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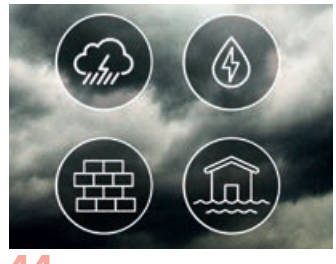
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MUSEUM OF LONDON

Art of Building competition winner

'Bricks' by Belgium's Alain Schroeder became this year's Art of Building Judges' Choice winner. The photo reflects the dangerous conditions some people work in at brick factories in Bangladesh.

Balfour Beatty Vinci assembles HS2 tunnel boring machine

A 90-strong specialist team assembled the 1,600 tonne machine set to build the second bore of the HS2 Bromford Tunnel in Birmingham. Two 600 tonne cranes lifted the huge 125 tonne cutterhead into place at the front of the 125m-long machine in the pit bottom.

Dr Claire Handby FCIOB joined a Hilti round table dealing with construction's carbon reduction challenge and the role of digitisation, see p36-40

Built heritage at Blenheim Palace

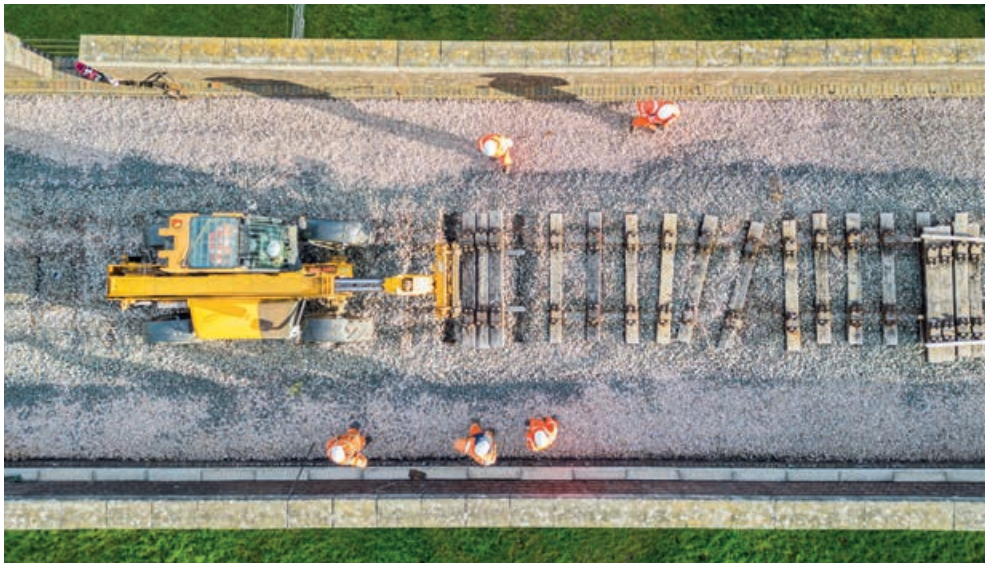
Ahead of National Apprenticeships Week this month, Aimee-Anna Akinola recently completed a project management apprenticeship role at Blenheim Palace. She will soon be a construction project manager working on restoration projects across the whole of the Blenheim Palace World Heritage Site.

Floating crane in South London

A 'floating crane' is aiding construction of a student accommodation tower by London Bridge station. The crane sits on steelwork which extends off the building structure to save space. Mace is building the project for Greystar.

Carbon neutral scheme in Westminster

FM Conway laid a new road surface on Elmfield Way, in the London Borough of Westminster, containing 92% recycled materials. The project used low-carbon techniques to achieve a total embodied and operational carbon saving of 78%.



JACK BOSKETT MEDIA

Waterproofing of the Stanway Viaduct

Gloucestershire Warwickshire Steam Railway appointed Walsh Construction to repair the 120-year-old Stanway Viaduct, which carries the railway over a valley north of Toddington station. The work involves the removal of track and ballast and replacement of the deck.

#PPEthatfits

For more information on the CIOB's campaign, go to: www.ppethatfits.com

P12 Caroline Gumble: Construction safety stats show why our #PPEthatfits campaign matters

Considerate Constructors Scheme mandates PPE for women

The new requirement for gender-inclusive PPE follows the launch of CIOB's #PPEthatfits campaign, reports **Nadine Buddoo**

▲ The CCS joins CIOB in campaigning for inclusive PPE on building sites

The Considerate Constructors Scheme (CCS) has announced a new requirement which mandates the provision of women's PPE across all registered sites in the UK.

The change follows work by the CCS in 2022 in collaboration with quantity surveyor and equality advocate Sinéad Clarkson with regards to the availability of female sanitary products and gender-inclusive PPE on construction sites.

At the time, the CCS rejected changes to the Code of Considerate Practice relating to female PPE as it determined there were sufficient legislative protections in place.

However, following the launch of CIOB's #PPEthatfits campaign and research published by the National Association of Women in Construction (NAWIC) Yorkshire, it acknowledged there is more work to be done in this area.

National monitoring

The CCS's Code of Considerate Practice is subject to routine monitoring by a national team of monitors.

According to the CCS Monitor Checklist 2024, which highlights specific areas monitors should consider when reviewing conformance, sites must provide "appropriate, well maintained administrative controls – machine guarding, PPE (suitable PPE available in a variety of styles/sizes [including female sizes])".

Katy Robinson, senior project manager at East Riding of Yorkshire Council, who worked closely with the CCS to establish the new requirement, said: "I am certain that this move will encourage companies and even other accreditations to implement this change across the construction industry, and beyond."

> **We are delighted to play our part by promoting the provision of female-specific PPE on sites that sign up to our Code of Considerate Practice**
> **Philip Sayer, Considerate Constructors Scheme**

Robinson, also a campaign manager for NAWIC Yorkshire, added: "Even though well-fitting personal protective equipment should not be seen as best practice, it should be the minimum standard, this move from the Considerate Constructors Scheme is a big step in the right direction."

#PPEthatfits campaign

CIOB's #PPEthatfits campaign was launched last year. The initiative aims to address widespread inequalities in PPE across the industry.

