CIOB
The Chartered Institute of Building

CONSTRUCTION MANAGEMENT

JANUARY 2022
constructionmanagement.co.uk

CREATING PEOPLE'S DREAMS

CM READERS TELL US WHAT THEY LIKE MOST ABOUT A CAREER IN CONSTRUCTION MANAGEMENT

SISK'S BANKING BONUS | TUBULAR STEEL STRUCTURES | BUILDING IN THE MALDIVES

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AUTODESK

Plotting your digital construction journey

Autodesk and the Chartered Institute of Building (CIOB) have teamed up to create this new infographic. It'll help you visualise your journey, create a roadmap and define your next steps - leading to better project outcomes.

View at: www.autode.sk/ciob-digital-journey

01/22
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Welcome

You may notice something a little different about this month's *CM*: we've freshened up our design and we've also made a subtle change to our name – we are now called '*Construction Management*'.

What's the thinking behind the change? Well, our old title, '*Construction Manager*', was considered by many to be aimed chiefly at the industry professionals who are based on site, managing project delivery. And while that is indeed the role of a sizeable chunk of our readers, there are plenty of others who do something different – clients, consultants, supply chain specialists, academics, legal and financial experts – but who are still involved in some way with 'construction management'.

So, we feel that our name change provides a better reflection of who our readers are and what they do. And in turn, we plan to make sure that the *CM* magazine and website content caters to all our readers, whatever area of construction management they work in.

To mark the name change and redesign, we've surveyed *CM* readers to find out a bit more about what makes them tick. We asked them what they like most about a career in construction management. Interestingly, the most popular option – chosen by almost two-thirds of those we polled – was 'creating a building or asset that the community benefits from', while around half said they liked 'working as part of a team' and the 'potential for a varied career'.

Construction may once again be wrestling with a skills shortage, but there's proof here that there's plenty to enjoy about a career in the industry. You can read the survey results in detail on pages 6-8.

Will Mann
Editor,
Construction Management and BIMplus

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Highlights of the CIOB calendar

SLAB/CARMODY GROARKE

FOURFIFTEEN

Wates wins role on automated British Library archive

Wates has won a pre-construction role on a groundbreaking British Library archive facility in Boston Spa, West Yorkshire. The fully automated, net zero building will be 28m high and covers 5,274 sq m, with 220km of bookshelf space and a public viewing gallery. The project will also involve a renovation of the 1970s brutalist-style Urquhart Building.

RMD Kwikform helps bring 'Hope' sculpture to life

RMD Kwikform's Rapidshor temporary works solution was used in the construction of the Hope Sculpture in Clyde Gateway, Glasgow. The 20m installation, which was unveiled to coincide with COP26 late last year, was built from cement-free concrete. It was designed by Steuart Padwick and built by Ramboll, Aggregate industries, Urban Union and Keltbray.

CIOB president elect Sandi Rhys Jones tells MPs' Women and Work group why construction needs a seat at the table, p48

Balfour Beatty Vinci employs Iranian refugee on HS2

A former Iranian refugee has found work with Balfour Beatty Vinci on HS2 after seeking a new career opportunity having studied for a master's degree in chemical engineering. Michael, 27, met Birmingham Ladywood MP Shabana Mahmood at HS2's Curzon Street station where she heard how 4,200 people are working on HS2 in the West Midlands.

ADAM DUKE PHOTOGRAPHY

Green walls can reduce heat loss by third

Retrofitting an existing masonry cavity walled building with a green or living wall can reduce the amount of heat lost through its structure by more than 30%, according to new research. The study has been conducted at the University of Plymouth's Sustainability Hub – a pre-1970s building on the campus.

Oasis Leisure Centre Swindon Grade II listed

Swindon's Oasis Leisure Centre, shown under construction in 1972, has been Grade II listed by Historic England and the Department for Culture Media and Sport following an application by the Twentieth Century Society after it faced the threat of demolition. Designed by Gillinson Barnett & Partners (GBP) and opened in 1976, it is defined by its 45m aluminium-framed dome – the largest of its type in Europe.

Dame Judith Hackitt awarded CIOB Honorary Fellowship

Dame Judith Hackitt has become the first woman to be presented with an Honorary Fellowship of the Chartered Institute of Building (CIOB). Dame Judith authored the Independent Review of Building Regulations and Fire Safety in 2018 following the Grenfell Tower fire. CIOB chief executive Caroline Gumble said: "In almost 200 years, CIOB has awarded less than 50 honorary fellowships, which demonstrates how very special this award is."

OTTO SAUMAREZ SMITH

‘Creating people’s dreams’

To mark the magazine’s relaunch, we surveyed CM readers on what they like most about a career in construction management. By **Neil Gerrard**

Creating buildings for the community, teamwork, and the potential for a varied career with the possibility of progression stood out as the three prime reasons why construction managers enjoy their careers.

The results came as part of an exclusive *CM* survey that highlights the many benefits a construction career can offer, as another busy year in the sector begins.

‘Creating a building or asset that the community benefits from’ was the most popular option chosen by professionals when asked what they enjoy most about a career in construction management, selected by 64% of the 236 respondents. That was followed by ‘potential for a varied career, with opportunities for progression including working abroad’ (50.4%) and ‘working as part of a team’ (49%).

Nearly a third (29.2%) also cited ‘learning about innovations such as digital construction and low carbon technology’ as a key reason for enjoying their career. Far less popular options were ‘the reward package’, selected by only 11.9% of respondents, and ‘job security’, which was selected by only 8.9%.

▲ Working as part of a team was the aspect of their career enjoyed most by 49% of respondents

Challenges

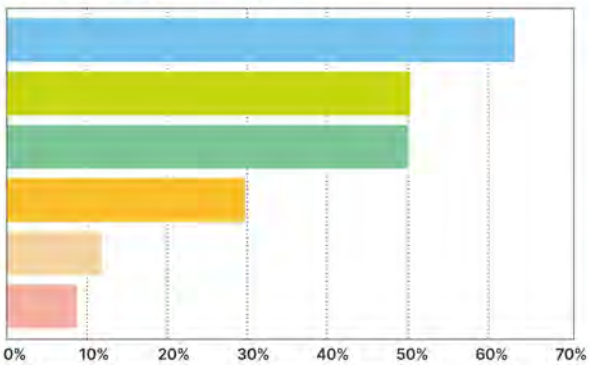
Meanwhile, finding the right skills among staff and suppliers was the clear leader when construction managers were asked about the biggest challenges they face in their career.

When presented with 10 different options and asked to select up to three, half (50%) of survey respondents opted to choose the issue of skills, highlighting the challenge of the past year when rising demand for construction projects, coupled with an ageing workforce and lack of skilled workers, have combined to make ▶

Percentage who said what they liked most about their careers was creating an asset the community benefits from

64

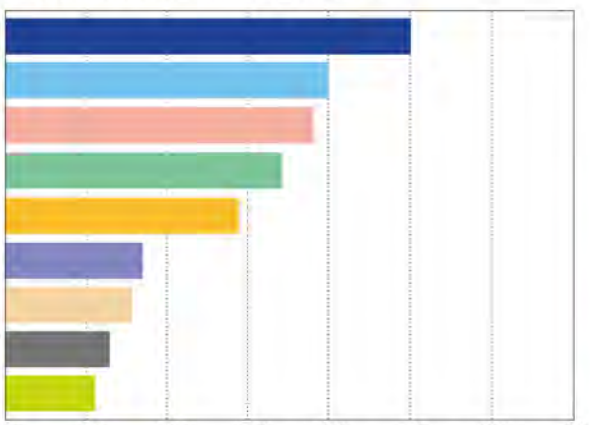
What do you like most about a career in construction management?



(Respondents could select up to three options)

- Creating a building or asset that the community benefits from
- Potential for a varied career, with opportunities for progression, including working abroad
- Working as part of a team
- Learning about new innovations, such as digital construction and low carbon technology
- The reward package
- Job security

What are the biggest challenges of a career in construction management?



(Respondents could select up to three options)

- Finding the right skills among staff and suppliers
- Delivering projects to the required quality
- Managing suppliers, including costs of materials and labour
- Keeping up with new legislation and regulations
- Technical challenges of the design and construction process
- Health and safety
- Adopting new BIM and digital technology
- Mental health
- Carbon reduction requirements

"No two days are the same and every day presents different challenges and opportunities. You work with a wide variety of people, where teamwork is essential and on many different types of projects. I love the fact I can walk past buildings I have been involved in and remember all the details and stories from the project."

Marc Burton, executive director, Garenne, and Construction Manager of the Year 2021

"It is a joy to lead a team who maintain and conserve the unique history captured in our buildings and landscape; enabling people to stand on the same ground as a Roman soldier on Hadrian's Wall, feel the faded splendour of our castles or walk in pilgrimage to one of our religious sites. It is a privilege to care for the places where the original custodians once stood."

Rebecca Thompson, senior estate manager, English Heritage

"The thing I really enjoy about my job is, oddly, the most challenging thing about my job – encouraging change. I play a large part in how my organisation meets and responds to the present challenges of our industry, whether it's sustainability, MMC and digitalisation, or driving procurement efficiencies – all these elements require a fundamental change in our culture and the way we do things. Being part of a team that is fundamentally trying to change the way our business and our industry operates is exciting and rewarding, and knowing that we are effecting positive change to people's lives and our environment is a recurring benefit.

Ayo Allu, director of design, technical and innovation at Clarion Housing Group

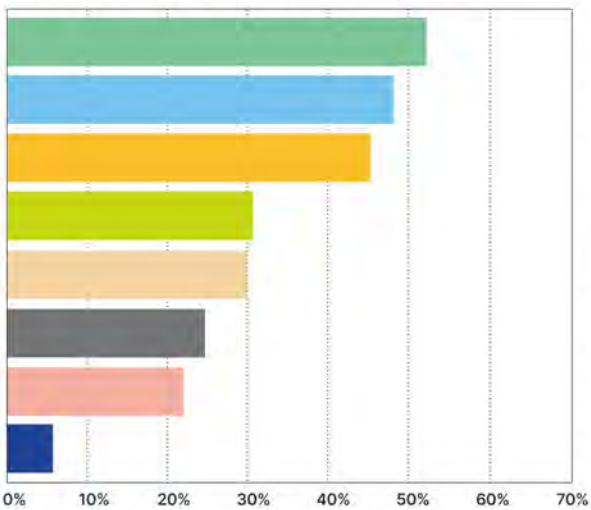
"I wanted to pursue a career in the construction industry as there is nothing more exciting than being able to physically see how important and impactful effective team collaboration is when solving difficult problems. It is great to be in an industry where this continuous problem-solving in a team environment has a demonstrable social impact on the local communities where we live and work."

Vasiliki Bowler, senior project manager, Faithful+Gould and CIOB Rising Star 2020

"The construction industry covers such a wide range of job roles and I believe it is a challenging but positive industry to work in. I chose construction for the variety. Each day is different with its own set of challenges and opportunities to learn. It is an industry where you will work alongside many individuals with varying levels of experience and expertise that will support you along your own personal journey."

Kelly Attwood, site manager, Morgan Sindall

How do you get young people excited about a career in construction management?



(Respondents could select up to three options)

- Generate interest early through school and site visits
- Demonstrate how young people can develop their careers in the sector
- Offer more internships and apprenticeships
- Foster a learning environment where more training is readily available
- Offer a supportive company culture
- Showcase the new technologies being used in construction
- By making the industry more inclusive
- By promoting the carbon reduction work the industry is doing

skills the number one issue facing many construction professionals.

Delivering projects to the desired quality, which could be seen as related to the struggle for skilled suppliers and workers, was the second most popular option when it came to challenges (39.8%).

And in a year which has seen repeated warnings over rising price inflation for products and materials as a result of rebounding demand following the Covid-19 lockdowns and stretched supply chains, it was perhaps little surprise that managing suppliers, including costs of materials and labour, would be the third most popular option at 38%.

Attracting a younger generation

Nonetheless, respondents were enthusiastic about supporting young people to enter a career in construction. When asked how to get more of them excited about working in the sector, more than half (52.5%) of respondents chose generating interest early through school and site visits as one of the most effective ways. The second most popular option was to demonstrate how young people can develop their careers in the sector (47.9%), followed by offering more apprenticeships and internships (44.9%).

Perhaps surprisingly, given the recent intensive focus the sector has placed on carbon reduction initiatives during COP26 in October and November 2021, the least popular option chosen by respondents was promoting the carbon reduction work the industry is doing (5.5%).

Impact of CIOB membership

CIOB members were asked whether membership had made a difference to their careers and to select the areas where it had had the greatest effect. 41.7% of members who said membership had a positive impact said that their skills and expertise had gained greater recognition.

Meanwhile, 38% said they felt more connected to other professionals and 35.4% said they had gained more knowledge. A quarter (24.5%) also said that it had made them stand out in the jobs market.

More reader comments on what they like most about their career in construction management

"The collaborative design process"
Adrian Billingsley

"All of the above and creating people's dreams!"
Simon Corkhill

"Having the opportunity to reduce carbon emissions in the built environment and meet our net zero commitment"
Alan Chapman

"Developing yourself, taking on and practising increasing levels of responsibility for yourself and the team"
Philip Kingsford

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CIOB launches Diversity and Inclusion Charter

Amid a compelling business case for more diversity and inclusion, new five-point charter aims to set out practical and useful behaviours that construction companies can work towards to make the industry more inclusive

CIOB is calling on construction firms to sign a new five-point charter (see box) that shows their commitment to diversity and inclusion.

The launch of the charter coincides with a new CIOB report that shows the compelling business case for construction companies to embrace diversity.

The report, *Diversity and Inclusion in Construction*, highlights the current lack of diversity in the construction workforce. Women made up only 12.3% of it in the fourth quarter of 2019, just before the pandemic struck, according to official Office for National Statistics (ONS) figures. Meanwhile, recent estimates of the proportion of Black, Asian and minority ethnic (BAME) people in it have varied from around 5% (according to figures from the GMB Union) to 7% (according to the ONS), dropping to 1% or fewer among senior industry roles.

▲ Recent estimates of the proportion of BAME people in construction vary from 5 to 7%

The report also warned that the industry is facing a ticking recruitment timebomb because the workforce is becoming more advanced in age, with some 32.5% comprised of those aged 50 and over (based on Construction Products Association figures) and retirement imminent for around 15% of them.

The looming exodus of older employees is not matched by a corresponding influx of younger ones. Only around 10% of those working in construction are aged between 19 and 24, with just 1-2% aged between 16 and 18.

A matter of business survival

In its latest five-year outlook, the Construction Industry Training Board (CITB) forecast that construction output will grow 4.4% each year on average between 2021 and 2025. That will necessitate the recruitment of an extra 217,000 workers over the period, some 43,000 a year.

The report said that the number of workers required meant that diversity and inclusion in construction "is not so much a fashionable cause as it is a matter of individual business survival".

