will see over 1,000 attendees. Among those taking stands this year are leading industry names Willmott Dixon, Baxall Construction, GSE Group, Kier, Jenner, Morgan Sindall, DHA and Abbott Construction.

This year over 20 discussion sessions are planned, covering a wide array of topics within four key conference streams: digital construction, sustainability, the Building Safety Act and procurement.

Networking opportunities include Meet the Buyer opportunities, a Networking Breakfast and the Gala Dinner – which sell out every year.

The EXPO is growing annually: the 2023 event saw a 15% increase in attendees compared to 2022, continuing a trend of 10% annual growth since Revolution began staging the event in 2018.

Visitor surveys showed that 97% of attendees reported that the event met their objectives, while 98% indicated they would consider doing business with an organisation they met at the EXPO. Additionally, 98% expressed a desire to return to future events, underscoring the lasting value of the connections made.

The EXPO takes place at the Kent Event Centre, near Maidstone. Register at https://kentconstructionexpo.com.

▼ Kent EXPO offers a variety of networking opportunities

JOHN KNIGHT PHOTOGRAPHY

One to watch

Natalie Finnigan MCIOB, associate director at Concertus and committee member for the Ipswich Hub

> **I love the people: a good project takes such a diverse range of skills and personalities to be successful**
> Natalie Finnigan

Why did you choose construction as a career?
While at university doing an Economics with Accountancy degree I got an admin job on a building site to help support myself through full-time education. I really enjoyed the work and ended up staying throughout my degree.

Seeing the variety of roles available gave me a deeper understanding of what the career would entail and a determination that I'd found the right path for me. When I graduated, Kier supported me through a conversion qualification to become a qualified quantity surveyor.

After 13 years with Kier my personal circumstances changed and an opportunity came to move from main contracting into consultancy and I took it. I'm now at a level where I get to combine teaching with the day job and can support the next generation of surveyors and project managers into the industry.

What do you love about the industry and what would you change if you could?
I love the people: a good project takes such a diverse range of skills and personalities to be successful that you can't help but appreciate the teamwork. I also enjoy working in the public sector as every project has a meaning and benefits the communities we live in.

The only thing I could think to change is the perception that the industry isn't a positive place to work. There are a lot of good people working hard at their chosen profession, and who do it extre§mely well, but there is still a way to go and still a lot of work to be done to ensure people who do not meet the necessary performance standards are held to account for poor work or behaviours.

That said, the industry has come a long way over the past 25 years, even if the journey is not yet complete.

What do you do in your spare time?
I'm a single parent, which takes up much of my spare time, but I've always loved to dance so in 2023 I took up ballroom and Latin dancing as a new challenge, including entering a few competitions along the way. Soon I'm off to dance in Blackpool which will be a whole other level of glitter and glamour – very different to my day job!

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Housing, MMC, fitness and recycling for eastern members

Hubs enjoy summer of site visits

CIOB members in the Eastern Region had a busy summer of events. Cambridge Hub members attended a progress visit to Willmott Dixon's Northminster residential project in Peterborough (pictured below), while Chelmsford Hub members toured three sites: British Offsite in Braintree, the Epping Leisure Centre site and Martells Quarry near Colchester.

At the British Offsite visit members had the chance to view the advanced robotics assembly line and observe how UNisystemSFS infill panels and UNisystemLB light gauge steel systems are precision manufactured.

At Epping Leisure Centre, members checked in on progress on the project – which includes a six-lane, 25m swimming pool and a 15m learner pool with a movable floor. Pellikaan Construction kindly hosted the visit at this site.

At Martells Quarry, a leading site in the circular economy movement, members witnessed first hand how waste materials are transformed into valuable resources through innovative recycling processes.

Hole in one for fun and charity

CIOB in Northern Ireland enjoyed a golf day and summer barbecue in August at the DoubleTree by Hilton in Templepatrick.

Over 40 golfers from teams at Farrans, Heron Bros, Geda Construction, Titan AC, AEM, Hays, Training LMS, ICW, Tughans, McAleer & Rushe and ABL took part.