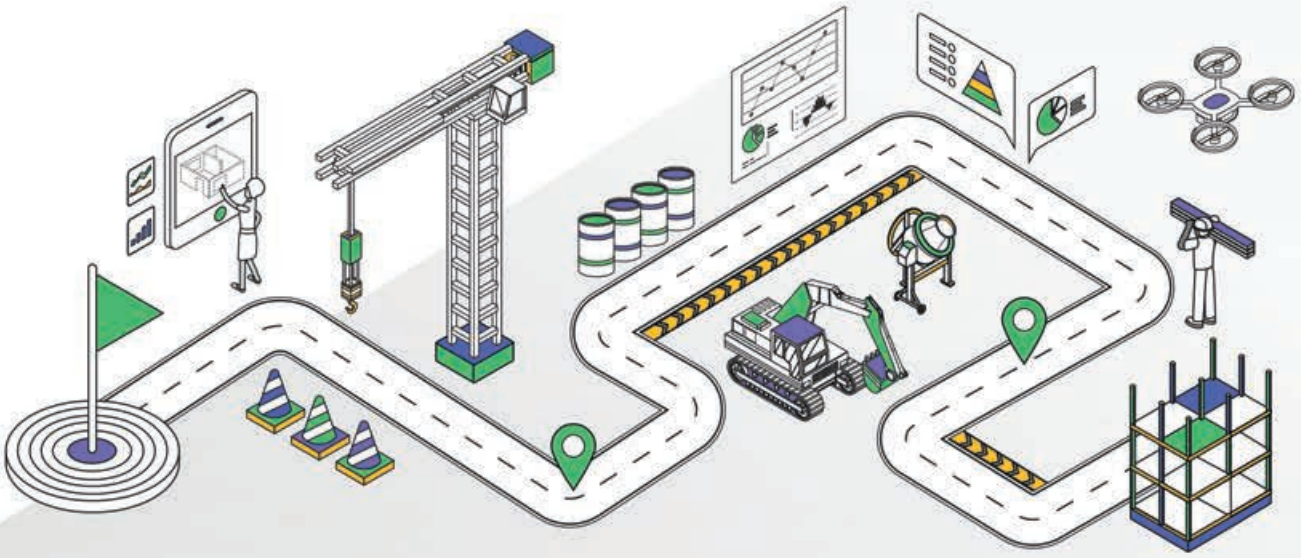
CIOB president Sandi Rhys Jones said: "The commitment from Considerate Constructors to support mandatory provision is a wonderful example of how collaborative working, supported by facts, can result in practical outcomes that will benefit the sector as a whole."

Philip Sayer, head of assurance and challenge at the CCS, said: "The CCS is committed to improving inclusivity and diversity in the construction industry and helping to address its skills gap.

"Improving access for women in the industry is integral to this, and we are delighted to play our part by promoting the provision of female-specific PPE on sites that sign up to our Code of Considerate Practice."

CIOB

Mapping your digital transformation



Autodesk and the Chartered Institute of Building (CIOB) partnered to survey 65 companies from across the built environment to see how companies are embracing digital transformation.

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Read the report:
www.autode.sk/ciob-insight-report

AUTODESK

Building more homes 'must not be at expense of quality'

Chair of APPG for SMEs and other policymakers met in the House of Commons to discuss CIOB's report on new homes quality. By **Cristina Lago**

▲ CIOB CEO Caroline Gumble with APPG chair Andrew Lewer MP

Accelerating construction of new homes should be possible without compromising on housing quality, according to the chair of an influential MPs' group.

Speaking at the launch of CIOB's report on new homes quality in Westminster on 18 December, Andrew Lewer, who is the chair of the All Party Parliamentary Group (APPG) for SME housebuilders, dismissed the notion that mass housebuilding and quality homes are incompatible.

"The report highlights that quantity and quality are not in conflict when it comes to housebuilding," he said.

Minister for housing Lee Rowley attended the event and acknowledged that despite the government's progress on building safety and remediation over the past year, much more needs to be done in the industry to set and maintain quality standards.

"The CIOB report highlights the importance of [housebuilding] standards being met and people having confidence in new build, both now and in the future," Rowley said.

"As a parliamentarian, whilst we immerse ourselves in subjects like this, we are not necessarily from the sector and it's only by talking to you and people who work in it every day that we properly understand both the challenges and the opportunities in housing."

The event was attended by politicians, policymakers and leading trade body officials from across the housing and construction industry. These included Caroline Nokes MP, Tan Dhesi MP, CIOB president Sandi Rhys Jones and CEO Caroline Gumble, Royal Institution of Chartered Surveyors CEO Justin Young and Chartered institute of Architectural Technologists chief executive Tara Page.

The CIOB report highlights the importance of housebuilding standards being met and people having confidence in new build, both now and in the future
Lee Rowley MP, minister for housing

Lewer also thanked CIOB for its work promoting the industry's voices in parliament: "Within the sort of alphabet soup of building organisations, CIOB stands out. Instead of just doing the London thing, CIOB arranged a round table in my constituency [Northampton South] for me to meet local members and builders and about our local needs and what is going on for us – that marked the institute out for me."

The CIOB report examines the consumer protections in place to hold developers to account for quality failures in new-build housing. As part of the research, CIOB commissioned a survey of 2,000 adults in the UK on public perceptions of new builds.

It showed that 55% of people believe that older homes are better quality than new builds and almost a third (32%) described new-build homes as 'poor quality'.

CIOB's report *New-build housing – how regulation can improve the consumer journey* can be downloaded at www.ciob.org.

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Construction must attract new talent or its productivity boom will falter

The skills crisis threatens to undermine construction's strong productivity performance, warns **Pablo Cristi Worm**

Given the level of innovation and excitement in construction, it can sometimes surprise insiders how difficult it is to attract new people to the sector. The industry is still perceived by many young people as low-tech, physically demanding manual labour with few opportunities for career development.

Challenging these assumptions is more important than ever amid a persistent skills shortage which threatens to undermine the productivity boom that the sector is enjoying. To secure an innovative and productive future for construction, we need to reposition its image.

Since the Covid outbreak, construction sector productivity, measured by output per hour worked, has turned a corner, growing by 9.9% – well on the way to reversing the 15.3% fall in the previous two decades. By contrast, productivity in the whole economy grew by 21.7% in 2019 but has since slowed to just 2.4% since 2020. By the middle of 2023, construction was the second largest contributor to the wider economy's annual productivity growth.

This boom has been driven largely by the increase in output per hour worked, which rose by 3.7% on the year, despite a 0.7% decrease in the actual number of hours worked. In less time, workers were more productive, showing that despite a turbulent economic landscape and faltering investment levels, construction is doing more with less.

Addressing the skills shortage

Many sectors within construction, especially civil engineering and specialised construction activities, have benefited from strong pipelines of work fuelled by government schemes.

Setbacks such as the HS2 northern leg cancellation have been somewhat offset by other upcoming major programmes like the Northern Powerhouse Rail programme and Birmingham's new Curzon Street station.

This has reassured businesses, which are then able to invest and innovate to boost productivity. However, despite this, one foundational element threatens the progress made: the skills shortage.