It pointed to a growing body of evidence that suggested companies with a higher proportion of women and ethnic minorities in their ranks perform better than their less diverse counterparts. Management consulting giant McKinsey has been tracking gender and ethnic diversity in companies around the world since 2014, mapping those outcomes against business performance. Taking gender first, in 2014 it found

What we build should meet the needs of society. That is hard to achieve if we are not sufficiently diverse and, as an industry, do not reflect society
Caroline Gumble, CIOB

that companies in the top quartile for diversity on executive teams were 15% more likely to have above-average profitability than companies in the fourth quartile. That figure rose to 21% in 2017 and 25% in 2019.

Applying the filter of ethnicity, McKinsey found that companies in the top quartile for ethnic diversity on executive teams were 35% more likely to have above-average profitability than companies in the fourth quartile. The figure was 33% in 2017 and 36% in 2019.

Mark Harrison, head of equality, diversity and inclusion transformation at CIOB, said: "The debate is over. The business case has been made."

The CIOB's five-point charter is geared towards companies who may not previously have considered taking action on diversity and inclusion. It encourages them to make a pledge to take the first steps to doing so.

Commenting on the launch of the report and the Diversity and Inclusion Charter, CIOB chief executive Caroline Gumble said: "What we build should meet the needs of society. That is hard to achieve if we are not sufficiently diverse and, as an industry, do not reflect society.

"This special report and charter have been developed to be practical and useful, with behaviours that we can all work towards to make our industry more inclusive. It doesn't point a finger but encourages, recognising that we are all at different stages of the journey. No single organisation has this cracked, but every one of us, and every business in this sector can improve.

"If one of your ambitions is to make this industry fairer and more open to others, then I encourage you to sign up to our charter, to help make a difference, and to promote and share the very best of what you are doing."

The report has been sponsored by procurement organisation SCAPE and contractor Willmott Dixon (see box).

Mark Robinson, SCAPE Group chief executive, said: "Our communities are diverse, vibrant and inclusive, and having a workforce that reflects this is essential. This charter provides a framework for the industry to demonstrate clear leadership and SCAPE is honoured to have played a role in its development. We are committed to a people-first culture, and ensuring our industry is attractive, accessible and rewarding for everyone."

To read the full report and to sign up to the charter, go to: https://d8.ciob.org/specialreport/charter/diversityandinclusion.

CIOB's new report highlights the lack of diversity in the construction workforce

The Diversity and Inclusion Charter

As an organisation, we will:

1. Show leadership
We will demonstrate visible senior leadership by highlighting the benefits of diversity and inclusion in both internal and external messaging and action.

2. Make a plan
We will create a plan including targets where appropriate, and any other action needed to: address under-representation; reduce identified pay gaps; and/or ensure equitable development and progression for all.

3. Shape the culture
We will prominently display messages promoting an inclusive culture and making it clear that inappropriate or discriminatory language or behaviour will not be tolerated.

4. Be transparent
We will publish an annual report detailing the progress made against our targets and setting out our plans for the next 12 months.

5. Be accountable
We will show board-level accountability by assigning responsibility for these charter commitments to the CEO or a named director.

Willmott Dixon steps up on gender parity

Willmott Dixon has set itself the stretching target of achieving gender parity in its workforce by 2030, having launched a gender diversity steering group at the end of 2016.

In 2018, it also set a goal that 50% of its management trainee intake would be women and achieved 51%. It has now applied successfully for CITB funding to launch its Women's Leadership Development Programme with Cambridge Judge Business School, with 17 high-potential female leaders in the first cohort in 2021.

To support its aims, Willmott Dixon has launched a series of campaigns to encourage everyone to feel empowered to challenge discrimination. It began a poster campaign under the banner 'Respect the workplace', which featured the slogan: 'If in doubt, leave it out' with relatable scenarios depicting awkward moments where a joke goes too far or something comes out wrong.

The company followed that campaign with one featuring the slogan, 'If in doubt, call it out', a step further that encouraged people to challenge discriminatory behaviour when they witnessed it.

At least 75% of businesses reported access to labour as a threat to the UK's labour market competitiveness, according to a report by the CBI and Turner & Townsend published in November

75

Spectre of construction insolvencies shifts into clearer focus

Against the background of a challenging market, rising administrations are an indicator to watch, writes **Kris Hudson**

Against the backdrop of rising input costs, supply constraints, and the curtailment of various government support measures, construction insolvencies have climbed in recent months – further demonstrating the deep impact of ongoing market challenges.

The Insolvency Service reports that in 2021 Q3, new company insolvencies in construction increased by 18.6% on the quarter and 80.2% on the year. Of all insolvencies in the sector, 91.5% correspond to voluntary liquidations, with this type of insolvency representing an even higher 129.8% increase on the year.

Looking beneath the headlines, most insolvencies (59.6%) were from firms that delivered specialised construction activities such as plumbing or electrical installation. Material and component affordability will undoubtedly have played a part, along with extended lead times. This may feed into programme slippage and payment delay, which can concertina and be of particular concern for building completion and finishing trades at the end of the construction process.

> **With inflationary pressure yet to subside, the number of construction insolvencies in 2022 may be higher than in 2021**

We should be cautious about assuming that this spike could become a trend. However, there are signs to be wary of. Figures from Creditsafe show that construction administrations in October 2021 are higher than at any point since March 2020.

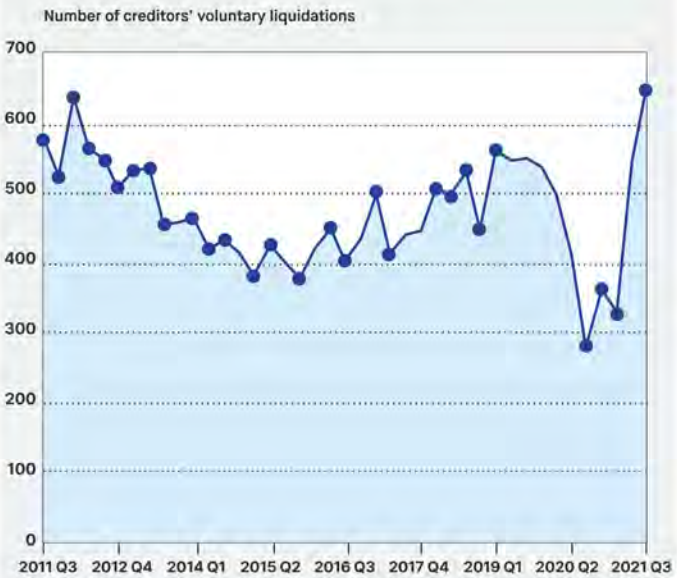
Yet, profit warnings for construction and material companies, reported by EY, have fallen recently. Only one firm has issued a warning in 2021 Q3, unchanged on the quarter and down 80% on the year. Begbies Traynor, a business recovery specialist, reports that the number of companies in financial distress has fallen by -15.1% on the quarter in 2021 Q3.

Nonetheless, with inflationary pressure yet to subside, the number of construction insolvencies in 2022 may be higher than 2021. More insolvencies are likely to have a major impact on the successful delivery of projects. The risk is that works could be left incomplete, significantly delayed, or with costs far exceeding original budgets, which can, in turn, lead to further insolvencies.

Breaking this cycle requires progress with some of the underlying market challenges, which might not happen imminently. Although contractor insolvency can be reduced by taking precautionary steps before entering into contract, such as fair and realistic risk allocation and acceptance, conducting financial stability assessments and focusing on best value, not necessarily price, are a must. However, businesses will remain at risk as supply chains continue to be restricted and this uncertainty persists.

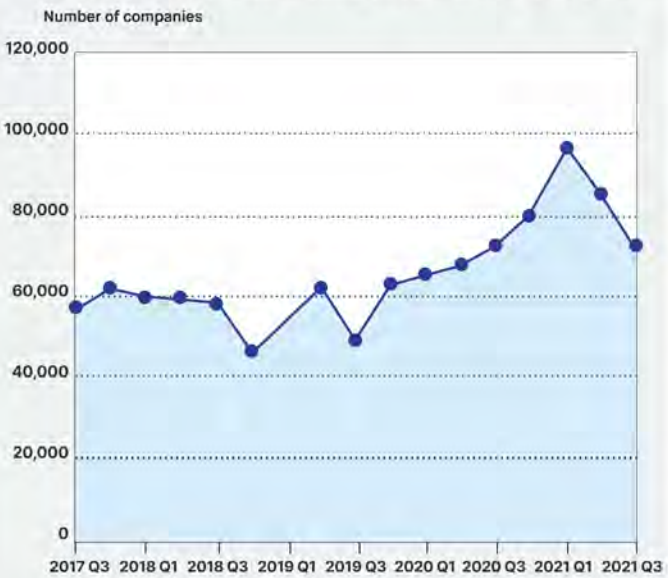
Kris Hudson is an economist and associate director at Turner & Townsend.

Creditors' voluntary liquidations, number of companies



SOURCE: INSOLVENCY SERVICE

Construction companies in financial distress



SOURCE: BEGBIES TRAYNOR AND RED FLAG ALERT

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by **EASYFAIRS**

David Stockdale
Briga Consulting

Driving the way forward for CIOB

CIOB professionals must be credible leaders of climate mitigation and adaptation projects, argues **David Stockdale**

CIOB professionals must be credible leaders of climate mitigation and adaptation projects, within the scope of the global building and construction sector

Construction will be required to deliver an efficient transition to a decarbonised economy

It starts and finishes with money. Building and construction projects have a life cycle that starts with money – without money there are no projects. Understand that and you have CIOB's future in perspective.

Mark Carney, the United Nations special envoy for climate action and finance, says that the objective for the financial sector is simple: every professional financial decision must take climate change into account. This requires not only financial institutions but also individuals to align their professional activities and behaviour with this goal.

So, what does this mean for the global CIOB membership? Well, it means that CIOB professionals must be credible leaders of climate mitigation and adaptation projects, within the scope of the global building and construction sector, which will be required to deliver an efficient transition to a decarbonised economy. This will involve advice, analysis, actions and decision-making on transition works that are estimated to cost $6tn per year.

This will require a basic understanding of environmental science related to buildings and its infrastructure within the next CIOB corporate plan. In addition, there must be an understanding that building and construction value chains will have to take a stakeholder value approach (that includes regulators, employees, clients, shareholders, local and central government and construction managers).

Post COP26, CIOB will have to revisit its Royal Charter and reaffirm its commitment to:

- The promotion for the public benefit of the science and practice of building and construction; and,
- The advancement of public education in the said science including all necessary research and the publication of the results of such research.

This will involve climate science within the context of the global building and construction sector. CIOB corporate membership routes will have to be reassessed and realigned to ensure that the professional cadre are 'up to speed' to lead projects and effectively contribute to debate and decision-making with clients and investors.

In addition, CIOB cannot successfully address the climate emergency without addressing the broader aspects of economic and social sustainability. The client and global financial sector will be aligning themselves with the 17 UN Sustainable Development Goals – 17 objectives agreed by 193 countries in 2015 to address the major environmental, societal, and economic global challenges.

International investors will also scrutinise project governance which covers the CIOB sphere of best practice that is based on the principles of our Royal Charter.

As a result, the next CIOB corporate plan will be the most influential since 1980.

David Stockdale FCIOB is director of Briga Consulting.

Caroline Gumble
CIOB

Construction is ready for more progression in 2022

CIOB members are keen to create a positive and forward-looking industry and the sector is ready for more progression as the new year begins, writes **Caroline Gumble**

This time last year I wrote that I was proud of CIOB for adapting quickly to the challenges we faced because of the pandemic. 2021 has also been a year of challenges – but a year in which both the industry and institute have made solid progress.

Within the last few weeks of 2021, I had the privilege of speaking at two parliamentary receptions, one in Edinburgh, one in London. On both those occasions, I reflected on our work on some of the major issues of the day. I also noted the appetite within much of our membership to help create a positive, forward-looking industry.

Among headlines from last year, COP26 was an important opportunity. The dedicated Built Environment Day was a useful platform for making the case – again – for a national retrofit strategy, as well as hearing from construction professionals around the world on initiatives to combat climate change.

There is a great deal of innovation in materials and methods – just flick through last month's *Construction Manager*, a special issue featuring 'net zero heroes' – and I believe we need to see more companies adopt these technologies.

But in advocating for more sustainability, the context is not just about the drive to net zero. There are also opportunities to adopt more digitisation and focus on creating the golden thread of information, needed to keep the construction, commissioning and occupation of our built environment safer.

Anti-slavery initiative Stronger Together has devised three simple hand gestures in sequence to let a victim of modern slavery draw attention to their situation

Jobs that focus on making the built environment more energy efficient are another opportunity. The Construction Industry Training Board issued a report in 2021 suggesting an additional 350,000 jobs will be needed by 2028 to deliver improvements to existing buildings to cut energy demand.

One note of caution – and another hope for the future – on Anti-Slavery Day last year, CIOB supported the launch of a new SOS hand signal for victims of modern slavery in construction to use to seek help. I have been concerned that with the pandemic and the consequent pressures on the industry, there may be an increase in incidents of modern slavery. But this new initiative to help victims seek support could help to tackle it, particularly on site.

There is much that is positive in the industry right now. I want to celebrate the fact that there is an appetite in the industry to be more progressive and I'm looking forward to what 2022 will bring.

Caroline Gumble is CEO of CIOB.

> **There are opportunities to adopt more digitisation and focus on creating the golden thread of information, needed to keep the construction, commissioning and occupation of our built environment safer**

Feedback

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

CM 29/11
Study finds Scotland-Ireland crossing 'impossible to justify

Arthur Patrick Neeson
And to think we needed a feasibility suggest to state what every man and his dog knew to be bleeding obvious!

John Porter
Was an immersed tube considered?

Ian Bramley
I don't think you needed a feasibility study to come to that conclusion.

CM 23/11
Housebuilding bodies angry at unfair EV charging costs

John Griffiths
This is typical housebuilders thinking of profit only and not the bigger picture. The government has got it right this time and should be congratulated.

Richard Worsey
The government ought to be demanding that new dwellings have solar panels unless dispensation applied for. Then housebuilders can pass on costs and home buyers can get a benefit.

Danny Fisher
Change brings cost but it's cheaper to install such things at construction rather than post build. Legislation should also require the installation of solar PV/hot water systems on new builds where suitable, again cheaper at time of construction than post build.

CM 23/11
German scientists develop popcorn-based insulation

Andy Chappell
I'll bet the local rodents will be rubbing their stomachs with delight! Even plastic-based materials are not proof against rodent attack, if even for nest-building insulation. Has this risk been anticipated and researched?

Russell Norris
Will this new material be proof against rodents?

Sisk's banking bonus

Santander is reinventing the bank HQ with its Unity Place building in Milton Keynes. **Kristina Smith** visited the site to find out how

Given the pandemic-induced shift to flexible working, one might assume that the last thing Milton Keynes needs is new office space. But there it is, as you walk out of Central Station: eight storeys and 37,000 sq m of brand-new building taking shape.

This will be Santander's Unity Place. A bank HQ, but different. Forget the security guards and scanners, here the ground floor will be open to the public, with pop-up markets, cafes, yoga classes and performances to encourage people to wander through. Santander is keen to accommodate and nurture entrepreneurial fintech start-ups on the lower floors.