As well as prizes sponsored by AEM, Incrementum and JMD Training, this was the first year that the winning team and individual also received perpetual trophies.

In the evening over 60 guests attended a barbecue.

Nearly £400 was raised for CIOB Assist.

Correction
In the September issue of *Construction Management* on p60 in a list of CIOB Graduates Patsy Creaven's name was incorrect. We are sorry for any upset caused.

Professionalism, quality and integrity

Garrick Rose from Nixey Powell Partnership shares its journey to chartered company

The journey to achieve chartered company status has been a transformative experience for Nixey Powell Partnership. It has reinforced our commitment to professionalism and integrity in every project. This accreditation is more than just a badge; it represents a shared set of values that guides how we operate and engage with clients and partners.

We have experienced several benefits as a chartered company.

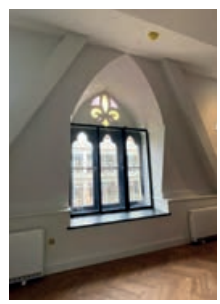
- **Competitive advantage in a crowded market:** Being chartered has given Nixey Powell Partnership a clear edge when bidding for projects. For example, when we were competing for a refurbishment project for a local authority, the client expressed that it was particularly reassured by our chartered status, which it felt spoke to our commitment to ethical practices and high standards.
- **Strengthening credibility and trust:** It has reassured clients that we are committed to delivering the highest quality of service. After completing a challenging restoration project for a Grade II-listed building, the client gave us this feedback: "Knowing that [Nixey Powell] adhere to the standards of the CIOB reassured us at every step. It wasn't just about meeting deadlines or budgets, but about knowing we were working with a team that values integrity and quality as much as we do."
- **Leveraging CIOB resources:** We have access to a range of resources and support from CIOB, including the marketing toolkit, individual mentoring services, and discounted CPD courses. The status also affords networking opportunities provided by CIOB.
- **Commitment to continuous Improvement:** This is reinforced by CIOB's requirement for independent assessments every five years and ensures we meet the high standards expected of a chartered company from governance and quality management to health, safety and environmental sustainability.

I feel a deep sense of pride in how far we've come on our chartered journey. It's not just about the accreditation but about what it represents: a commitment to doing things the right way, even when it's not the easiest path. It has shaped not just how we do business, but how we see our role in the broader construction community: as stewards of quality, integrity and innovation.

An extended version of this article can be found at www.linkedin.com/pulse/unlocking-new-levels-trust-credibility-uxlle.

◀ The Grade II-listed building, on Manchester's King Street, retains its heritage features

▼ Secondary glazing enhanced the building's EPC



New thinking on heritage build

Chartered builder **RECOM Solutions** on how turning a listed city-centre building into residential property offered the opportunity to trial new methods

Kingsgate House, a £6m project on Manchester city centre's iconic King Street, was undertaken by RECOM Solutions as the principal contractor on behalf of asset manager DTZ Investors. This project stands as a testament to overcoming complex development challenges.

Kingsgate House has been converted into 24 one- and two-bedroomed flats across four floors, with additional ground floor and basement ancillary areas.

Prior to RECOM's involvement, the building consisted of three separate structures merged into one, resulting in varying levels throughout. This complexity required meticulous planning and design to ensure a smooth construction phase.

Working on a city-centre development always presents logistical challenges, but RECOM's forward planning and collaboration with local authorities ensured suitable solutions for access and egress.

The redevelopment of the 2,230 sq m Grade II-listed building involved stripping it back to its shell and repurposing it. Key improvements included creating new entrances, ancillary spaces, cycle storage and plant areas. A new flat roof was installed, existing external windows were refurbished with secondary glazing and LED lighting was fitted in the apartments to enhance the building's Energy Performance Certificate (EPC) rating.

Significant effort was made to retain the building's heritage features, such as the original joinery, staircases and handrails. New mechanical and electrical systems, including a lift, electric heating and sprinkler systems, were also integrated.