Construction is facing a severe loss of skilled workers due to retirement, particularly after the pandemic, and a shortage of new entrants. It is expected that about 500,000 workers, or around 25% of construction's workforce, will retire in the next 10 to 15 years. If these are not replaced, the efficiency gains the sector has achieved will eventually be lost.

Importing labour from other countries can provide temporary relief but it is not a long-term solution. The more fundamental problem is the ageing workforce. Over 30% of the construction labour pool is 50 years or older, and the average age for workers is 45 years old.

Current efforts to address the recruitment crisis are not producing the desired results, and the number of young people enrolling in construction trainee programmes has now dropped to just a quarter from 2007 levels.

Increased rate percentage of productivity in the civil engineering sector since Q4 2019

30.2

It is expected that about 500,000 workers, around 25% of construction's workforce, will retire in the next 10 to 15 years. If these are not replaced, the efficiency gains will be lost

Even though apprenticeship starts in construction are 8.3% higher than five years ago, the number dropped by 5.9% between the 2021 and 2022 financial years.

Revitalising construction's image

It is essential that the sector reverses this trend and boosts both the number of ways into the industry and the attractiveness of construction as a whole.

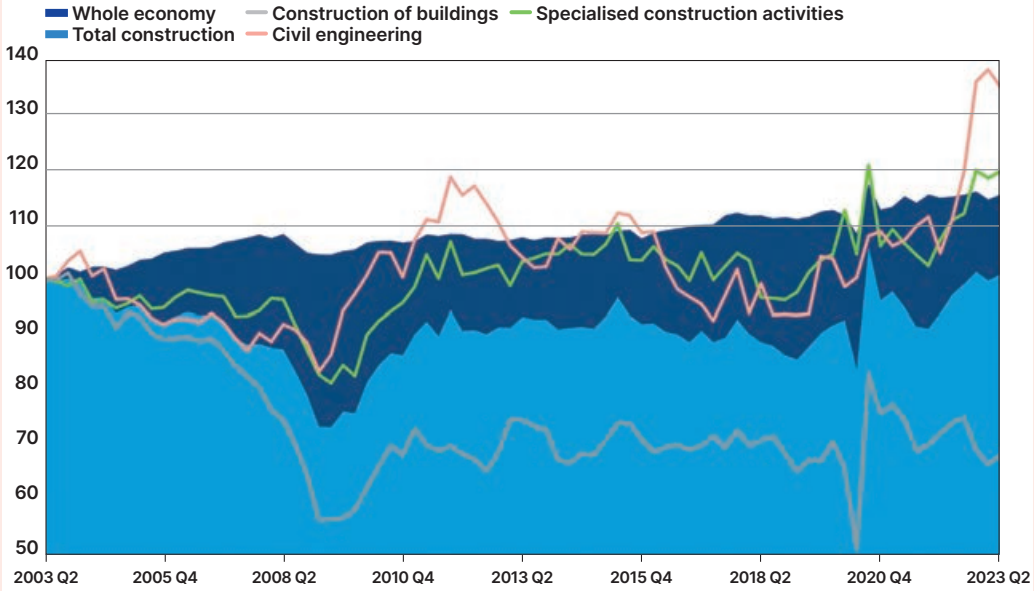
To shake off old stereotypes, the sector must continue to digitalise and embrace the latest innovations. This stretches from AI and a wider adoption of digital tools to analyse data, to modern methods of construction and greater automation. This goes hand in hand with the need to foster new talent and bring in those with different skills equipped to operate these new technologies.

Sustainability is also a top priority for new entrants to the job market, and construction must demonstrate the huge strides made in this area and the vital role the sector is playing on the road to net zero. Productivity is at its core about people, and our industry's future success rests on how we attract more of the next generation of apprentices, graduates and fresh thinkers.

Pablo Cristi Worm is a senior economist at Turner & Townsend.

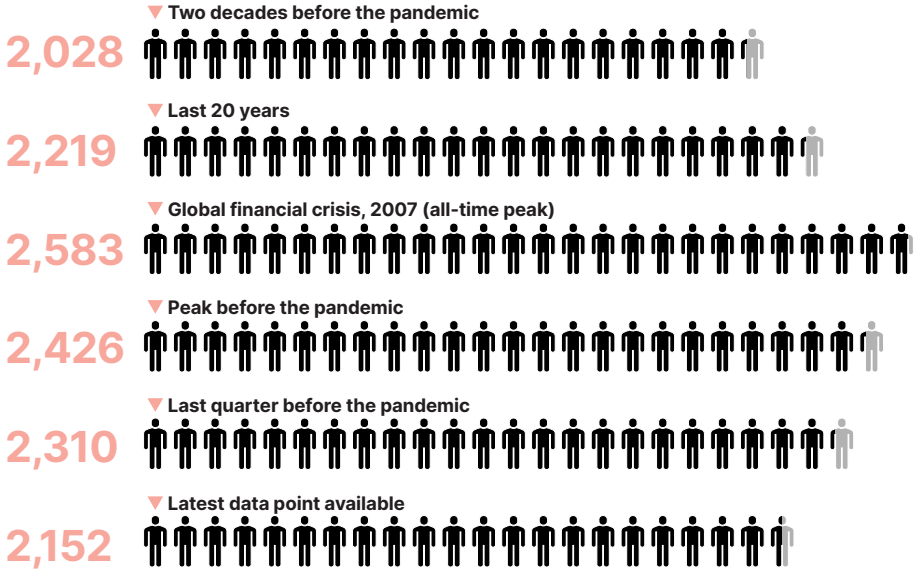
Quarterly output per hour worked in construction and the whole economy in the last 20 years

Index (2003 Q2 = 100)



SOURCE: OFFICE FOR NATIONAL STATISTICS

Construction employment (000s)



Caroline Gumble
CIOB

Construction safety stats show why our #PPEthatfits campaign matters

Despite the progress achieved in wellbeing and safety in the industry, more needs to be done to ensure that all workers go back home safely, says **Caroline Gumble**

▲ #PPEthatfits aims to improve provision of properly fitting PPE for all

In most of my communications so far this year, I've been mindful to look forward and to strike a positive note. There is much to be proud of in this important industry and so many of our members are achieving great things which deserve to be recognised and shared.

Having said that, at the end of last year the Health and Safety Executive's new data on workplace injuries and ill health showed a distressing rise in the number of construction fatalities: there were 45 fatalities in construction in 2022/2023, compared with 29 in 2021/2022.

I did note at the time that there has been progress over the years when it comes to health and safety in construction. However, it should concern us all that the number of fatalities in the sector has risen – and risen by 55% since the previous year.