"It's a real paradigm shift for an HQ building," says Richard Hutchinson, director at LOM Architecture and Design, which designed the building for developer Osborne+Co. "While Unity Place is designed with security in mind, the business's ethos is to be open and transparent – and to play an active part in the local community. This has informed the design of the building."

For contractor John Sisk & Son, the driving force at Unity Place is the programme. Having started tendering in March 2020, the team was on site by June. "It was an extremely quick mobilisation," says Sisk project director Aidan King. "We hit the ground running." A ready-formed team, from projects at Wembley, was vital to that flying start.

▲ The eight-storey Unity Place takes shape on site in Milton Keynes

▶ The facade units incorporate frame and glass and a cantilevered bracket to support an external gantry and brise soleil

It's a real paradigm shift for an HQ building. The business's ethos is to be open and transparent – and to play an active part in the local community
Richard Hutchinson, LOM Architecture & Design

Changing spaces

When Santander first imagined its building, Covid and its impacts were not even on the horizon. Fortunately, LOM designed the building with flexibility in mind. It has huge open floors that can be configured and used as required.

Some 6,000 Santander staff will relocate here from four other buildings when it opens in 2023, some of them moving from a building right across the road – which will then be reimagined as a mixed-use scheme. The building consists of four blocks, linked by three atriums, and glass-clad everywhere: LOM's visual translation of 'transparency'.

Each atrium will be criss-crossed by two eye-catching metal staircases, with rosewood handrails, designed to encourage the building's users to move by foot rather than lift, part of the building's wellness strategy. At a higher level, the blocks are linked by outdoor 'garden bridges', where people can get a fresh air and greenery fix.

The importance of the building's wellness and environmental credentials for Santander have increased over the lifetime of the project. Initially, though LOM had designed the building with BREEAM and WELL Building Standard in mind, there was no requirement to get the accreditation. Now there is, with targets of Excellent for BREEAM and Gold for WELL. ▶

One of the big things to get across is that the arrangement has worked because of the collaboration between all the parties here
Aidan King, John Sisk & Son

Santander has also ramped up Unity Place's environmental performance with the addition of huge batteries as part of the building's power system, and a connection into the local district heating scheme – which was just a possibility at the beginning of the scheme – has been firmed up, causing some legal paperwork and headaches for Sisk.

Beast of a basement

Having carried out some utility diversions when it first arrived on site, the first task for Sisk was to construct the building's 10m-deep, two-storey basement. This will house plant rooms and two levels of parking: one for the building and one for the public – a planning requirement.

"This is what we've been busy doing," says King, as he stands in the impressive space that is the basement, which extends beyond the building's above-ground footprint. It is week 73, but the building's concrete frame has yet to be clad because of the amount of time spent in the ground.

Sisk is cracking on with the internal fit out before the building is fully clad and watertight. "Some of the drylining boards will get damaged by the rain but we will cut those areas out and replace them. It's worth it for the value we gain in terms of the programme," explains King.

The perimeter of the basement was created by around 540 contiguous piles. With the capping beam in place, the box could be excavated, without internal propping, and then the 1.2m-deep raft foundation constructed. "It was virgin clay, with a really low water table, the best ground conditions we have ever encountered," says King.

Byrne Brothers has the contract for both the groundworks and the concrete frame, a package reported at £41m. Together with the packages for lifts and facades, this contract was in place before Sisk won the job.

The basement construction is reinforced concrete, with a Sika additive to make it Grade 2 waterproof (damp areas acceptable but no water penetration). Above ground, the floor beams are post-tensioned to enable large 12m spans. "The superstructure has temporary movement joints that are grouted once the initial settlement is experienced – post 56 days – to form a monolithic structure with no permanent movement joints," says King. "Interesting, considering the length of the building."

The building has six cores, all of which were jump formed, the four large ones using hydraulic shutters, the two smaller ones using one of the four tower cranes to lift the shutters. Because all the concrete will be on show internally, Sisk selected jumpform over slipform, with a slower cycle time to get the position of the joints right and recondition the formwork between pours.

The garden bridges are already in place, thanks to some careful surveying and engineering. Plates for the bridges to be attached to were cast into the concrete frame and then surveyed so that the bridges could be fabricated to suit, within 2mm tolerance.

"It's an interesting bit of engineering, due to sequencing, and just a cool structure," says King. "And it's fun to build."

The steelwork package presented a conundrum for Sisk because it was too small for a large contractor and too big for a small one, says King. But the team found a great partner in Hillcrest. Though some suppliers are new, many are old friends of Sisk, says King, which helps when the pace is fast. There are also some vast

Project team

Unity Place, Milton Keynes
Cost: £160m-£170m
Programme: June 2020-autumn 2022
Contractor: John Sisk & Sons
Architects: LOM Architecture & Design
Engineer: WSP
Project and cost manager: Turner & Townsend
Form of contract: JCT
Key suppliers:
Frame and groundworks: Byrne Brothers
Structural steel: Hillcrest
M&E shell and core: Update Group
M&E fit out: Grant Walker Engineering
Facade: FKN
Roofing: Briggs Amasco

The number of contiguous piles used to create the perimeter of the basement

540

expanses of building for them to go at, which should help with the fast production rates needed, he says.

Perversely, Covid has helped to some extent, with clear roads making deliveries to site and journeys for workers easier. However, there was a breakout on sight which saw one-third of the workforce in isolation due to infection and close contact. The Sisk team feared they might have to shut the site down; draconian measures of twice-daily testing and the Sisk team staying on late to fumigate common areas kept things under control.

On track

Up on the roof of the building, which will also be home to a bar and the walking track, it is a hive of activity in the plant area. The roof is on the critical path, and there's the late addition of the batteries to contend with. The 2MW batteries will provide backup for critical and essential services, delivering 60 minutes of AC power and reducing the need for fossil fuel-powered backup generators.

With the building's concrete frame nearing completion at the end of 2021, the installation of the glass panels that form the facade was beginning. Manufactured in Gdansk, Poland, by German supplier FKN, the facade units incorporate frame and glass and a cantilevered bracket to support an external gantry and brise soleil. The brise soleil will be installed on three of the building's four elevations to provide shade and prevent overheating.

As for budget, the cost of the building is not set in stone. When Sisk won the contract, it was announced at £150m. Now it looks likely to come in at between £160m and £170m, says King.

Osborne + Co is delivering the building for Santander in a model which Hutchinson refers to as 'Build to Suit'. Though the three pre-let packages were tied down when Sisk took the reins, the others were all on provisional sums.

This sounds like a risky arrangement, but things have worked well to date, says King.

◀ CGI showing an urban market in the atrium and garden link bridge

▼ Installation of the garden bridges

Construction Manager CV: Aidan King MCIOB

Aidan King applied for a job at John Sisk & Son before graduating and has been there ever since: 18 years in all.

Since then he has worked on a variety of projects from high-rise residentials to hotels, multi-storey car parks and the refurbishment of Wembley Arena.

He is particularly proud of Sisk's recent Wembley Park residential development for Quintain: "They have come out looking so well, we have really made a big change to the area around Wembley Stadium and the quality we delivered is second to none."

- **2004-present: John Sisk & Son, graduate engineer to project director**
- **2002-2003: MSc Construction Management, Heriot-Watt University**
- **1997-2002: BSc Architectural Technology, Edinburgh Napier University**

Using established supply chain partners helps to keep a lid on prices in an inflationary market and a shared ethos between developer, contractor and architect has also been vital: "One of the big things to get across is that the arrangement has worked because of the collaboration between all the parties here."

Some things are still up in the air. Sisk must deliver a complete building, fitted and kitted, but decisions about its internal design were yet to be confirmed in late 2021. And as for how Santander's united workforce will arrange themselves in their new space, that is yet to be determined. A lot can happen in a year...

High-strength steel lifts hollow sections

Structural hollow steel sections – commonly known as tubes – have been an unsung structural engineering success story of recent years. **CM** reports

This steel has great welding properties thanks to a low carbon equivalent value, so steelwork contractors and other fabricators are happy with it
Steve Whitfield, Tata Steel

Tubular steel made by Tata Steel was used on the Louvre Abu Dhabi

The roof features 1,900 tonnes of Celsius square hollow sections

Tubular steelwork has become near ubiquitous in the built environment, prominent on structures of all types, from large stadiums to major transport developments and local commercial and retail developments of all sizes. Bridges, motorway and railway gantries all use tubular steelwork, sometimes primarily to give an aesthetic quality, at other times hidden away performing a vital structural part in the success of projects.

Tubes can be used for everything from sprinkler systems and pipelines to long-span structures and multi-storey buildings. Some 20% of all steelwork is tubular. Tata Steel manufactured 350,000 tonnes of tubes in the UK last year, with a substantial part of that exported – some has been used on the Louvre Abu Dhabi, for example.

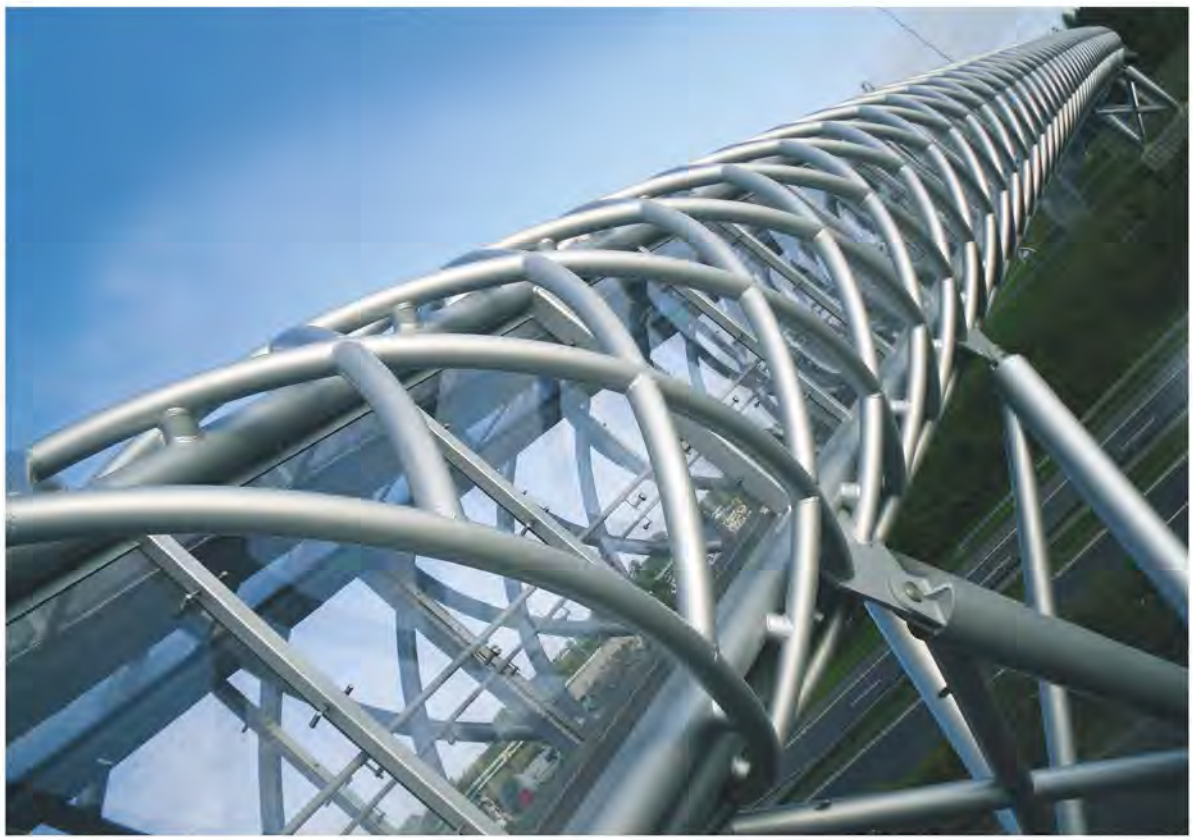
Engineers value hollow sections for their versatility, increasingly so when made from the higher-strength steels now available. Hollow columns are adaptable and can be filled with concrete if required, increasing fire resistance. The communities neighbouring the structures appreciate the aesthetic qualities of tubes, forming striking elements of often iconic bridges, stadiums and buildings.

Architects realise that it is often hollow sections that make their visions possible to achieve. The tight corner radius on Tata Steel's Celsius hollow sections makes for enhanced aesthetics on square or rectangular tubes when the structure of a building or bridge is to be exposed. Elliptical sections have also been developed which are used as columns in glazed areas where their shape minimises the visual impact of the structure.

Hollow sections are set to take another significant step forward as the world focuses increasingly on sustainability and efficient design against a background of combating climate change, rising prices and sometimes scarce supply of materials. ▶

SMOXX ALAMY STOCK PHOTO

The structurally efficient shape of hollow sections helps lead toward efficient design
Steve Whitfield, Tata Steel



STEVIE SPIERS PHOTOGRAPHY

▲ Hollow sections create a helical truss for the M8 Harthill Footbridge

▶ Weathering Celsius steel hollow sections at Camp Adventure, Denmark

"The structurally efficient shape of hollow sections helps lead toward efficient architectural and engineering designs," says Steve Whitfield, manager structural tubes at Tata Steel.

"Tubes have designed-in efficiency, minimising the amount of steel used, so saving on space occupied by a structure. Now tubes are available in high-strength steels, structural efficiency can reach new levels."

With the launch of Tata Steel's hot-finished Celsius range, high-strength hollow steel sections are available in a wide range of circular, square, rectangular and elliptical shapes and sizes.

Whitfield says: "We see demand for the Celsius products in all structural and mechanical applications, from critical machine parts as well as multi-storey columns, space frames, attic beams and frames for cranes, ski lifts, machinery and trailers.

"This steel has great welding properties thanks to a low carbon equivalent value, so steelwork contractors and other fabricators are happy with it. It also has a controlled silicon content which means it has good 'galvanisability'."

These high strength properties mean that less steel can be used in a structure when a lighter weight is desired, opening up a market in the new era of lightweight sustainable structures. Celsius grades are also designed for use in the harshest environments, like the North Sea and in low temperature conditions.

Weathering steel is increasingly popular on buildings and bridges as architects and developers opt for designs that reflect an industrial heritage, which the developing patina of weathered steel reflects. Until fairly recently, weathering steel was only supplied in heavy sections or thin facades but is now available in hollow sections. Weathering steel hollow sections will be used on some stations on the HS2 rail route, where its low maintenance as well as aesthetics will come into its own.

"Weathering steel Celsius hollow sections, apart from looking great in their usually high-profile locations, provide durability and ▶

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Steel savings achievable by using high-strength steel, in percentage terms

long life in low maintenance structures," says Whitfield.

Meanwhile, high-strength steel has been a big market success, partly driven by its sustainability advantages. "Steel is a highly sustainable material generally, but using high-strength steel means you can use less of it for a given structural purpose. Savings of 20% are achievable," he explains.

Modular is another growth area and the market move towards offsite construction suits steel.

"All steel is produced off site, always has been, and is brought to site ready for erection when required," says Whitfield. "You don't need high-strength steels for buildings up to three or four storeys, but beyond that hot-finished hollow steel sections really come into their own.