The development was undoubtedly challenging but provided an invaluable opportunity to trial new working methods. Techniques such as LIDAR surveying were implemented

RECOM's team successfully navigated these challenges. This development was undoubtedly challenging, but it provided an invaluable opportunity to trial new working methods. Techniques such as LIDAR surveying and online automated services like Field View were implemented, alongside industry-leading programming software. The RECOM team has come out stronger and more knowledgeable in all avenues. Operationally it has been a great building block for the supply chain but also commercially it has established successful methods of procurement and accounting procedures.

Jason McKnight, RECOM's director, emphasised the importance of maintaining the building's heritage and character throughout. He highlighted the collaborative effort between RECOM, AEW Architects, planning consultancy Savills, project manager CogentBC, surveyor Gateley Vinden and Manchester City Council's planning and conservation officers.

The apartments, developed for rental, are set to be brought to market by property management company Urbanbubble.

Holly Witcomb, associate director at DTZ Investors, expressed her satisfaction with the project, noting the high level of specification and the character features.

The project stands as a testament to RECOM's expertise in executing complex development projects. Despite the challenges, the team's innovative approach and dedication resulted in a successful transformation, enriching both the company's portfolio and Manchester's architectural landscape.

In association with BLUEBEAM A NEMETSCHEK COMPANY

Stay in the present

SMEs should be investing in technologies that already exist to embrace digitalisation, says **Bluebeam**

In the face of economic pressures and increasing project complexity, digitalisation is no longer optional for construction companies – it is a necessity.

But, as usual with technology, the debate often jumps a few steps forward and ignores the benefits that can be achieved today. For example, recent discussions have focused heavily on the potential of artificial intelligence (AI) to revolutionise the construction sector. While it offers clear benefits, the reality is that many companies are still navigating the implementation of existing technologies, from cloud-based computing and software as a service (SaaS) to building information modelling (BIM) and digital twins.

While AI is poised to play a larger role in the future, the current emphasis should be on how companies can effectively use the technologies available today. Working with CIOB, Bluebeam has developed a guide to help, outlining how construction technology can improve operations, boost efficiency and deliver better project outcomes.

Real-world benefits

"Generally speaking, digital tools help streamline workflows and reduce administrative burdens," explains James Chambers, director of global industry development in the Build and Construct Division at Nemetschek. "This can lead to significant time savings and more effective project delivery."

He shared an example from Bluebeam customer Kori Construction, which has significantly improved efficiency by adopting cloud-based processes and developing workflows that minimise inputs, going for a standardised approach.

Even something simple, such as shifting from marking up a paper drawing to a digital alternative, makes project design decisions easier to track and identify

He says: "This shift has sped up processes and minimised errors. It also effectively connects project sites and the office, allowing their teams to work together in real time and maintain accurate and up-to-date project information in one centrally available location."

A necessary investment

Businesses in construction are bearing the brunt of a challenging economic environment. However, by investing in the right technologies, they can not only stay competitive but also improve productivity, safety and overall project outcomes.

Digital tools enable better risk management through proactive monitoring and data analysis. This reduces the likelihood of costly errors, delays and compliance issues, ensuring smoother project execution. Even something simple, such as shifting from marking up a paper drawing to a digital alternative, makes project design decisions easier to track and identify.

Moreover, technologies can help to optimise workloads, improve health and safety and look after employee mental wellbeing – crucial at a time when skilled labour is in short supply.

Real-time monitoring and data analysis through workforce management software can also help to prevent accidents and ensure that compliant work is being delivered by people with the right competencies and skills.

To find out more, download the latest technical paper from Bluebeam via: https://ciob.me/digitech.

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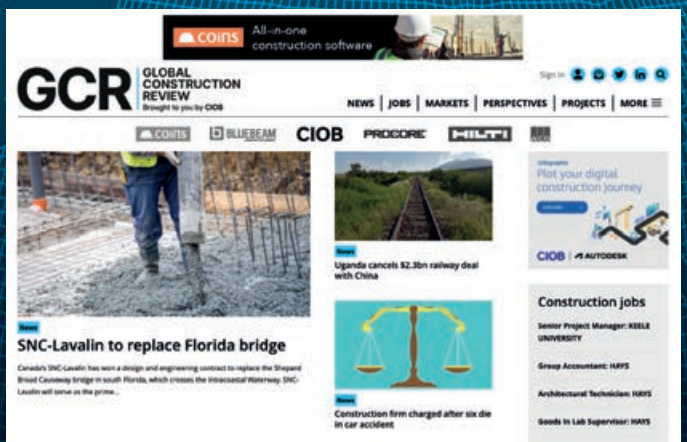

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Diary dates

Highlights of the CIOB Calendar for the coming month

Seminar on CBAM
▶ 9 October, 4-5.30pm, Belfast
Commercial law firm Tughans will explain the implications of the Carbon Border Adjustment Mechanism (CBAM).