The reality of those figures is that 45 people never made it home from work. We owe it to them, to their loved ones and their colleagues to continue putting health, safety and wellbeing at the forefront of our work.

In practical terms, this means several things – but chief among them needs to be providing workers with the relevant and up-to-date training, equipment and PPE to safely carry out their jobs.

As a sector, we have put a great deal of work into improving worker wellbeing and while some of that work appears to be paying off, there is more that can be done

Our #PPEthatfits campaign, launched last year, has safety at its heart and aims to improve the provision of properly fitting PPE for everyone in the sector regardless of their size, gender or religion.

While writing about wellbeing, it's also important to remember that mental health is a part of this. CIOB has been producing resources to support good mental health among the workforce, including the free online course to help people understand what mental health is and how to identify signs and symptoms of poor mental health. You can access this via the CIOB Academy website.

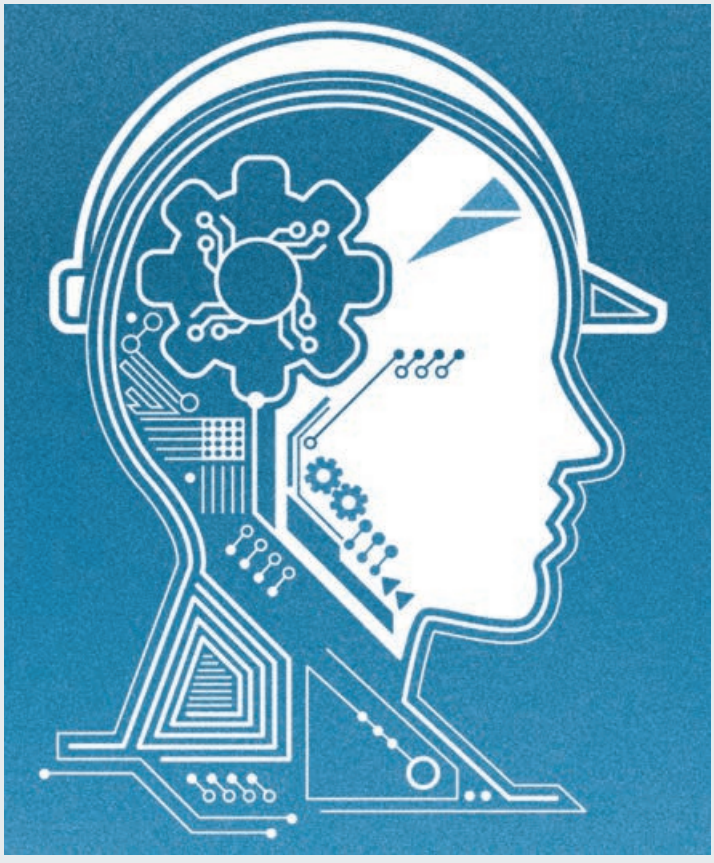
As a sector, we have put a great deal of work into improving worker wellbeing and while some of that work appears to be paying off, there is more that can be done and we must ensure we do not become complacent.

For CIOB's part, we will continue to keep the subject of safety and wellbeing high on the industry's agenda through our engagement with our members, the wider sector and policymakers.

Caroline Gumble is CEO of CIOB.

Feedback

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



CIOB People 02/01

Can AI help alleviate construction's skills shortage?

Mike Hay MCIOB

I am seeing a lot of articles on leveraging AI in construction and other industries. I am a supporter of innovation and seeking ways to continuously improve on what we do. But for me, the crux of the AI topic is the 'we' part: the human component in the equation.

We already have many processes, frameworks and tools in place to enact best practices in identifying paths to efficiency. If there are challenges to engaging with those processes and achieving efficient outcomes, I think that says more about the human part of those outcomes, not about who or what system is trying to deliver them, whether human or AI.

If your job is in data processing or assessment, then I dare say AI/machine learning platforms can make leaps in efficiency and perhaps replace a large portion of it – and I realise that may mean reducing a significant portion of the human component in those professions.

If your job is in trade-based production or assembling materials for a product on site, then, until an automated, AI-controlled machine can be deployed to replace you, the crucial human part will remain.

CM 14/12

Half of adults think older homes are better than new builds

A new report by CIOB on public perceptions of new-build homes found that 32% of UK adults describe them as 'poor-quality'.

Bill Lisgo FCIOB

A big problem with new builds is that housebuilders are driven by profit and quality suffers as a result. For example, not omitting a skim coat to plasterboard walls much improves decoration and lowers the risk of damage to walls. There needs to be a mindset change on quality in my opinion.

CIOB People 20/12

Can a site quantity surveyor work from home?

Peter Mountain MCIOB

A site quantity surveyor should be on site as much as possible. How else can they know what is going on on site? Also very important is that a building site is the only place to learn about the construction process from design to implementation, and to learn the difference between good and bad building practice. These things cannot be learnt at home or in college.

Stewart Pearl MCIOB

The answer is yes and no. There are obvious tasks which can be carried out off site using drawings and correspondence. But there are also tasks which can only be done on site, such as monitoring progress, spotting variations, talking to the staff.

And of course, there's nothing like a site visit to get the feel of a job. Leaving these to be carried out by site agents or engineers never seems to work that well. A good relationship with the other party also helps iron out issues more readily, so face-to-face meetings can be valuable.

Yusuf Pandor MRICS

There needs to be a good balance between working from home and being on site. The key is to invest in the right technology to make this work most effectively. This will result in cost savings and an increase in quality of information.

Tamlyn Lingham FCIOB

I share the concern that effective project management requires a hands-on approach, and site quantity surveyors must be physically present to navigate the intricacies of construction projects.

I agree that roles such as project directors may find some flexibility in remote work, but even they need to balance offsite responsibilities with onsite presence for effective leadership.

The human touch in construction, the ability to read tone, body language, and personal interaction, remains unparalleled.

Share your views on the latest industry issues by posting comments online at www.construction management.co.uk or by emailing the editor at construction-management@atompublishing.co.uk

The eco homes of Hardy country

The UK's largest cohousing development offers a new template for sustainable construction and eco living. **Will Mann** visited the project

On a green hillside in deepest Dorset, a pioneering eco housing development is nearing completion. Hazelmead is the UK's largest cohousing neighbourhood, comprising 53 affordable eco-homes for sale and for rent, through Bournemouth Churches Housing Association (BCHA).

Cohousing communities, which date from the 1960s, involve self-contained homes with communal facilities and residents who typically share similar values – in this case a strong environmental ethos.