"BIM is having an impact on the way we all work but it will increasingly become critical as the world goes digital. Steel has been working in this sort of way for many years, using software packages that easily produce all the information that BIM requires."

BIM models are provided for all Tata Steel construction products, including hollow sections.

Steel manufacturers like Tata Steel are working with industry partners to ensure steel can play its full part in the road to net zero carbon by 2050.

"We need the right roadmaps to achieve that, and we need the right steel as well," says Whitfield. "We think we have got that with our high-strength steels, including hollow sections, and are investing in bringing forward further improvements. The steel industry has the evidence to back up its sustainability case, especially when a proper cradle-to-cradle approach is taken."

Research and development is focusing on making hollow sections even easier to design with. Other developments will include making high-strength steel easier to weld.

Architects and engineers constantly challenge steel manufacturers and fabricators and the UK's success at meeting those challenges has assured a worldwide appreciation of hot-finished hollow sections.

EFFEKT/RASMUS HJORTSHOJ

A history of hollow steel sections

Technical innovations opened up a world of new construction opportunities

Hartlepool steel was used for the Louvre, Abu Dhabi

Engineers and architects appreciated the potential of hollow sections as long ago as the heroic age of engineering, but all that was available were square and rectangular hollow sections that had to be expensively shop-fabricated by welding or jointing together structural plates and sections.

Initially both fabricators and architects were wary of the new hollow sections. Few had heard of them and most didn't know how to design or detail tube. Fabricators worried – needlessly as it proved – that the amount of welding needed would be a problem.

A breakthrough came in 1959 when Stewarts & Lloyds – now part of Tata Steel's tubes business – introduced a range of hot-finished square and rectangular hollow sections (RHS) which, along with developments in jointing technology, freed architects to express themselves structurally.

Architects appreciate the clean lines of circular profiles, which appear as the same dimensions wherever they are viewed from. Today's software packages mean that practically anything that can be drawn can be built, and hollow sections play a crucial role.

Milestone projects include the National Exhibition Centre at Birmingham, a proving ground for the Nodus system, a new way of approaching design of two-dimensional space structures. Others included the jumbo jet hangars at Heathrow and the Fort Regent Leisure Centre on Jersey, one of the first single-layer circular parabolic domes made in hollow sections.

Today, Tata Steel manufactures some 350,000 tonnes a year, at the Corby and Hartlepool mills, for structural and non-load bearing applications on many high-profile projects. The heroic age of hollow sections engineering might just be upon us.

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Drainage pumps – construction, climate change and consultancy

This CPD, in association with Metro Rod, considers the role of submersible pumps in the construction sector, the importance of expert consultancy in their design and installation, and the threat posed to our drainage systems by climate change

Adoptable and private pump stations are now a fundamental part of any modern-day build project. As efforts to minimise flooding across the UK gain momentum due to Sewerage Sector Guidance (SSG) changes and the introduction of legislation such as the Environment Bill, there will be more responsibility to ensure infrastructure and communities are protected. Construction teams, pump manufacturers and water authorities must work closely together and ensure pumps play an efficient and sustainable role.

There are 112 internal drainage boards in England, operating and maintaining some 22,000km of watercourse, including associated sluices and weirs, and hundreds of pumping stations to help manage water levels. However, as more private entities increase their use of drainage pumps in their developments to help reduce flood risk, they look set to become an even more prominent feature of UK drainage infrastructure.

Drainage and wastewater pumps can be installed underground to remove wastewater from a range of domestic and industrial sites, including private housing, farmland and construction sites. In short, in any location where the land is lower than the main sewer invert, a pump station or treatment plant will be required to remove sewage.

Main sewer pipes use gravity to move surface water and sewage, allowing the fluid to flow gradually downhill until it reaches the lowest possible point. A pump comes into play underground when gravity can no longer be relied upon. Once activated, the installed pump will efficiently and economically pump the fluid to the main sewer inlet.

▲ Excess water escapes the streets via grids and gutters to a storm drainage tank

Every build project is different and the design of every pump station should be as well. Plus, as the impact of climate change becomes ever more complex and the risk of flooding continues to increase, applying a blanket approach to the design and installation of pump stations simply isn't recommended. With this in mind, at the conceptual stages of any building project, it's essential to understand how pump stations will be beneficial to the operation of a finished development, taking into account the size of the development and what specification the pump station comes under.

As the impact of climate change becomes ever more complex, applying a blanket approach to the design and installation of pump stations simply isn't recommended

The pump station must be designed to either SSG and local water authority addendum specifications if the station is to be adopted, or Building Regulations Part H1 if it's to remain private. It is of vital importance to understand what specification is needed as this will determine the size of the pump station required.

Types of pump stations

- **GRP (glass reinforced plastic) pump station**

Also known as a package pump station or submarine tank, this is a chamber that is dropped into a pre-dug hole by groundworkers. These are pre-made off site and once in place a pump engineer will fit the pumps and control panel, and then fit the float switches and set them to the correct operational heights. Before completing the works, they will test and commission the pump station.

- **PPC pump station (pre-cast concrete ring station)**

Pre-cast concrete rings arrive at the site and are lowered into a pre-dug hole, then secured one on top of the other to create a pump chamber.

A two-person pump team would then attend, with signed-off RAMS (risk assessment method statements), to enter the chamber and take measurements before installing the necessary components – for example, the pump pedestals, guide rails, pipework and valves, and the control panel in a separate kiosk or plant room. Once complete, the float switches are set to the correct operational heights, tested and then commissioned.

- **Adoptable pump station**

Adoptable pump stations are designed to the latest SSG and the local water authority specifications. They require full approval by the adopting water authority before any construction on site and typically take up a large area, approximately 10m x 14m, dependent on the type required.

Before the water authority can adopt the pump station, more than 51% of the site must be occupied.

Types of pump

- **Submersible foul/storm pump**

Used to pump drainage water or foul water, they ideally work in pairs. When there is foul water, the pumps alternate between active and standby or active and assist, depending on the flow rates. Storm pumps, however, are normally set up to alternate between active and assist due to a typically higher than normal flow rate.

Submersible pumps can be fitted with various types of impellers to suit the individual site. For example, a macerator impeller that cuts and shreds debris and adaptive single-channel or multi-channel solids handling impellers. Vortex pumps are another type of submersible pump that have better handling capabilities for solids.

- **Submersible sump pump**

A type of submersible pump that is typically found in basements or below ground car parks, it works by pumping fluid up to the main sewer inlet. Sump pumps use an electric motor component which must be kept above water.

- **Contractor sump pump**

A type of submersible pump typically found on construction sites to remove drainage water while construction takes place.

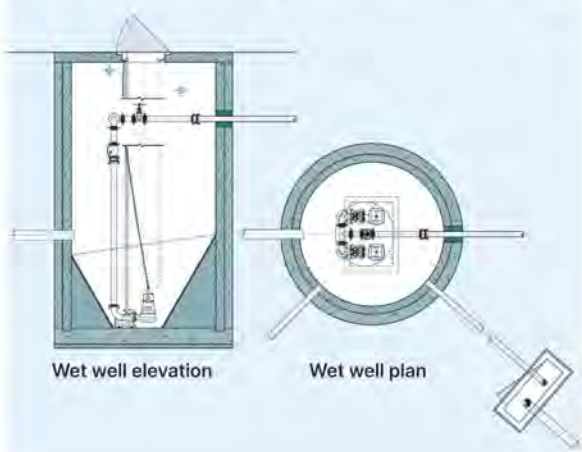
The effects of flooding on drainage pumps

Climate change is making flooding a more serious threat than ever before. As the risk of flooding increases, so too does the risk of damage to property and the surrounding infrastructure.

As the earth warms, the atmosphere around us holds more moisture. Rising temperatures intensify the water cycle, increasing evaporation. The air can only hold a certain amount of moisture at any given time and, as evaporation increases, rainfall becomes heavier.

Already, several regions across the UK experience 'extreme rainfall' in summer. The risk of floods is no longer limited to autumn and winter. And while the immediate focus will be on clearing the disruption caused by flooding, we must also ▶

PPC pump station (precast concrete ring)



It's vital to ensure pump systems are maintained all year round to make sure that, should a flash or extreme flooding event occur, they are best prepared to tackle the ensuing challenges

remain vigilant about the impact it has on community infrastructure – and the drainage systems working below ground.

Storm drains and drainage pumps are installed across the UK and are specifically designed to draw water away from roads when heavy rain and flash flooding occurs. During flooding, excess water escapes the streets via gutters and grids. The water enters a storm drainage tank which is split into different holding chambers, each containing a float. As each chamber fills and reaches capacity, a float will trigger an alarm. The pump will then automatically begin ejecting water into sewer pipes, where it eventually reaches lakes, rivers or reservoirs.

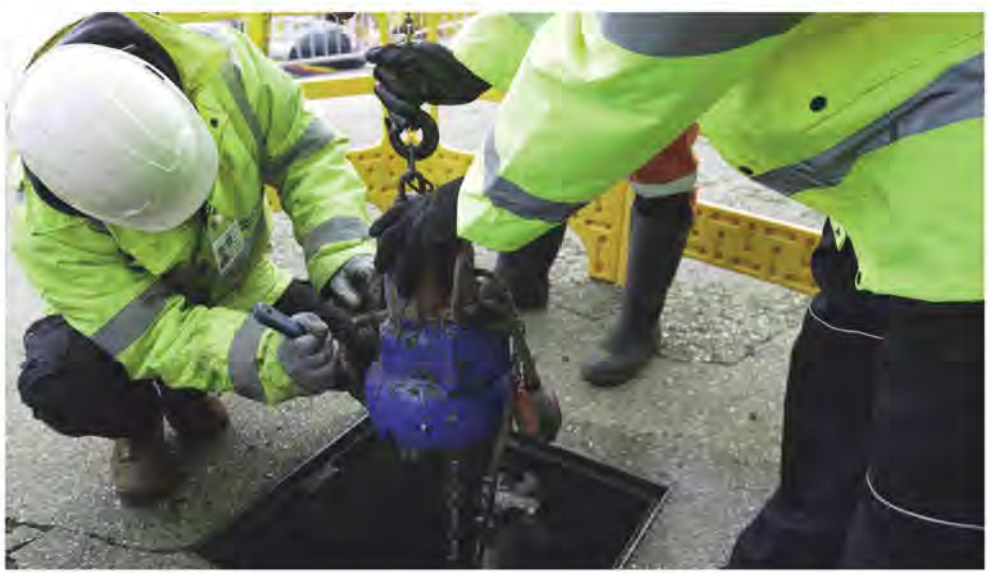
When functioning efficiently, storm drainage systems are able to protect us from the impact of floods, but several factors put that at risk.

First, many aren't routinely serviced or maintained and become clogged with fallen leaves, litter and silt, which builds up over time. Then, when a storm does hit, the pump isn't able to cope. Instead, water overflows and pools form on motorways, car parks and outside businesses and homes.

Additionally, as flooding increases and the capacity of the sewer networks is put at risk, so too is the capacity of drainage pumps. If there's no space remaining in the main drain, the pump has nowhere to discharge water too. Instead, the pumps become overwhelmed and unable to perform efficiently. Leaving any excess water in a storm drain or drainage pump will eventually wear out the pumps sitting inside the holding chambers, leading to a complex and costly repair.

Finally, any excess water which isn't able to drain from the sewer network properly can then go on to cause structural damage to the surrounding infrastructure, affecting residential and commercial developments.

As such, it's vital to ensure pump systems are maintained all year round to make sure that, should a flash or extreme flooding event occur, they are best prepared to tackle the ensuing challenges.



CCTV drain survey by a Metro Rod drainage engineer

Routine pump maintenance by Metro Rod pump engineers

The effects of concrete and rubble on pumps

Any building project will generate a wealth of waste material, including concrete, rubble and silt, which developers are required to manage on site. Despite their best attempts, some of this can enter nearby drains and then the sewer networks and pump systems below ground.

Whether you use a temporary pump to control any water that's gathered during excavation, or you install a specified pump intended to support a local community for years to come, consideration must be taken to ensure the build process doesn't impact the effectiveness of the system.

Most excavations below ground level accumulate water so, before work starts, plan how to treat and dispose of groundwater that enters the site. A pump to discharge the water to the sewer network may be required and if so, the local environmental regulator will need to be contacted for authorisation. This can take several months to obtain, so planning ahead is vital to prevent disruption.

When installing an underground drainage pump to a site that connects to the local water network, steps will need to be taken to ensure as little waste material as possible enters the sewer. Not only does the

22,000

There are currently 112 internal drainage boards in England, operating and maintaining some 22,000km of watercourse

waste itself pose a blockage risk, but some materials can contaminate the water, which then ends up in the watercourse, reaching people's homes and businesses.

To avoid this, ensure your pump system has an interceptor installed. They are designed to stop contaminated substances from reaching our drinking water supply. Interceptors are often overlooked but are essential pieces of equipment to prevent cross-contamination.

Whenever a project is finished, a CCTV drainage survey should be carried out and the drainage system should be thoroughly cleaned, using high-pressure drain jetting. CCTV drain surveys allow for the easy identification and surveying of potential problems that may arise by using high-tech, specially designed cameras that identify the source of a potential problem before any larger symptoms occur. Meanwhile, drain jetting uses high-pressure water jets to remove blockages caused by debris build-up to maintain a healthy drainage system.

The life cycle of a drainage pump

Consider the process of integrating a pump station into the project as a life cycle – from initial assessment through design, approval, installation and maintenance. While that might seem overwhelming when dealing with the usual challenges of working on a construction site – time delays, additional costs, managing client relationships – there are industry partners available to ensure anything pump-related embeds seamlessly into your project.

The right partner should take the time to understand the key objectives of the project, give confidence you're meeting all the necessary requirements in terms of

legislation and SSG, and provide a full written M&E specification and technical drawing which outlines the exact makeup of the system.

Even at the initial conceptual stage of having a pump designed and installed, an ongoing, planned, proactive maintenance schedule should be agreed with the pump supplier to ensure the system doesn't experience failure. Services should be conducted quarterly, six-monthly or annually, and an emergency callout provision should be put in place for extreme circumstances.

For advice and guidance on the design, installation or maintenance of a pump station, contact Metro Rod on 01625 507945 or visit metrorod.co.uk.