The UK's CBAM, implemented from 2027, is a policy aimed at reducing carbon emissions by imposing tariffs on imported goods that do not meet the UK's environmental standards.

It targets the reduction of embodied carbon emissions – those emissions produced during the manufacturing and transportation of building materials.

The EU CBAM, which becomes fully operational in 2026, will impose charges on the importation of goods in the iron and steel, aluminium, cement, fertiliser and hydrogen sectors, as well as on imports of electricity.

Maria O'Loan and Paul Eastwood will provide an overview of both EU and UK regimes and identify the risks, opportunities and challenges to the sector as well as steps to mitigate any adverse impacts.
Contact: jfitzsimmons@ciob.org.uk

Site visit: Britcon/Technicut
▶ 9 October, 11am-12pm, Catcliff
Join us for a visit to the site where Britcon is building a state-of-the-art facility on the former Orgreave Colliery, South Yorkshire.

Britcon is working on behalf of Harworth Estates to build a 7,500 sq m unit for Technicut, a specialist in drilling for the aerospace industry. The £9m project started in June 2024 and is to complete in March 2025. Britcon aims to achieve a BREEAM Excellent status.
Contact: msimons@CIOB.org.uk

CIOB in Scotland Awards Lunch
▶ 11 October, 1-5pm, Glasgow
Join us at the DoubleTree by Hilton Glasgow Central to network with industry leaders, enjoy a delicious meal and applaud outstanding achievements in the sector.

The event will be hosted by Nicky Marr and guest speaker is Keith Farnan. We also invite MCIOB and FCIOB members who have achieved their designation this year to stand up and be recognised for your achievement by our CEO.
Contact: wmarshall@ciob.org.uk

Site visit: Dover Maison Dieu
▶ 17 October, 2-4pm, Dover
The Grade I-listed Maison Dieu (Dover Town Hall) is undergoing a £10.5m restoration by Coniston.

This project sees the recreation of internationally significant decorative schemes by Victorian neo-gothic architect William Burges, a new street-level visitor entrance to the Connaught Hall and improved access throughout. Redundant spaces are also being brought back into commercial use.

Once complete, the Maison Dieu will be permanently open to the public for the first time in its 800-year history. This is the final visit prior to handover.
Contact: blawrence@ciob.org.uk

Sites and social: Glasswater Locks
▶ 17 October, 4-8pm, Birmingham
Join Midlands Tomorrow's Leaders for a unique site visit and social at Glasswater Locks and STEAMHouse.

The event begins with a visit to the Glasswater Locks sales and marketing suite, where you'll learn about the urban brownfield regeneration masterplan from Berkeley Group, hear about progress made and discover the area's fascinating history.

There will be a guided site tour from a safe distance, with an opportunity to ask questions to the delivery team.

We will then move on to the impressively renovated home of STEAMHouse to engage with leading industry stakeholders with insights into career pathways from across the sector. All this with free drinks and pizza too!
Contact: gfloyd@ciob.org.uk

Site visit: Caerphilly Castle
▶ 30 October, 3-5pm, Caerphilly
Join us for a guided tour of the ongoing work at Caerphilly Castle. Contractor John Weaver is carrying out phase one, improving the inner ward of the castle.

This will include refurbishment of the medieval Great Hall, the installation of visitor access paths and ramps and the construction of a wildflower garden.

Phase two starts in 2025 and includes a visitors' centre. We will return to view this stage next year.
Contact: vcoxon@ciob.org.uk

For a full list of events and to register visit www.ciob.org/events.

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