Designed to be energy efficient, climate resilient and nature friendly,

the homes on the 2.5ha-site near Bridport meet the AECB (Association for Environment Conscious Building) Standard and have near-Passivhaus levels of insulation, with U-values of 0.15 for external walls.

Electricity comes from a microgrid serving the development, with an array of 114 rooftop photovoltaic solar panels feeding into a monster 1,609kWh-capacity Tesla battery. Some 54 air-source heat pumps power the hot water.

This is the county of Thomas Hardy, whose novels were known for their depictions of rural life, and Dorset's most famous son would have approved of the sustainability and biodiversity themes that run right through the Hazelmead cohousing scheme.

Work on the project first started back in 2008 when a group of like-minded people formed Bridport Cohousing with the aim of building a neighbourhood of affordable eco homes for local people. The development was given full planning permission in 2016, BCHA was picked as housing association partner in 2018 and work got underway on site in October 2019.

BCHA development and acquisitions manager Jack Rushforth is giving *CM* a tour ▶

The homes are built on strip foundations in south-facing terraces to maximise efficacy of the rooftop solar panels

Jack Rushforth, Bournemouth Churches Housing Association

MARK ADAMS

▼ The development provides a biodiverse habitat for birds, reptiles and mammals

MARK ADAMS

The homes are brick-clad at ground floor level with larch cladding above

of the site. The housing association is managing the construction project, though main contractor CG Fry has a joint contract with BCHA and Bridport Cohousing.

"The greenfield site slopes steeply downward from north to south so it was profiled into levels through an earthworks phase," Rushforth says. "The homes are built on strip foundations in south-facing terraces – to maximise the efficacy of the rooftop solar panels – of two-, three- and four-bed family houses, and two two-storey apartment blocks of one-bedroom flats."

The PV panels are slim but not flush with the roofs. "We did look at inline solar PV but it would have cost about 30% to 35% more and we were conscious about the grant funding we had available and that the scheme is affordable housing."

Project overview

- Client: Bridport Cohousing and Bournemouth Churches Housing Association
- Main contractor: CG Fry
- Architect: Barefoot Architects
- Timber frame: Sevenoaks Modular
- Windows: Rationel
- Ventilation: Zehnder
- Microgrid: Cepro
- Start on site: October 2019
- Practical completion: 30 November 2023
- Construction Value: £7.5m

The microgrid and the Tesla battery will power electric heating at homes across Hazelmead.

"To put the Tesla battery in perspective, it has a similar storage capacity to 30 typical electric vehicles," Rushforth says.

The microgrid system allows the residents to purchase top-up renewable power from other suppliers, if needed. It connects with the mains via a transformer from next door Bridport Community Hospital.

"One of our challenges was the easement arrangements for the connection with the NHS, which also required consent from Western Power [the regional electricity distributor for National Grid], so there was quite a bit of back and forth in the design stages, and then in the implementation stages to get the various parties to agree," says Rushforth.

"The majority of the works for the microgrid have been done by Cepro, who had experience of a previous scheme in Bristol."

The Dimplex air-source heat pumps are contained within internal boiler cupboards, with the two-bedroom homes having slightly smaller units compared to the three- and four- bedroom houses.

"We looked at ground-source heat pumps, but air-source heat pumps proved to be easier to install and more cost efficient for BCHA," says Rushforth. "The actual units themselves were probably about 20% more per unit and then the groundworks costs would have been quite significant. Plus, there was more grant funding available through Homes England for using air source heat pumps at the time."

The homes are brick-clad at ground floor level with larch cladding above. The upper floors use structural insulated panels (SIPs) with preinstalled triple glazed windows and insulation, manufactured off site by Sevenoaks Modular.

"It was more straightforward to fit the insulation into the SIPs because of the modular design and construction," says Rushforth. "At

The development has 54 air-source heat pumps powering the hot water

54

MARK ADAMS

We've given residents demonstrations on how best to utilise the eco technology and provided a home user guide

Jack Rushforth, Bournemouth Churches Housing Association

ground floor, the insulation goes into the brick cavity but it was definitely a challenge, compared to traditional brick and mortar build, to get the required insulation levels in the air pressure testing results.

"For our contractor CG Fry, the biggest issue was ensuring they didn't damage the insulation when passing services through the airtight barrier."

Because the homes are designed as almost airtight environments, they are equipped with mechanical ventilation and heat recovery (MVHR) systems which bring fresh air in, while recovering waste heat from stale air which is pumped out.

"We've given residents demonstrations on how best to utilise the air source heat pumps and MVHR system and provided a home user guide," explains Rushforth. "There may be a tendency for people treat them like ordinary homes, opening windows in the middle of summer because they like to feel there's fresh air coming in all the time.

"In the winter, the quality of the heat is different; you don't have radiant heat, you have ambient heat, and there are no hot and cold spots. Which can take some getting used to if you like sitting in front of a fire.

"That said, the residents moving in generally have a high level of understanding about the green technology used here."

When Hazelmead's original planning application went in, many of ▶

▲ The Tesla battery has a similar storage capacity to 30 typical electric vehicles

MARK ADAMS

▲ Growing beds and communal allotment patches are integral to Hazelmead's vision of food security

Cohousing life for residents of Hazelmead

Bridport Cohousing has set an ambitious target of reducing the community's carbon footprint by 40% over the first five years of living at Hazelmead, starting from full occupation of the site.

Contributing to this are the growing beds at the rear of houses and communal allotment patches – providing residents with access to land for cultivating food is integral to Hazelmead's vision of food security.

The community is set in an Area of Outstanding Natural Beauty and built on former farmland, and creating a biodiverse habitat for birds, reptiles and mammals is central to the scheme, with a wildflower meadow, dormouse bridges and swift boxes on the houses.

Hazelmead will encourage use of walking, cycling and e-bikes, with car-free streets to provide safe spaces for children to play. Parking provision is in dedicated areas (with one space per household) and will include charging points for electric vehicles. An 'e-car' club is planned

At the heart of the community will be the Common House, which is currently under construction (separate to the housing contract), and features low-carbon build methods with locally sourced materials including straw bales.

In partnership with Bridport Cohousing, the School of Natural Building (SNaB) is offering training courses as part of this community build.

▲ The homes have an array of 114 rooftop photovoltaic solar panels

Technically, having so many eco features on the project has been a big challenge, but from a professional viewpoint, you're learning a lot about new technologies
Jack Rushforth, Bournemouth Churches Housing Association

the eco features the cohousing group wanted were unusual for the time.

"But the regulations and planning laws have almost caught up with what we're doing," says Rushforth. "The insulation levels, for example, that we looked at initially were significantly above standard levels. But these are now more in line with your traditional housebuilding standards."