> **Whenever a project is finished a CCTV drainage survey should be carried out and the drainage system should be thoroughly cleaned**

CPD Questions

1. Name two pieces of specification you must consider when designing a pump station?
a) Sewerage Sector Guidance (SSG) and Building Regulations Part H1
b) Water Industry Act 1991 and the Water Act 2014
c) The Floods and Water (Amendment etc) (EU Exit) Regulations 2019 Parts A & B
d) Waste Water Management Guidance & Building Regulations Part J6

2. Name the type of pump you would use when developing a property with a basement?
a) Lobe pump
b) Dosing pump
c) Sump pump
d) Magnetically driven pump

3. What type of impellor is a macerator?
a) Agitating type
b) Cutter/ shredding type
c) Semi-open type
d) Compressing type

4. What should be installed to ensure contaminated waste material from construction sites doesn't enter the water network?
a) Sandbags
b) A barrage
c) A flow regulator
d) An interceptor

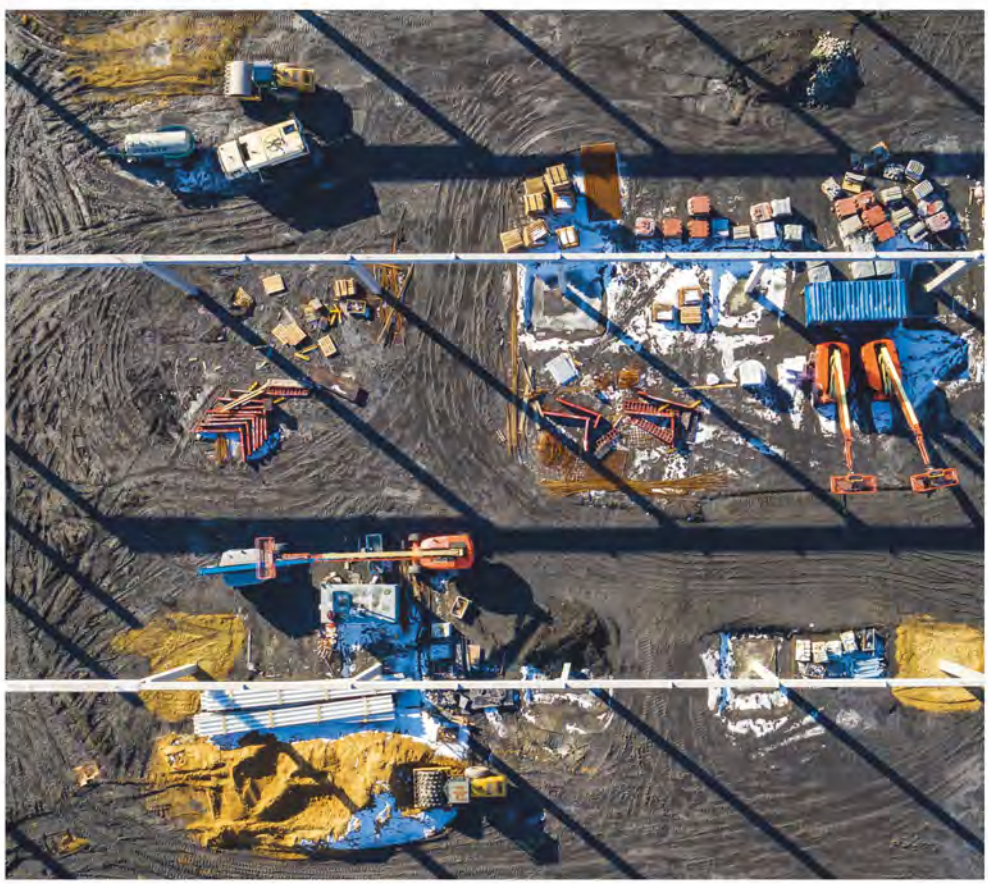
5. Which three processes should be carried out at the end of a building project to ensure a pump is functioning effectively and free from debris?
a) A full commissioning process to establish if the pump station is running at maximum efficiency, a CCTV drain survey and high-pressure drain jetting
b) A full service by a registered pump engineer, a visual inspection and a test of the pump with at least 50 litres of clean water
c) Check for fallen leaves, litter and silt
d) None of the above – pumps do not need to be checked

To test yourself on the questions above, visit www.construction management.co.uk/cpd-articles.

How construction is embracing sustainability and circularity

Collaboration is key as construction's efforts to tackle carbon emissions and embrace circularity gather pace. That's according to prominent figures from across the supply chain including tier 1 contractors, construction technology group Hilti and hire firm Speedy in a recent round table discussion. **Neil Gerrard** reports

Sustainability is being built in to site processes



How do you see construction's approach to sustainability today?

Graham Edgell (GE): Sustainability was a bolt-on to the construction industry but it is now business as usual. We need to collaborate to succeed. The whole circularity and environmental agenda needs to be joined up and we can set an example to other sectors because one thing about construction is that it's good at finding effective solutions.

Rainer Ringgenberg (RR): Hilti has long had a focus on sustainability topics like, for example, the health and safety of our customers and employees. We have also been active for many years on the social side with our global Hilti Foundation. But we realise there is also this environmental aspect where we believe we have to take care more of the areas where we do business. We believe, thanks to our footprint globally, that we have an import role to play.

Russell Down (RD): Environmental issues come up for me with all of our stakeholders, whether they be our shareholders, our customers, our employees, our suppliers, and I think,

We are looking at what we can do with extraction of raw materials, extending the life of a product and how we can take those products back to recycle and reuse them at the end of their life
Rainer Ringgenberg, Hilti GB

as a hire provider, we are in a unique position to influence the debate, to participate and to shape the future. We are in the process of setting science-based target initiatives.

Geraint Rowland (GR): Costain launched its own climate change action plan at the end of 2019 and that has really changed the focus massively. There is much more focus from leadership now on changing the industry. I would agree with Graham that collaboration is key.

What is your company's current approach to circularity and the environment?

RD: Speedy's impact on the environment is affected by our position in the supply chain as a provider of equipment to customers but also our own carbon footprint. The equipment that we provide is inherently sustainable because we are effectively promoting the sharing economy and therefore helping to improve efficiency and utilisation and minimise wastage.

We are also very good at maintaining and repairing equipment, prolonging its life. And we develop new technology with manufacturers such as Hilti. We operate 500 company cars, over 1,000 vans and lorries, so we are promoting the use of hybrid and electric vehicles, as well as using hydro-treated vegetable oil in our fleet.

BUTTERFLY EFFECT/REALITY PAUSED.COM

▲ Morgan Sindall is a founding partner of the Supply Chain Sustainability School

Round table participants:

Russell Down
Chief executive, Speedy Hire

Rainer Ringgenberg
Head of market region northern Europe, Hilti GB

Graham Edgell
Director of sustainability and procurement, Morgan Sindall

Geraint Rowland
Group environmental director, Costain Group

RR: Circularity and sustainability are at the centre of what we do. We look at it from a holistic perspective. Circularity is key for us and we want to be global number one in our industry and in our area when it comes to circularity.

Innovation is in our DNA so we are looking at what we can do with extraction of raw materials, extending the life of a product and how we can take those products back from the market to recycle and reuse them at the end of their life. In 2020, we took back several million tools, batteries and chargers and we can recycle 97% of the material.

Geraint Rowland (GR): Our approach has changed from the back end, looking at the waste that is coming out and searching for a place to divert it from landfill, to the front end and being design focused.

We have called it Eliminating Harm, and that is from health and safety and environmental perspectives, but we have focused a lot on bringing carbon reduction and circularity to our designs. We are running training courses with designers both internally and externally to try and get them to change the way they are doing things. We need to work with our clients to do that.

GE: We have divided our carbon and our environmental impact into our own operational carbon, that of our supply chains, but also the embodied carbon in our products at the end. And I think the big point for us is we have realised now that we cannot do it as one tier 1 – we need to do it as a critical mass across the industry, which includes our supply chain and our competitors.

What have you found to be some of the simplest and most effective ways of reducing your company's emissions?

RR: We look at our environmental footprint reduction from a top-down perspective and also from a bottom-up approach. When it comes to the top-down approach, we created a sustainability team linked to the group CEO and we define areas where we want to be better.

For example on CO_2 we want to be neutral by 2023. Product innovation is important for reducing emissions. A long product life improves the hirer's margin as well as the environmental impact. If you buy a cheap tool, it might only last a year or two. You end up needing more tools, which generates more waste and cost.

We are also trying to reduce CO_2 emissions related to our service model. We will change 15,000 cars from fossil fuels to electric cars. And at the same time we also follow a bottom-up approach where we ask people and our team members in the field if they have good ideas. As an example, we came up with our new Hilti tool bag, which is made 100% out of recycled bottles. ▶

GE: We have 6,500 staff and each one of them is making a carbon pledge. We have already reduced our operational carbon by over 68% since we started, but we know that we are now in the hard miles where we need to do it together, so it is engaging with people so that everyone has a joint understanding of how to do it.

Alternative fuels, fleet, renewable energy – they are the easier targets. We have now moved on to harder targets which is the life cycle carbon and carbon that is embodied in buildings.

RD: For us it is twofold: it is the equipment that we bring into the fleet through our suppliers and looking at innovations in those areas, whether it is battery-, solar-, hybrid- or even hydrogen-powered equipment.

There is an education process there with our customers that the piece of equipment might not be the cheapest to hire up front but fuel usage and the carbon output in the longer term mean it will be cheaper to run and also there is a significant environmental benefit from it.

Our own carbon footprint revolves around logistics. All our company car list is now electric or hybrid vehicles and we already have electric vans and electric lorries within the fleet.

GR: We found that the idling levels in our plant were exceedingly high which is obviously costly. You can put a nice pound sign against it but it is also a very significant bit of our carbon, so we set a target across all of our projects to set a baseline for idling and a reduction target which has been quite successful.

> **We have tried to open the door to measurable and provable innovation so that we can share best practice not just with ourselves but with the client**
> **Graham Edgell, Morgan Sindall**

How are you training people within your organisation – and your customers – to meet the sustainability challenge?

GR: We have our own Leading Carbon in Costain course that we have rolled out to the majority of our leaders now and we have strengthened our other safety, health and environment (SHE) training courses so that environment is a stronger element within those.

It is a key part of what we are delivering to all our staff. Getting people on board is vital. We also do work with our supply chain. We run a supply chain academy and work very closely with the Supply Chain Sustainability School.

GE: We are founder partners of the Supply Chain Sustainability School. We are part of the team that has driven learning pathways. The school can tailor a learning pathway to individuals and companies. I am pleased to say that Speedy are part of the school as well as Costain, so it really works.

RD: Our chief operating officer sits on the board of the Supply

▼ Speedy Hire has electric vans and lorries within its fleet

More of our customers are using environmental criteria to select their suppliers. It is important that we introduce innovative equipment and that has an impact on how customers select us
Russell Down, Speedy Hire

Chain Sustainability School with Graham and we found it extremely useful with training and changing our culture. We have our own head of ESG [environmental, social and governance], we have learning and development, but all of that is feeding in and using the material generated by the Supply Chain Sustainability School to change the culture within the organisation and make sure we have got 3,500 advocates for reducing our carbon footprint.

RR: It is exactly the same picture for us in Hilti. The good thing is, it's not so difficult to win the team members to go in this direction. They think it is the right thing to do. We are also trying to help our customers on the sustainability journey.

Many of our employees are trained to seek solutions in research and development. Normally the innovations do not speak for themselves – we have to show it. It is not just about environment, the health and safety factor also plays a role and there we have some cool features which make our team members excited, such as our exoskeleton which can support the workforce in working overhead.

Do you select supply chain partners based on their environmental performance?

GE: The supply chain in Morgan Sindall is worth over £3bn. Historically we have used a PQQ process, which is reactive and based upon legislative compliance. But with clients judging us more and more on quantitative measures around sustainability, we have started to introduce them the same way.

Now, on a project-by-project basis, we have tried to open the door to measurable and provable innovation so that we can share best practice not just with ourselves but with the client. We are encouraging our supply chain to build up a library of case studies that we can get third-party accredited that we are happy to share with other bodies and our peers and joint venture partners.

GR: We have some really good examples from some infrastructure projects like Crossrail, HS2, and it is a matter of trying to spread that best practice. It needs to be an efficient process so it is targeting those areas where you have got most opportunity on carbon or where there's the most environmental risk. As an industry I think we need to get better and start rewarding those companies that are making the most progress.

RD: More of our customers are using environmental criteria to select their suppliers. It is important therefore that we introduce innovative equipment and that has an impact on how customers select us because it can reduce the end cost of the project and certainly will reduce the environmental impact.

Closing statements

GE: These are exciting times because from almost a standing start, the industry is responding in a massive way. The fact that you have two tier 1s in the discussion today, you have a manufacturer that is setting examples and an enabler like Speedy delivering them right to the coalface just shows this. We have a long way to go, but if we can continue to share, collaborate, target and measure the improvements, I think we can set an example to other sectors.

Hilti's Jaibot semi-autonomous cordless drilling robot

RD: We have been working on this for a long time but the momentum now seems to have really re-emerged. We are a public company and the shareholders are very much pushing this agenda. Equally our customers, their end customers, their employees and our suppliers are all working to push this forward.

RR: The best sign is that we have all been able to speak about this together for a good hour. Collaboration is key. When we work together and we involve suppliers and customers in the innovation process and the supply chain process, then we can win double.

GR: I have been in this role a long time and it feels now like we are making huge progress and getting to the real issues like scope 3 emissions. They are tough things to drive down to zero carbon but we are making progress and we are getting more interest from our clients. Collaboration all the way. Let's get there.

In association with Mips

Raising awareness around head injuries

A CM survey in association with helmet safety technology company Mips has revealed a lack of training and awareness around head injuries and their causes. Head injury expert **Chris Tidy** explains why construction needs to understand the risks

Most of us understand that a head injury can be a killer, with the effects either showing immediately or in some cases 48 to 72 hours later. The damage can cause short- or long-term issues and for some people it can change their personalities completely.

On modern construction sites, there is widespread awareness of the need to wear a hard hat, but the results of a recent survey with *CM* show a clear majority think that not enough is being done to inform the workforce of the specific risks around head injury.

Concussion is often referred to as mild head injury and while most mild head injuries result in no long-term damage to the brain, they can cause temporary disruption to brain function lasting from hours to even months.

Less than a third (27%) of survey participants were correct in answering that up to 75% of traumatic brain injury (TBI) cases result in a concussion. The rest thought the proportion was lower than this. In fact, the most common type of TBI is concussion, which accounts for up to 75% of all TBI cases.

Reporting and risk

The reason is perhaps because the industry reports on accidents not injuries. If injury information was logged in detail, we could understand the injuries and help to mitigate them.

Just over half (51%) of those who responded don't think enough is being done to inform the workforce of the risks around head injury. To prevent head injuries on site we must first understand the risk. This will involve educating the supply chain and changing the industry perspective.

Worryingly, the majority surveyed (40%) either think that hard hats aren't being replaced after significant impact or within five years or simply don't know (32%). This is not only about educating the workforce, this is about best practice when it comes to wear and care of hard hats.

The danger of rotational forces

When asked if they knew which kind of forces the brain is most sensitive to, 13% of respondents answered that it was linear forces, 14% answered rotational forces and 70% said it was both. A further 3% said none of the above. In reality, the human brain, which is similar to water, is more sensitive to a rotational motion than a linear motion. Despite that, hard hats are currently evaluated to the EN 397 standard with linear forces, which predominantly represent dropped objects rather than slips, trips or falls.

Everyone needs to understand that there are limits to the protection they are wearing, and those limits are derived from the standard.

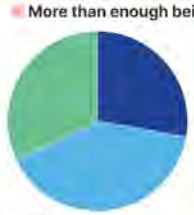
A significant majority (75%) said there was no requirement on operatives in their company to wear chinstraps. Two-thirds (66%) noted resistance in the workforce to using them. The initial acceleration involved in a slip, trip or fall is likely to affect a hat's stability and it may well be lost at the start of the incident. Chinstraps can save lives. Please remember: if it's not on your head, it can't protect you.