The project was delayed for three months by the Covid-19 pandemic, which struck four months after work began on site, and adverse weather. "With the topography of the site, any rainfall during the early construction stages tends to run quite quickly down the site and pool at the bottom," explains Rushforth. "When you're doing the trench work it does complicate things.

"Technically, having so many eco features on the project has been a big challenge, but from a professional viewpoint, you're learning a lot about new technologies. Projects run by the larger housebuilders can be a carbon copy from one site to the other, whereas this has been a huge learning curve from the get-go."

Contract management has also been a challenge, Rushforth says.

"With it being a joint contract with BCHA and Bridport Cohousing, we've had to manage the interests of both parties, plus cost restrictions and regulatory requirements and statutory obligations, and we've worked with the residents who are going to be living here for many years to come. There have been some tough decisions about cost versus practicality. But it's all definitely been worth it."

There are 13 shared ownership units and 26 for affordable rent through BCHA, with the remainder for private sale. The first residents moved into their homes in 2022 with practical completion for the whole development achieved at the end of November 2023.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What will be in the RAAC rulebook?

The government has granted funding to the Manufacturing Technology Centre to develop a rulebook for dealing with RAAC. **Will Mann** finds out what guidance it will offer from Steve Nesbitt, the centre's built environment chief technologist

What is the objective of the rulebook?
The rulebook will be a guidance document for construction professionals, estate managers, and other stakeholders dealing with reinforced autoclaved aerated concrete (RAAC) in various building types. The goal is to empower them with the information needed to confidently address the presence and condition of RAAC, in an objective, consistent and robust way.

Its development is collaborative, aggregating existing knowledge into a centralised resource that encompasses various perspectives, experiences, insights and enabling technologies related to RAAC.

What guidance is currently used for RAAC and what are its shortcomings?
Several guidance documents, including those from the Institute of Structural Engineers, the Department for Education and NHS Estates, provide principles for assessing the presence and potential risks associated with the degradation of RAAC structures in buildings.

However, there are issues with existing surveying methods, which rely on 'line of sight' to identify RAAC presence and associated risks. For example, there may have been coatings applied to RAAC planks. In the health sector, complex MEP and service distribution systems restrict visual access. So, there is a need for an enhanced level of detection and assessment.

Tell us about the non-destructive techniques (NDTs) you are looking at.
NDTs can provide a more comprehensive understanding of the performance of RAAC products, identifying key modes of failure and signature characteristics. These are techniques that are common in the healthcare sector, such as ultrasonics, X-ray backscatter (XBS), X-ray computed tomography (XCT) scanning. Other NDTs like ground penetrating radar are already used in infrastructure – the Manufacturing Technology Centre (MTC) has used this for scanning bridges.

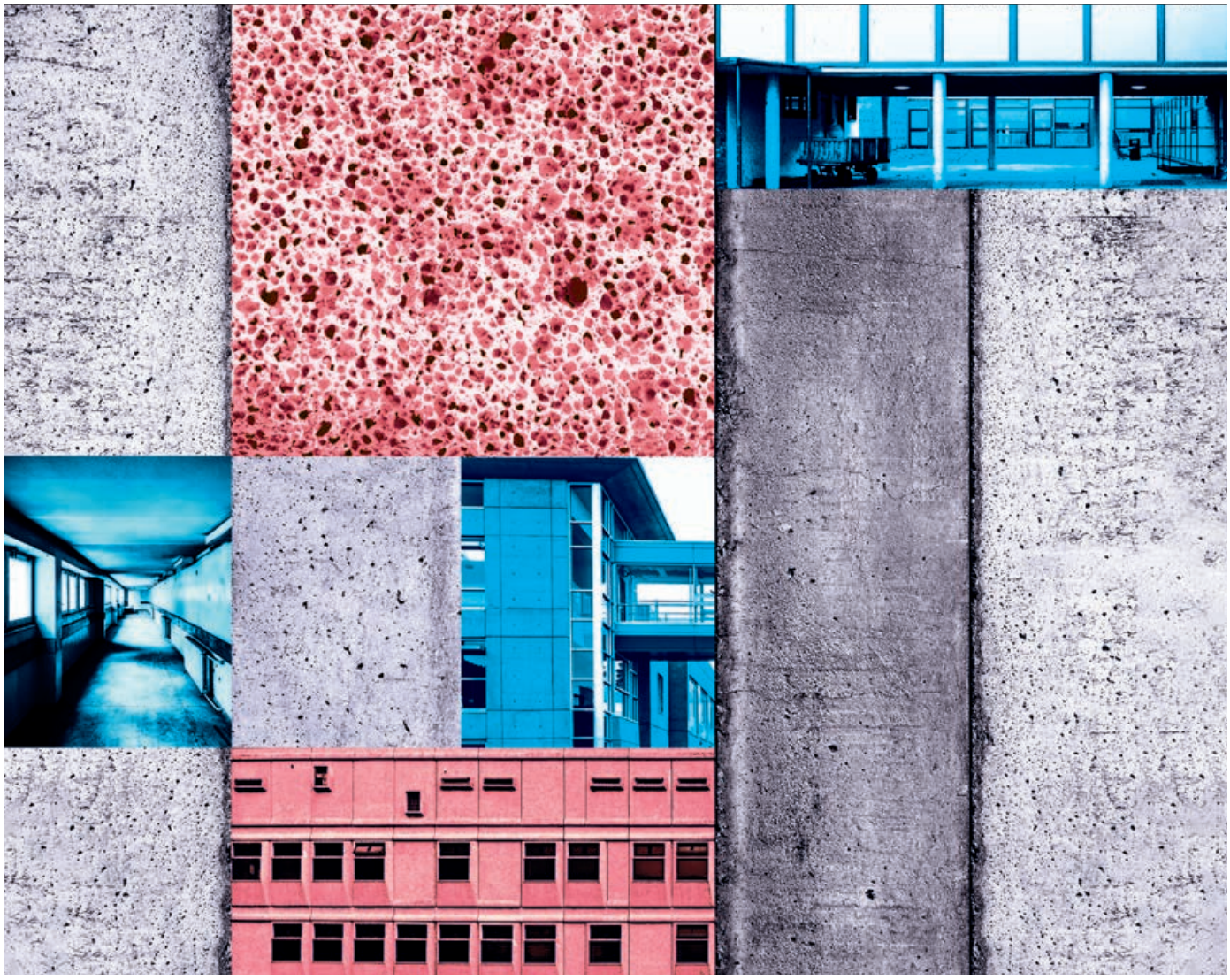
NDTs are non-invasive and allow an objective evaluation of the condition of the RAAC plank without causing harm to the structure. So, you could scan a RAAC plank and identify cracking or internal voids or even corrosion displacement in the reinforcement elements. Lack of transverse reinforcement elements at the bearing ends are among the key indicators that a RAAC plank is in a poor state of condition.