Chris Tidy is director of Specialist Training and Consulting Company and works for Mips as a product/ training specialist.

> **51% don't think enough is being done to inform the workforce of the risks**

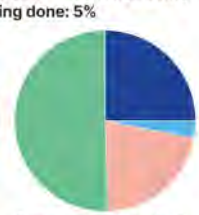
Is enough being done to inform the workforce of the risks around head injury? For example, training, H&S meetings etc

Not enough being done: 20%
Enough being done: 32%
More than enough being done: 5%



Typically are hard hats being replaced when they have received a significant impact, or within five years?

- Yes 28%
- No 40%
- Unsure 32%



Are you aware what type of force(s) a hard hat/safety helmet is tested to within the current EN 397 standard?

- Linear forces 25%
- Rotational forces 3%
- Both 21%
- Unaware of standard 51%

Is there a requirement for operatives to wear chinstraps on their hard hats your sites?

- Yes 17%
- No 75%
- Unknown 8%

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In association with ACO

Incorporating SuDS into urban environments

Water management is crucial in mitigating the impact of flooding, particularly in heavy rainfall. Recently, attention has turned to the role of sustainable drainage solutions (SuDS) in reducing the impact of the built environment on its surroundings. **Mark Halsall** takes a look at how SuDS can be incorporated into urban projects

ACO Stormbrixx provides high hydraulic capacity

There are two key challenges when designing drainage in urbanised areas – mitigating the impact of heavy rainfall and working within tight spaces. In urban environments there is less natural attenuation, and so water management systems have to be put in place to limit the risk of flooding. In locations where space is tight – and therefore building footprint must be maximised – innovative approaches are often required.

Think outside the box

Stormwater attenuation crates offer a vital tool in delivering sustainable drainage in tight areas. Geocellular structured systems, such as ACO's StormBrixx HD and SD, can provide high hydraulic capacity in a small footprint. Through patented brick bonding and cross bonding, the system can be configured according to the unique demands of a specific location. For example, a recent project, on Streatham High Road in London, involved a building with a basement car park. Alongside the proximity to the busy high street, this left little room for manoeuvre when it came to installing a water management system. The solution was to opt for StormBrixx HD tanks to be placed around the building perimeter, offering the right level of attenuation in a challenging location.

Keep it clean

The other major issue with limited space is the capacity to keep drainage operating at maximum effectiveness. Regular maintenance is crucial in ensuring the ongoing performance of attenuation solutions, as it helps to keep systems clear from debris and silt build-up.

> **Using an integrated SuDS scheme to manage water flow can greatly reduce a site's impact on the surrounding environment**

This is where it is important to incorporate access for maintenance at the design stage. When working with ACO StormBrixx HD and SD, it is possible to include built-in access chambers, which, combined with the open cell structure of the system, helps to ensure convenient maintenance and camera inspection.

Regular inspection of drainage systems can also play a role in preserving water quality. If water is allowed to flow freely into sewers, the risk of contamination is increased. Using an integrated SuDS scheme to manage water flow, especially when combined with treatment systems such as ACO's V-Septor, can greatly reduce a site's impact on the surrounding environment.

Clear and free

Urbanisation shows no signs of slowing down, which means contractors and building professionals will be increasingly tasked with delivering water management solutions in challenging locations and surroundings. The industry's focus on sustainability is also likely to intensify, meaning drainage is no longer purely a means to mitigate flood risk.

SuDS can help to ensure that building projects do not negatively impact the surrounding area, while simultaneously fulfilling the primary role of attenuation systems. Versatile products, such ACO StormBrixx, are designed to be suitable across a range of projects, including highly urbanised locations, which is going to become even more important in the years to come.

Mark Halsall is national sales manager (Stormwater Control) at ACO Water Management.

For more information, please visit: www.aco.co.uk/products/stormbrixx.

PHOTOGRAPHS: KEVIN HILL

Defying gravity in the Maldives

A new luxury hotel development in the Indian Ocean islands features an iconic art installation, the Skyspace. Timber engineering specialist and project team member **Kevin Hill** explains how the artist's vision became reality

It was the developer's vision to include iconic art pieces within the Fari Islands development, comprising a Ritz-Carlton and Patina Hotel – the largest luxury hospitality development undertaken so far in the Maldives.

American artist James Turrell, known for his installations giving experiences of light and space, was commissioned to create his iconic 'Skyspace'. The developer, Pontiac Land, also wanted to use the latest engineered timber technology for the first installation of this kind in Asia, to make it carbon negative.

Brazilian architect Marcio Kogan, who leads Studio MK27, was

100

Tonnes of carbon reduced by using a timber rather than steel or concrete structure

The design brief called for no visible beams or independent columns, inner supports or exposed connections

engaged to bring Turrell's vision to life, and Venturer was appointed early in the design process to find the right delivery solution.

The design called for a 400 sq m free-span roof with razor-sharp soffits and a 16 sq m hole in its middle. Although we work with some of the best timber engineers in the business, we doubted it could be done.

That's because when you remove the centre of a free-span roof it needs to defy gravity. If you think of iconic floating roofs such as that adorning Apple's Apple Park campus in Cupertino, California – the biggest carbon-fibre composite roof in the world – they tend to have complex structures in the centre that radiate outward. But the design brief called for no visible beams or independent columns, inner supports or exposed connections.

Over certain spans, engineered timber's strength-to-weight advantage diminishes so, with the owner's blessing, we evaluated a variety of different approaches.

Other Skyspaces had relied extensively on steel sections, but steel in the corrosive marine environment of the Maldives is not ideal and site welding is typically not allowed.

Taking inspiration from Apple, we contacted a professor at MIT and commissioned a feasibility study on using composite technology. The centre opening was the biggest challenge, but the composite solution seemed to favour more support at the hips and less along the continuous edge of the facade trellis that was critical to the aesthetic.

Code compliance was another restricting factor. It was hard to find recognised design codes we could rely on in order to maintain the professional engineer's endorsement required across the project.

Another restricting factor was uplift. The roof forms a 400 sq m wing and the lightness of composite was a drawback. Last, the proposed install methodology was based on large volumetric sectional components that were deemed hugely complex to ship and forward to site. Clearly, a flat-pack solution was the most logical approach.

Ultimately, we went back to engineered timber. A leading European timber engineer together with our manufacturing partners in Germany worked with us to conceive a solution.

We settled on an approach where each trellis member was assigned a corresponding roof member, the trellis was reinforced with a longitudinal timber edge beam and continuous longitudinal wedge. Several continuous laminated veneer lumber (LVL) beams within the roof structure, along with the LVL roof surface, acted as a diaphragm.

The resulting solution, designed within Eurocode 5, was more efficient than composite or steel in terms of structural performance, visual aesthetic and the client's budget.

Working with Studio MK27, we designed all components for manufacture and assembly, allowing a kit of very complicated components to be put together on site.

A key challenge of the trellis was the need to tie all the members together for it to act as a shear wall, and simplify installation by allowing the panelisation of wall elements.

Kevin Hill CV

- **Since 1995: Founder and MD, Venturer Timberwork, Singapore**
- **1992-95: Project manager, Four Seas Construction, Singapore**
- **1989-91: Site engineer, Britannia Construction, Cheltenham**
- **1988-89: Site engineer, Rush and Tompkins, Bristol**
- **1985-88: Management trainee, John Laing Construction, Bristol**

Skyspace Maldives (bottom of picture) is US artist James Turrell's first installation in the Southern Hemisphere

The team had to achieve absolutely smooth surfaces as a requirement

At the horizontal tie or connection between independent trellis components, we adopted a horizontal wedge comprised of 1mm-tolerance machined Borneo ironwood selected from an Indonesian forest certified by SVLK, the country's timber legality assurance system. We believe this is the first time hardwood from the east has been used with engineered softwood from the west in an integrated structural solution.

The roof structure was complex because hundreds of ribs are connected by half-housed lap-and-dowel joints to each corresponding column. These elements are then tied together with five varying-sized beams, again all half-housed with a main central beam at the ridge.

Thousands of notches were precision machined by CNC machines at the factory, as were the steel drift pin holes. Finally, the diaphragm sheathing was screw-fixed to both outer surfaces, in effect constructing a profile similar to an airplane wing of old.

We calculate that the Skyspace, after production, shipping and assembly, has offset or sequestered around 100 tonnes of carbon, equivalent to taking 20 cars off the road for a year. If built with steel and concrete, the carbon produced would likely be around 300 tonnes.

Kevin Hill MCIOB is MD of Singapore-based engineered timber specialist Venturer.

Construction rewards its digital innovators

The Digital Construction Awards are back and set to be bigger than ever in 2022

The Digital Construction Awards celebrate best practice and reward innovation in the application of BIM and digital technology in the built environment sector and will take place at a gala dinner on 12 July 2022 at The Brewery, London.

Partners for the awards are Digital Construction Week, the Chartered Institute of Building and media titles *Construction Management* and *BIMplus*.

Will Mann, editor of *Construction Management*, said: "In the wake of the Construction Playbook and the Infrastructure and Projects Authority's new information management mandate, now is the time to ensure the crucial work being done to modernise the industry is recognised."

Ollie Hughes, co-founder of Digital Construction Week, added: "To ensure the best of the best receive recognition, the awards will be judged by experts drawn from across the built environment sector. Our intent is that the awards will ultimately become the Oscars of the sector."

There are set to be more than a dozen categories:

- Digital construction project of the year – major project
- Digital construction project of the year – small project
- Digital transformation in a construction business – major
- Digital transformation in a construction business – SME

Now is the time to ensure the crucial work being done to modernise the industry is recognised
Will Mann, Construction Management

- Digital partnership of the year
- Delivering net zero with digital innovation
- Digital innovation and design
- Best use of data on a project
- Digital innovation and offsite construction
- Digital innovation and onsite productivity
- Digital construction champion of the year
- Digital construction lifetime achievement
- Digital construction rising star

The call for entries will start in January 2022. To register your interest, go to digitalconstructionawards.co.uk. To become a sponsor, email Dave Smith at dave@atompublishing.co.uk or Ollie Hughes at OHughes@divcom.co.uk.

The judges

The Digital Construction Awards will be judged by a panel of impartial and unbiased industry experts. The judges are acknowledged industry leaders, who represent a wide spectrum of disciplines across the industry. Among the judges are:

Mark Enzer OBE
Head of digital, Mott MacDonald

Sam Stacey
Challenge director – Transforming Construction, UKRI

Jaimie Johnston
Director, Bryden Wood

Neil Pennell,
Head of innovation, Landsec

David Philp
Director – digital consulting, strategy and innovation Europe, Aecom

Neil Thompson
Director, Atkins

Keith Waller
Programme director, Construction Innovation Hub

Anne Kemp OBE
Chair, UK BIM Alliance

Carol Massay
Head of construction, The Access Group

Paul Morrell OBE
Former chief government construction adviser

Michael Cook
Director, EY

Vicki Reynolds,
Chief technology officer, i3PT

Kathleen Fontana,
MD, Mitie Projects

Stephen Good
CEO, Construction Scotland Innovation Centre

Hannah Gibson
Innovation lead – Transforming Construction, Innovate UK

Hannah Vickers
Chief of staff, Mace

Fiona Moore
Interoperability technical lead, Department for Business, Energy & Industrial Strategy

Professor Jacqui Glass,
Vice dean research, Transforming Construction Network Plus/UCL

Alex Small,
BIM and digital platforms manager, Tata Steel

John Ford
Group BIM and digital delivery lead, Galliford Try

Javed Edahtally
Digital lead, Public Health England

Dr Marzia Bolpagni
Head of BIM international, Mace

Rosemary Nunn
Founder and MD, IK, The Innovation & Knowledge Agency

More judges are to be appointed.

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Amanda John
Edwin Coe

'An architect copied our planning appraisal. What can we do?'

CM starts a new contract clinic this month, in partnership with Decipher Consulting, to help readers who are wrestling with legal conundrums on construction projects. First up, **Amanda John** answers a question about the copying of a preliminary ecological appraisal report

THE QUESTION

An architect has taken a Preliminary Ecological Appraisal report produced by my company relating to a specific site, copied it and amended various sections to make it appear to relate to a different, nearby site.

The alterations that the architect made included inserting a new front page, changing the client name and site address, adding new instructions, changing the executive summary to include different site details, altering the recommendations table, the background to the site details, the site map, site feature descriptions and photographs to show a different site. They also removed the Phase 1 Habitat Survey map and inserted plans relating to a different site.

The local planning authority spotted that it was a specious report and rejected it. We do not want to damage the reputation of another professional, but we have since been instructed by our client to undertake another large Preliminary Ecological Appraisal and we are concerned our client will now have all applications very closely scrutinised by the planning authority.

The architect's behaviour is arguably a point of professional conduct which should be referred to the Architects Registration Board

THE ANSWER

There are three issues here. How the local planning authority (LPA) is discharging its obligations; the actions/behaviour of the architect in relation to the Architects Registration Board code of conduct; and potential breach of copyright.

The planning authority is obliged to review all applications, and associated documents, closely – regardless of the applicant submitting it. The fact that authority spotted that the report submitted by the architect was not accurate indicates that it is doing what is required of it.

Your concern regarding your client's future applications is likely to be unfounded. Furthermore, there is an appeals process if you consider that your client has been unfairly prejudiced. However, you cannot complain if the LPA acts in accordance with its obligations and scrutinises your clients' applications.

Point of professional conduct

In relation to the architect's behaviour, I understand your reluctance to cause another professional reputational harm, however their behaviour is arguably a point of professional conduct which should be referred to the Architects Registration Board (ARB). The architect in question appears to have breached the *Architects Code: Standards of Professional Conduct and Practice*, including acting with honesty and integrity, and maintaining confidence in the profession.

This is cause for a complaint to, and possible disciplinary action by, the ARB. You may not want to make a complaint, so a first step may be to write to the architect in question and seek explanation and assurances that they will not

plagiarise work in future. You may however be thinking of the wider impact on your clients and work and consider a complaint is appropriate.

A complaint to the ARB may not result in disciplinary action, and you can ask them for guidance on the situation; it may give you at least some comfort to speak with the ARB. Note that the ARB cannot deal with the underlying copyright issue, only the architect's behaviour, and possible breaches of the Architects Code.

At the very least, you own the copyright in your report and also the copyright in the report submitted by the architect insofar as it uses your material and is so similar to your own report that the provenance of it has been questioned. On the basis of the information you have provided, it would appear the architect has breached your copyright.

The likely remedy you could seek is a licence fee for use of your copyright. A copyright licence is standard in consultant appointments, though you may not have a separate licence fee to your usual fee for services. A licence fee is likely to equate to the fee you would have received had you been instructed to prepare the report or the fee you would have charged for someone to use the report. Rather than commencing legal proceedings, which will incur substantial legal costs, you might be able to negotiate with the architect for payment of that licence fee.