> **You could scan a RAAC plank and identify cracking or internal voids or even corrosion displacement in the reinforcement elements**
> **Steve Nesbitt, Manufacturing Technology Centre**

However, you need to know how to use these technologies. Ultrasonics, for example, gets used very widely in assessing reinforced concrete structures with high degrees of accuracy. But with RAAC, because it is porous, the ultrasound waves get dispersed, and you cannot actively detect the position of reinforcement. But it is still useful in testing whether a building element is fully reinforced concrete.

We're currently assessing NDTs with RAAC planks in our workshop – putting chunks of these planks through a XCT scanner – and we're on the cusp of being able to confirm that these are viable techniques to assess RAAC.

Where does metrology come in?
Metrology is the science of measurement. Metrology, along with NDT, is used by MTC to help manufacturing and infrastructure organisations understand their product quality and the condition of



▲ RAAC problems affect numerous public buildings, and it is present in 231 schools and colleges in England

their assets. I think it could be used in understanding changes of state in RAAC, at scale.

We've seen the symptoms that could indicate a potential concern resulting from degradation of RAAC, for example, if a RAAC plank has got some form of deflection that is visible, then that is an indicator of ongoing changes within the plank that may manifest with it collapsing. Another is the detachment of the end bearing system on the RAAC planks which also leads to collapse of the RAAC plank.

Using metrology-based methods, we could survey many RAAC planks quickly to detect changes of state. This would give advanced warning to say something has changed in the state of the RAAC planks, and therefore the estate owner could take immediate remediation action to maintain use of the building.

AI is already helping with RAAC assessment. Do you expect to build on that?

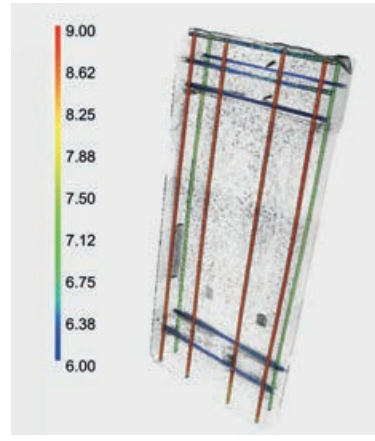
We have ongoing engagement with the team at Loughborough University (CIOB members Professor Chris Gorse, Professor Chris Goodier and Dr Karen Blay) and that will continue.

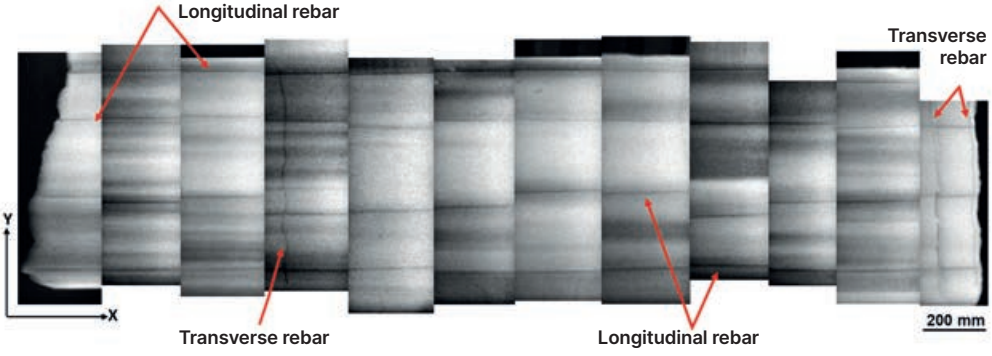
The tool set they've created is a fantastic starting point where you take photos of a building over different periods, do the analysis remotely ▶

▶ Right: Scanning of RAAC planks using an off-the-shelf x-ray backscatter (XBS) device

▶ Far right: Large volume x-ray computed tomography (XCT) scan of a RAAC plank to baseline the size and position of rebar with extremely high precision

▶ Below: A series of XBS measurements of a RAAC plank, stitched together to illustrate the rebar locations, and correlate with the XCT baseline to verify the accuracy of this technique





and look for changes of state using AI. The tool will look for visual indicators of signs of distress within the RAAC planks. That's great for estate owners.

There are similar restrictions though, in that it is two-dimensional and reliant on 'line of sight' for the images to do that work. But in association with NDT methods, it gives us a rich capability that can be deployed across the industry.

What professional requirements are required to use these tools?
Building owners conceivably could purchase NDT and metrology equipment and do the scanning themselves. But the data analysis will require another level of expertise while arbitration or determination of the results will have to come from an appropriately qualified structural expert or building surveyor.

What will the rulebook say about remediation of RAAC?
We're working with partners on three physical remediation methods: repair, reinforce or replacement. First, we are looking at whether repairing RAAC planks in situ is viable, in some instances. There are examples of reinforcements or retention systems, such as a secondary frame, used to either reinforce, and take away the structural loadbearing aspects of, RAAC planks or retain them.

> **We need to reduce remediation timescales to just a few days**
> Steve Nesbitt, Manufacturing Technology Centre

Alternatively, the option is replacement. Working with the Construction Innovation Hub, we've developed a lightweight, pre-manufactured roof cassette solution. We are testing these in our workshop and will be working with estate owners and industry partners to demonstrate that these cassettes could be applied in real buildings.

The key consideration is the scale and pace of delivery needed. The duration of replacement in a building needs to be reduced greatly. There are examples where roofs have been replaced and it's taken several months, and the whole building needs decanting to allow that. Within a school, the response should be manageable within school holiday periods. So, we need to reduce remediation timescales from several weeks or months to just a few days.

When will the playbook be ready?
The first draft will be available in the first quarter of this year. This will be a comprehensive aggregation of available information, laying the foundation for subsequent updates. That won't be the finished version though. We've got gateway points ahead around the development and verification of NDTs and other enabling technologies we are testing.

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Can we really capture carbon in concrete?

We know that timber sequesters carbon. Can concrete do the same? **Kristina Smith** meets the materials scientists trying to make it happen

Whatever concrete decarbonisation roadmap you look at, carbon capture usage and storage (CCUS) accounts for a big piece of the pie.

In the UK, where producers have already done some of the easier carbon reduction work, CCUS will account for around 60% of carbon savings by 2050, according to the Mineral Products Association's (MPA) decarbonisation roadmap, which it published in 2020.