▲ At the very least you own the copyright in your report

Rather than commencing legal proceedings, which will incur substantial legal costs, you might be able to negotiate for payment of a licence fee for use of your copyright

Any negotiations will come with a cost (largely your management time and effort). A claim, if you decided to pursue the breach through the courts, will be costly in terms of both time and fees. You should think carefully about whether you want to pursue this. It does not sound as though the architect's report was competently complied and executed; is it something you want to be associated with? Your name was not on the copied report therefore there does not appear to be a loss of reputation for you.

There are no easy answers here and you will need to decide what you are comfortable doing and living with. That might be an informal chat with the architect (along the lines of: we've noticed the copyright breach; please don't do it again) to making a complaint to the ARB or pursuing a claim. These options are not mutually exclusive; you can escalate things if you wish. However each comes with its own costs and toll on your business.

If you are minded to pursue a claim, please seek formal legal advice. Otherwise, have a chat with the ARB, which may be able to give you more specific guidance if you provide them with more information.

Amanda John is an associate at law firm Edwin Coe. Question for our contract clinic panel? Email: will.m@atompublishing.co.uk.

This much I know
Tim Balcon
Chief executive, CITB

'The industry shapes people personally and professionally'

Tim Balcon has gone from apprentice to CEO, from building technical skills to leadership

What do you remember from your first project?
My first big project was to develop a skilled workforce to fulfil a major government initiative to install over a million heating systems, at a time where there was nowhere near enough skills and people to deliver this. We identified that if we continued to develop skills in the way we were, we would never meet the targets, so we needed to overhaul our approach and think differently.

The initial plan was met by a lot of cynicism but as soon as industry saw the business opportunities that were being created it soon got behind it. We spent a lot of time teaching small businesses how to take on people who were still learning and how to employ a diverse workforce.

For me the success of the project was not only in it meeting its objectives but seeing the businesses that engaged in it thrive.

What was the best advice you were given?
Never forget where you come from. It's important that you stay true to who you are.

Which project that you worked on are you most proud of?
The project was called Ambition Energy. It aimed to train 2,500 people who were long-term unemployed to be heating installers in partnership with Jobcentre Plus.

The project more than achieved its initial objective and six months later over 2,000 were still in employment. I am proud of it not only because of the impact it had on those people's lives, but also the impact it had in terms of fairness and inclusion in that industry – it was the most successful, diverse and inclusive recruitment for the sector ever. As a result, it was used as a blueprint for a wider government recruitment initiative at the time.

Who do you most admire in the industry, past or present?
I have great admiration for any small business owner. To have the initiative and bravery to do something completely on your own, without a safety net, is truly courageous.

What advice would you give to someone starting in construction today?
It's important that you keep learning. It's as simple as that.

What one thing would you change to make careers in construction more appealing?
I am keen to ensure the narrative about construction changes. I feel strongly that people should understand opportunities in construction are not just about a job and an income.

The construction industry shapes people personally and professionally. It gives you a richness of skills that far outweigh any other career – skills for life and life skills.

What has changed the most about construction since you've been working in it?
What has surprised me most is how much – having started as an apprentice and come back into it 40 years later – it hasn't changed, but I can see it being on the edge of transformation.

What's the most valuable training you've received and why?
I was coached by my first chair and he supported me to move from being technically able to being a leader. The greatest skill he helped me to develop was to view things from high ground.

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Show me how

Job spotlight
Bev Sexton
HSEQ and training manager,
Jackson Jackson & Sons

Accredited success

Bev Sexton takes responsibility for the systems that make all the difference to the lives of elderly and disabled social housing residents. She tells **CM** all about it

Fitting a new roof for a retirement village in Leek, Staffordshire

You have recently passed your retrofit coordinator exam. Can you tell us what that is and why you chose to take it?
The role of the retrofit coordinator is a new position created for the standard PAS 2035. It is about retrofitting homes to make them warmer and safer under the government Green Homes scheme.

I was asked if I would be prepared to take on this role on behalf of the company as I already hold qualifications as a domestic energy assessor and Green Deal adviser. I knew it would mean helping to make residents lives better, which was why I accepted the role.

The training course was online, with reading material, end-of-unit assessments and – when all 12 units were completed – a case study which I had to feed back to my assessor.

Tell us about a typical day in your job?
A typical day would involve maintaining the management systems for our ISO accreditations for quality, health and safety and environment.

I also manage the health and safety for the construction sites such as completing construction phase plans, undertaking site audits, carrying out risk assessments and writing method statements.

I regularly attend meetings with clients. I also manage our in-house training academy which is approved by CITB and do most of the health and safety training myself. I also manage the company's many accreditations such as CHAS, PAS 2030 and Constructionline, to name a few.

The best thing about my role is that no two days are the same. I enjoy coming to work and not many people are able to say that
Bev Sexton,
Jackson Jackson & Sons

What do you love about your role and what are the challenges?
The best thing about my role is that no two days are the same and I am always meeting new people as we work predominantly in the social housing arena.

This makes the job more interesting as you do not get into a circle of doing the same things over and over again.

We work in properties where there are elderly and disabled residents and my role includes helping to protect these residents while we are undertaking the work. I enjoy coming to work and not many people are able to say that.

I do voluntary work with two local charities helping them keep their health and safety up to date. I am also a STEM ambassador, visiting schools and colleges to talk about careers in the construction industry.

My biggest challenge? There are not enough hours in the working day, which is why I am currently training a health and safety apprentice.

CIOB Community

CIOB vice president addresses MPs' group

CIOB presence at Woman And Work APPG is vital, says Sandi Rhys Jones

CIOB vice president Sandi Rhys Jones spoke at a recent meeting of the Women and Work All Party Parliamentary Group (APPG).

Co-chaired by Jess Phillips MP and Laura Farris MP, the APPG offers a forum to constructively examine and debate the role that policymakers can play to deliver gender balance within the economy. Having a presence is crucial for CIOB and the industry, Rhys Jones said.

"I'm very pleased to be there and it was a very good session," she said. "The APPG gives a voice to our industry and the women in our industry. We are showing the value of women but it's also how you celebrate what the industry does and how it makes a difference.

"It's not just about more women and equal pay – it's broader; it's about demonstrating the fantastic nature of the industry and the wow factor it has. Rishi Sunak commented about how many of HS2's top engineers are women – women in transportation are doing effective, incredible things.

"What is important for the CIOB is getting the opportunity to champion the industry – and getting a seat at the table enables us to talk about the CIOB charter, for instance."

Rhys Jones said it was a step towards getting construction represented at higher levels. "It's important that we get the construction industry a seat at the table at the broader conferences – the ones that discuss the bigger picture, like at Chatham House meetings where Amex and Coca-Cola give great presesentations.

"Where is our industry? Because if they are talking about the capacity of nations we should be asking: Who is building the infrastructure? The roads? Supplying the water? If you have a seat at the table then you have influence and that's what construction needs."

Read more about the APPG here: https://connectpa.co.uk/the-women-and-work-all-party-parliamentary-group.

CIOB vice president Sandi Rhys Jones

> **What is important for the CIOB is getting the opportunity to champion the industry – and getting a seat at the table enables us to talk about the CIOB charter, for instance**
> Sandi Rhys Jones, CIOB

ROB CURRIE

CMYA winner gives webinar on winning project

Marc Burton talks about Jersey Nightingale project

Marc Burton, the winner of the 2021 Construction Manager of the Year Award (CMYA), hosted a webinar in November on the Nightingale hospital project that won him the prize

Burton was interviewed by Wessex & Channel Island Hub chair Bertie Green on the challenges and lessons learned when constructing the hospital in 25 days during a pandemic.

He talked about the teamwork involved with organising such a large-scale project, facing time limitations and supply chain issues.

Graduation ceremonies back in person

For the first time since the start of the pandemic, CIOB members receive awards at a live ceremony

CIOB graduates in Clothworkers' Hall

ADAM DUKE PHOTOGRAPHY

Over the last three months CIOB members who have achieved FCIOB or MCIOB were able to attend an in-person graduation ceremony to have their status officially conferred. On 22 October at Clothworkers' Hall in the City of London, there were two ceremonies, one in the morning and one in the afternoon.

New Fellows
James Bateman
Keith Burns
Marc Burton MBE
Craig Garbutt
David Horton
Roger Huntingford

New Members
Gary Aarnes-Olsen
Saeed Adam
George Agbenyikey Jnr
Thomas Anderson
Andrew Barker
Hentie Barnard
Warren Beavis
Daniel Bell
Paul Bell
Khalil Benhelal
Carl Bennett
Sean Bennett
Martin Blakemore
Gabriel Boakye
Debra Borley
Carl Brevitt
Andrew Brockway
David Bucknell
James Callaghan
Junia Charlton
Alaur Chourdhury
Richard Cooper
Allessandro Cuccurullo
Denver De Costa
Senura Devage
Kieran Dooley
Benjamin Dunn
Christopher Ejeh
Peter Finch
Daren Fletcher
Harold Galloway
Ray Goddard
Mark Golden
Martin Harris
Lee Hesler
Gary Hines
Mark Kindley
Isaac Hodgson
Duncan Holmes
John Hooper
Leo Jacob
Stefan James
Niall Keogh
Shane Kirby
Chris Lawrence
Clare Llewellyn
Phil Lucas
Leonard Martin
Peter McGann
Alex McGregor
Liam McGuigan
Alexandru Merean
Keith Moloney
Prasanth Muthurajah
Edmond Ndregjoni
Justin Nseya
Magdalena Opala
Greg Ozokwelu
Diego Pasqualato
Westley Pycroft
Andrew Rae
Paul Roberts
Ian Robertson
Michael Russell
Marina Ryan
Rod Scott
British Solanki
Richard Stone
Andre Tapponnier
Benjamin Thornton
Philip Townsend
Hryhoriy Tuka
Du-Andre Vlok
Sharnell White

New CBC
Sagacity Consultants Ltd
Solidbond Constructions Ltd

Academics pool lessons learned from pandemic teaching

Wolverhampton hosts CIOB education event

More than 20 CIOB academics gathered recently at the University of Wolverhampton to discuss lessons learned about student engagement during the pandemic.

Representatives from CIOB-accredited universities across the East and West Midlands (pictured) gathered at the £120m Springfield Campus and attended various workshops discussing the impact of coronavirus on higher education.

Challenges included adapting lectures to online delivery, as well as limited options to build relationships with students and the difficulty of delivering practical teaching in a digital environment.

Positive lessons learned included better time management, better technical skills and increased student attendance.

The event was hosted by Hassana Ahmed, senior qualifications liaison manager at CIOB, and Ruth Kennedy-Green, regional manager, CIOB Eastern and Midlands region.

The academic audience also heard how CIOB provides high value to both university students and academics, how it supports student career development and about its ambition to become and end-point assessment organisation on construction-related degree apprenticeship standards in England.

Industry and government discuss net zero

A minister, CIOB, a consultant and a main contractor share their views on the best ways to deliver the government's net zero strategy across the Midlands

From left: Alex Carter, David Cadiot, Eddie Hughes MP and Paul Chatwin

A unique CIOB event in November brought together experts from the government and the construction supply chain to see how net zero can be delivered across the Midlands.

Kicking off the event, attendees heard from Eddie Hughes MP, the minister in the Department for Levelling Up, Housing and Communities (DLUHC) responsible for climate change and net zero.

Hughes discussed the DLUHC's recent move to Wolverhampton and the opening of its second headquarters there. He reflected on attending COP26 and the DLUHC's ambition to meet the UK's net zero mission through the likes of the Heat and Buildings Strategy.

Daisie Rees-Evans, policy officer at CIOB, presented the view of the institute and its activity on sustainability and achieving net zero.

CIOB made clear that the sector cannot work in silos and the industry needs a coordinated, long-term action plan. The Construction Leadership Council's National Retrofit Strategy, which it has been actively campaigning on, is seen as a key mechanism to achieving net zero.

The government's recent Heat and Buildings Strategy was highlighted as a missed opportunity.

Rees-Evans said: "Within CIOB, we are looking at how sustainability training can be incorporated better into our educational framework, and are working with other bodies to provide resources on sustainability, such as recently supporting the BECD [Built Environment Carbon Database] which will promote consistency in how we report and measure carbon emissions. I hope to see more events and discussions like today taking place on a raft of issues."

Attendees also heard from Alex Carter and Paul Chatwin of multi-disciplinary engineering consultancy Cundall, who discussed its approach to best practice to successfully deliver low and net zero carbon designs and presented three current projects in the Midlands.

David Cadiot, executive general manager, UK regions, construction – Europe at Lendlease, delivered the final presentation, giving a main contractor's perspective on how net zero can be delivered in practice. He detailed Lendlease's ambitious carbon targets and how it is ensuring its projects utilise eco-friendly sourced materials and power.

> **We are looking at how sustainability training can be incorporated better into our educational framework, and are working with other bodies to provide resources on sustainability**
> Daisie Rees-Evans, CIOB

OBITUARY SIR JOSEPH DWYER 1939-2021

CIOB past president Sir Joseph (Joe) Dwyer has died age 82.

Dwyer was chairman of Wimpey, masterminding its transformation from civil engineering contractor to housebuilder and taking profits from £15m to £451m.

He was perhaps best remembered for the Channel Tunnel – he was co-chair of TML, the Anglo-French consortium.

Dwyer started in construction at 16 as a tea boy, then chain boy, in Liverpool for Wimpey – leaving in 1999 after 44 years.

He eschewed retirement in favour of becoming chair of Liverpool Vision, the UK's first urban regeneration company. He was knighted in 2001.

Belfast firm notches up the professional credits

Mascott Construction celebrates at CIOB conferring ceremony

Mascott Construction (Europe) has been celebrating the professional development of its team members following the recent CIOB conferring ceremony at Queens University Belfast.

Geraldine Conway, Scott Montgomery and Kevin McGarry received their Chartered Membership certificates with managing director Jonathan Payne receiving his Fellowship.

The company also received its Chartered Building Company certificate, making it a memorable day for everyone.

"Mascott is very much a people-centric company, and we firmly believe that our staff are our greatest asset," said Payne.

"Achieving the highly coveted status of Chartered Building Company was a natural progression for us as it was in line with our company values and ethos."

Mascott is already a CIOB Training Partnership. Another staff member, Noel McKee, is a CIOB Trustee, while Payne is vice chair of the Belfast Hub.

Passivhaus innovator achieves CBC status

Passivhaus expert Kiss House becomes a CIOB Chartered Building Consultancy

Passivhaus expert Kiss House has secured CIOB Chartered Building Consultancy (CBC) status.

The Reading-based firm delivers high-quality Passivhaus-certified homes that are manufactured off site.

Becoming a CBC was a logical move, explained co-founder and director Mike Jacob. "Because Kiss House is at the cutting edge of construction innovation and best practice, becoming a CIOB Chartered Building Consultancy was an important goal for us," he said.

Jacob, already a CIOB chartered member, previously ran another CBC, Trunk Low Energy Building.

Kiss House is developing very low carbon building materials, systems, and products with the potential to improve all residential buildings. "We have a multi-storey single-dwelling Passivhaus construction system in development allowing the rapid onsite assembly of high-specification homes using low-complexity, repeatable and clean methods," explained Jacob.

"The system is intended to deliver both Kiss House homes and homes for other providers, making Passivhaus more accessible. The broadly timber system uses different grades of timber in its construction to produce high quality, very low embodied carbon units that perform ultra-efficiently during the life of the building.

▲ Exterior view of a four-bedroom Kiss House in situ

▶ The open-plan interior of a finished house

Team performance webinar kicks off 2022 events

CIOB in the Midlands has a packed diary of events

The Northampton Hub will kick off the new year on 11 January with inspirational speaker Nick Bramley, the CEO of Impactus Group, talking about Creating Your High Performing Team in 2022.

Bramley will share his top 10 tips for driving performance excellence in a team. He promises to share information on creating the right environment in which to develop high performance – all carefully tailored to the construction industry.

On 26 January members can update their knowledge with a CDM – Getting Ahead of the Curve webinar. This will be delivered on by Nattasha Freeman, director for safety, health, environment and quality at Turner & Townsend.

Following the Hackitt Report recommendations, Freeman will be looking at the impact on current legislation, the mindset behind driving change, especially the gateway system and the new dutyholder roles, including a brief look at the definition of competence.

Amid talk of climate change, on 2 February the hub is offering a webinar on How Poor Construction Quality can Impact Flood Resilience. This live event will outline design principles based on approaches in England, and provide examples where effectiveness is lessened due to poor construction quality.

This session features two speakers from Mott MacDonald: Fiona Barbour, global practice leader for water resources and flooding, and Pablo Souto, associate.

For more details and bookings contact sshort@ciob.org.uk or gfloyd@ciob.org.uk.

Members tee off in Belfast

Farrans Construction takes home Team Prize at Belfast Hub golf event

The sun was shining at Dunmurry Golf Club outside Belfast for the recent CIOB golf event organised by the Belfast Hub committee.

Farrans Construction won the Team Prize, with Warren Wright pipping Brad Walker of Housing LMS to the best gross.

The Individual accolade was closely contested. Michael O'Shea of Quigg Golden claimed the top spot, with Chris McNamara from Hays in second place and Martin Lilley from Daikin Air Conditioning taking third place.

Sponsors were Farrans Construction, Titan Air Conditioning, Training LMS, Housing LMS and Hays.

▶ From left: Warren Wright, Gerard Fennell, Michael Lavery and Kyle Dobbin of Farrans


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One to watch

Emily Cardy, project manager, Davlyn Construction

You had a less-than-traditional route to construction? Tell us
I have a huge passion for houses and development but studied business and media. I bought my first house at 19 and began doing it up myself. I was in love with the process. I began working for a local property maintenance and electrical firm, quickly progressing to contracts management, before taking the company over when the owner retired.

I was forced to give up the company when I had my first daughter as she was poorly and in hospital for almost two years. During that time I decided to go back to education, studying building surveying online to get the correct Level 4 qualifications, and applied to Nottingham Trent University. When my daughter returned home, and my son was born, I went to university full time, working evenings and weekends.

By my second year, I secured a job site managing, and began working full time around studying full time. It was a bit of a juggling act, but I made it work. I quickly progressed to project management. By the time I graduated, I was managing my first project solo – a £5m new-build warehouse.

You're involved with the CIOB's work on EDI. Why?
I got involved with the CIOB in university, becoming the CIOB Novus representative talking about being female in our industry. The biggest plus of working with the CIOB is the huge, growing network to work with to improve the future of our industry. We need to ensure women and diverse/minority groups get the support and rights/opportunities they are entitled to, but it also is working to help the industry see that they bring skills, knowledge and alternative perspectives.

It is my aim also to share the huge number of career options to future generations. I had no idea about the careers available in construction at a young age. I hope to make it as readily accessible to every young person as a career in marketing or sales, or any career!

You were named Midlands Woman of the Year 2020 by Women in Property. Tell us about that
I was nominated by my university due to working in the industry and developing my own properties while studying full time while a single mum. I was able to express my plans for my career and how I would like to help the industry, which impressed the judges. That one opportunity gave me the confidence to talk about what I wanted out of my career and to approach new people. I didn't enter with the aim to win, I entered with the aim to meet people, and I was extremely grateful and surprised that I won.

What would you say to any students considering a career in construction?
Do it, and aim high. Don't ever be afraid to question things, explore roles, put yourself out there or network. Go to university open days or contact someone – social media in our industry is growing and that is so positive. It makes people accessible! Most of the people sharing their experiences want to bring more people into the industry and would go out of their way to answer questions or set up work experience/site visits.

How do you spend your spare time?
When I'm not doing up properties, I am a total gym addict. I work out five or six times a week, with a mix of boxing and weightlifting. I am confident that 2022 will see my boxing debut, and I am ultimately aiming to go pro! Having a hobby is essential for me to stay happy and focused.

Morgan Sindall to present on its Circular Twin project

The contractor will be talking to CIOB members in January about its innovative carbon reduction scheme

▲ The project is a digital version of a school

Morgan Sindall will talk to CIOB members in January about its carbon reduction project Circular Twin. The landmark study involved digitally building a school that has already been completed and reworking the scheme from start to finish so that each decision and design choice favoured a lower carbon outcome.

Morgan Sindall's Circular Twin project lead Chris MacDonald, head of carbon and environment Tim Clement, and director of social value and sustainability Louise Townsend will be joined by Philip Watson, director, head of design at HLM Architects.

Morgan Sindall claims the project is possibly the first in the industry to put into practice the strategies of the Construction Playbook and guidance from the UKGBC – and proves how the ultra-early alliance of designers, clients, contractor and supply chain leads to significant reduction in whole-life carbon for modest cost uplift.

The event is on 13 January at 12pm and can be booked via the CIOB events page.

TRUSTEE OPPORTUNITY OPENS UP

If you are an MCIOB or FCIOB member and want to help CIOB grow its influence on the big issues, a Trustee position could be the platform for you.

In June 2022, three Trustees will step down and the search is on for strategic thinkers and influencers who can join the Board of Trustees for a three-year term. Two will be elected through a ballot of members; a third will be selected by the Board.

Applications close on 12 January 2022 at 12pm GMT (midday). Find out more on the CIOB website or contact the governance team at governance@ciob.org.uk. All enquiries are treated in strictest confidence.

The upgraded Denmark Hill Station

Project manager Christopher Lamb and the station's new entrance facilities

Track record

Christopher Lamb, project manager and principal designer with Invvu, talks us through his Denmark Hill Station project – the 'first climate-positive station in Europe'

In September 2021, the new Denmark Hill Station entrance was officially opened, and major station enhancements were revealed. A job which historically should have taken around five years from initial concept to completion was condensed into 30 months, all against the backdrop of a global pandemic.

Denmark Hill Station is one of the busiest suburban stations in London, with over seven million passengers each year. Sustained daily usage and significant footfall at peak periods (expected to grow exponentially over the next 20 years), meant the station was in need of upgrading. Prior to the upgrades, congestion was a real issue, with passengers taking up to 10 minutes to leave the station.

Invvu Construction Consultants was commissioned by Network Rail and Govia Thameslink Railway to design a new entrance to the station, upgrade existing facilities and provide support for the build process.

As project manager and principal designer I was key to the daily management of the project, building relationships with all the collaborators and making sure the works were completed on time and within budget.

I was also responsible for pushing forward the research and use of sustainable techniques and technologies crucial to the project and key to the significant recognition the project has received – with the station dubbed "the first climate positive station in Europe".

Christopher Lamb CV

- **Project manager, Invvu, Sept 2015-present**
- **Site manager, Walker Construction, Jun 2013-Sept 2015**
- **Contracts programmer/ technical assistant WSS Construction, Consultants 2012-2013**
- **Multiple roles, Southern Formwork, 2011-2012**
- **Education: Swansea Metropolitan University, BSc (Hons) Project & Construction Management**

This accolade arises from the use of photovoltaic film on the station roof and platform canopies, which generates more power than it consumes, with any excess power returned to the National Grid.

The project also received Highly Commended in both the Sustainable Business and the Infrastructure Achievement of the Year categories at the National Rail Awards, as well as in the Environment and Sustainability category at the Railway Innovation Awards.

This project has been exceptionally rewarding, while offering challenges to the entire team. The collaboration, communication and commitment of the team while delivering during a global pandemic, has highlighted our resilience to adapt, change and discover new ways of working.

To be given the remit to research and develop sustainable technologies within the design was a key aspect that we enjoyed and we feel we have left a legacy for other projects.

Covid was a huge curveball, but it provided us with new and efficient ways of working. Microsoft Teams was a gamechanger, in terms of being able to turn things around quickly. Teams meetings have become a standard part of our daily operations and it's working well for everyone.

In association with BLUEBEAM

Taking the next tech step

Bluebeam introduces a new client-focused guide to assessing digital tech needs that it has developed with CIOB

We seem to have reached a turning point when it comes to the digital transformation of the construction sector. For one thing, it no longer seems to be a question of whether organisations should invest in digital skills and tools. Driven in part by the need to respond to the pandemic and find new efficiencies and ways of working, technology adoption is moving forward at an improved pace.

We did some customer research in the summer and found that nearly 70% of companies in the sector had either implemented new technology solutions or were in the process of doing so. However, technology does not stand still and new tools are coming to market all the time. Staying on top of the latest construction technology can be tricky, with the broad range of options available.

Clients can specify how technology should be integrated through the supply chain

For organisations, an awareness of both the digital landscape and their internal capabilities and resources is important. Taking stock of what is working and what needs adjustment should be a regular task for everyone.

It is for this reason that we have worked on a guide with the Chartered Institute of Building (CIOB) to help people understand, assess and implement new solutions within their businesses. Where we think it differs from other guides is that it focuses on the client.

A lack of industry coordination, integration and understanding of the best workflows means that many clients are not benefiting from the best-case scenario when it comes to software solutions and technology.

The first step for clients should be to look straight at their overall strategy. What are they trying to achieve and how can technology help? Then, it's time to look at what is available, including any existing solutions within the organisation.

At this point it is important to understand what the benefits will be, as well as the capability and skills internally. You need decision-makers who understand the wealth of options available, and the key terminology used in construction software and technology. Being clear about what you are trying to achieve means that you are more likely to implement the right solution, avoiding unnecessary cost and project complications.

An implementation programme that is heavy on internal communications and engagement will help to drive a successful change process too, ensuring a broader understanding and better adoption rates among staff rather than a limited few.

The first step for clients should be to look straight at their overall strategy. What are they trying to achieve and how can technology help?

As well as improving their own organisations, the opportunity is there for clients to lead others in the supply chain through the standards and principles they set for projects.

It all starts at the beginning of the procurement process. While setting out the requirements for the project, they can specify how technology should be integrated. This can include specific tools, desired workflows and the processes for incorporating project information with existing business data and systems.

If you need help in setting these areas, previous projects offer a good opportunity for learning. This process often flags areas where intervention, such as a new system or approval point, will ensure a better result in the future. This can also be used to help inform the creation of relevant KPIs for the project.

The industry is full of challenges and there is much available that can improve the full construction process, from initial design through to the occupation and management of the final building. Our aim is to give clients the understanding of how technology can be effectively harnessed so that they can achieve the outcomes that they desire.

To take stock of your own digital journey and understand how you can influence change, visit https://go.bluebeam.com/empower-clients to download your copy of the guide.

GCR

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Global Construction Review tracks the complex flows of money, ideas and talent to provide a world view of the built environment business.

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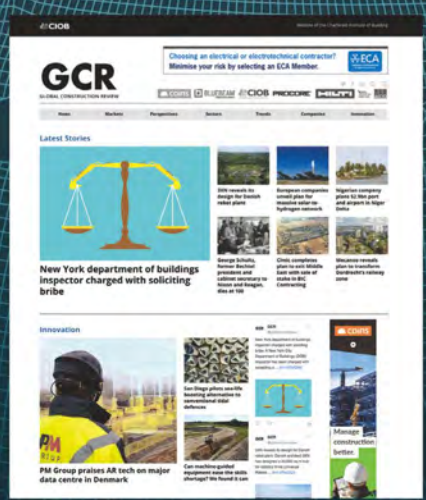

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Diary dates

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

Creating Your High Performing Team in 2022
11 January 12-1pm
In this session Nick Bramley from Impactus will share his top 10 tips for driving performance excellence in your team. A great start to the year for those leading big or small teams and for those with or without previous leadership experience. See p51 for more details.
Contact: sshort@ciob.org.uk

Circular Twin - A Contractor's View
13 January 12-1.30pm
The Morgan Sindall Construction team has worked with leading businesses from different disciplines within the built environment on an industry-first digital twinning project that will challenge existing design, procurement and construction practices to deliver low-carbon buildings. See p54 for more information.
Contact: hhosking@ciob.org.uk

A Funny Thing Happened on the Way to the Employment Tribunal
20 January 1-2pm
David Gibson, partner at Burnetts Solicitors, takes you through 10 key cases that have popped up in the Employment Tribunal in the last 12 months and highlights some lessons for employers.

This presentation includes what constitutes a fair dismissal, bonus entitlement, discrimination claims, whistleblowing and key health and safety advice in the workplace.
Contact: dthorpe@ciob.org.uk

Site visit to Bank House
27 January 12-2pm
Newcastle upon Tyne
Join the Newcastle Hub for this opportunity to visit the Bowmer & Kirkland site at Bank House.

Bowmer & Kirkland has been awarded the contract to construct a high-quality office scheme on this prominent city-centre Newcastle site by Taras Properties.

The redevelopment of the former Bank of England site at the junction of Pilgrim Street and Swan House roundabout will see construction of Bank House, a 14-storey, 120,000 sq ft, Grade A landmark office building, with complementary ground floor retail uses, which will form the catalyst for the wider East Pilgrim Street regeneration area development proposals.

The scheme will also involve public realm improvements incorporating planting, new seating areas and realignment of the junction of Pilgrim Street with the roundabout.
Contact: dthorpe@ciob.org.uk

Construction Law: More Case Studies
25 January 6-8pm
It is important to be up to date with the most recent changes in construction law, so you don't fall foul. In this webinar, presented by Tony Clough, you will be taken through three recent construction law case studies. You will have the chance to see how these rulings are impacting the built environment.
Contact: abernal@ciob.org.uk

CDM: Getting Ahead of the Curve
26 January 12-1.30pm
Learn from the best with this Construction Design and Management Regulations (CDM 2015) session delivered by Nattasha Freeman, director for safety, health, environment and quality at Turner & Townsend. See p51 for more information.
Contact: gfloyd@ciob.org.uk

Public Procurement Post Brexit
27 January 6-7pm
With major changes to public procurement on the horizon, this update from Clarkslegal and Strategic Proposals is more important than ever.

Everyone working in public procurement will be affected by the latest changes.

This webinar will cover the essential information you need to know in the following areas:
- Future of public procurement after Brexit
- By-passing the rules – urgent public procurement during the pandemic
- All key legal developments on challenging procurement awards from the last year
- How to bid for and win work in changing times
- The impact of the pandemic on bidding teams.

Contact: abernal@ciob.org.uk

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

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