Perhaps the most obvious form of CCUS for cement production sees carbon dioxide (CO_2) removed from flue gases and then stored in an underground depository. Heidelberg Materials is doing this on a large scale at its Brevik cement plant in Norway, perhaps as soon as 2025, with a carbon capture and storage plant partly funded by the Norwegian government.

Combined with Norway's plentiful renewable energy supply, this will result in what Heidelberg is calling "the world's first carbon captured net zero cement".

But there is another way: to somehow lock some of the CO_2 emitted from cement production into the concrete itself. This is an idea being pursued by scientists and startups around the world through a variety of technologies, in varying stages of development. These range from carbon curing to producing

CCUS will account for around 60% of carbon savings by 2050

60

We have done some standard tests on strengths and durability of the bricks, which are all looking good. We are continuing to refine the mix design to optimise performance

Sam Draper, Seratech

supplementary cementitious materials (SCMs) to creating aggregates.

Contractors and their supply chains should be paying close attention to such technologies, suggests Marta Sjögren, co-CEO and co-founder of Nordic-Dutch startup Paebbl which has ambitious plans to create a portfolio of products that store carbon, starting with SCMs.

"Contractors should be thinking about how they can use this opportunity," she says. "Carbon avoidance [or offset] credits are not very well known about because they've just started. But they could be a way to boost margins."

Sjögren cites CarbonCure in North America which pays a proportion of its carbon credits to concrete companies. Paebbl will be looking at a similar system when it starts selling its technology.

Carbon curing

CarbonCure, founded in Nova Scotia in 2012, is further ahead in commercial terms than many of the others in this arena.

Its technology, which can be retrofitted onto existing concrete plants, sees CO_2 injected under pressure into concrete wagons where it reacts with the concrete to form calcium carbonate and hence becomes permanently embedded. This increases the concrete's compressive strength which means that cement content in a mix can be reduced, according to CarbonCure.

CarbonCure says its process saves between 7 and 11kg of CO_2 per cu m of concrete produced. That isn't a huge amount, but it all adds up. CarbonCure's website tells us its technology has saved 126,130 tonnes of carbon over the past year.

Another established company that uses carbon curing is Solidia. Its process combines its own low carbon SCM and carbon curing in a special chamber to create precast elements which Solidia says can reduce their carbon footprint by up to 50%. The company is creating its first plant at its Texas headquarters.

Canadian firm CarbiCrete deploys slag rather than portland cement in its precast concrete and again cures it in a special chamber with CO_2. Carbicrete, which piloted its technology in 2018, says that the result is carbon negative concrete blocks, some of which are already being manufactured by Patio Drummond in Quebec.

Sequestered in aggregate

UK company Carbon8, which was founded in 2010 and came out of the University of Greenwich, has developed technology to lock carbon into the aggregates used in concrete.

Carbon8 uses its accelerated carbonation technology (ACT) to combine wastes from industries such as cement, energy from waste, paper and pulp, steel and biomass with CO_2 to produce an aggregate which it calls CircaBuild. ▶

◀ Carbon dioxide from cement production can be locked into concrete

▶ UK company Carbon8 has developed technology to lock carbon into the aggregates used in concrete

Seratech is trialling bricks which use a magnesium carbonate binder, produced via a proprietary carbon capture process

Paebbl's process combines carbon dioxide with olivine, a magnesium iron silicate mined near Åheim in Norway

Carbon8 has developed its solution so that it can be accommodated in a container which can then be easily transported and installed at an industrial site.

Its first commercial deployment began in summer last year at Vicat's Montalieu cement plant in southern France, capturing CO_2 from the plant's flue gas and using it to convert cement bypass dust into lightweight aggregate which could then be used in concrete block production.

Last year CCP Building Products used CircaBuild with its Greenbloc technology, which uses a non-portland cement binder, to produce trial concrete blocks. According to CCP, which is part of SigmaRoc, the blocks produced are carbon negative, accounting for 110% less carbon than one made with 100% ordinary portland cement and with the possibility of increasing that to 125%.

Carbon8 announced it will also run a pilot project at an energy-from-waste plant in Duiven in the Netherlands. Aggregate produced from fly ash waste will be turned into aggregate which will then be tested for compliance with construction industry standards.

There needs to be legislation forcing clients to specify more eco or carbon-friendly materials from government. We need to tax carbon emissions
Hannah Durden, CNZW Developments

Emerging technologies

Paebbl and UK startup Seratech are at the beginning of their development journeys. Their technologies are somewhat similar, involving the combination of olivine – a naturally occurring magnesium iron silicate – with carbon dioxide.

Founded in 2021, Paebbl and its backers see the commercial potential of investing in this field. Its first step is developing a process to combine CO_2 with olivine to create a silica-enriched magnesium carbonate which can be used as an SCM.

The magnesium silicates in the olivine react with carbon dioxide under a pressure of 50 to 100 bars at a temperature of between 100 and 200 deg C, which would be provided through renewable energy, says Sjögren.

"So far, we have shown that it can be used in all non-structural concrete classes and in a couple of structural classes, from early results," says Sjögren. "We hope to develop it for all classes in a couple of years."

Paebbl's November 2023 news was that it had stepped up its processing from the laboratory to a 500-litre batch production unit. Its next step would be to scale up 10 or 20 times to create a continuous plant by the end of 2024 with the goal of producing a first-of-a-kind (FOAK) commercial plant by 2027 or 2028.

The process currently works with almost pure CO_2. "Between 80 and 100%, the performance is pretty stable across the board," reports Sjögren.

Paebbl is working with SeaO2, which captures and purifies CO_2 from the sea. "Our goal is to prove it works even with these low efficiency sources of CO_2. If you prove economics work at this level, it definitely works with flue gas," says Sjögren. After that, Paebbl will turn to flue gases from waste incineration plants which contain a high proportion of CO_2.

The Seratech process also sees the combination of olivine and CO_2 but is designed to work with any flue gases containing 10% or more CO_2. Unlike Paebbl's process, Seratech's patent-pending system sees the resulting silica and magnesium carbonate separated.

The silica can be used as an SCM, with a mix which sees around 35% of portland cement replaced, performing similarly to a standard 40MPa concrete. At just over 35%, concrete produced with the SCM would become net zero carbon, says Seratech CEO Sam Draper.

STEVE VAN PUFFELEN

The company plans to publish a life cycle assessment later this year.

Also founded in 2021, Paebbl is about to tender for the delivery of its first pilot facility, a plant that will run continuously, sequestering 100 to 200 tonnes a year. Assuming that it can raise the necessary funding for the build, that could be up and running by mid-2024.

Meanwhile, Seratech has been working on trials to deploy the magnesium carbonate produced in the process in bricks. It says they only need to be baked at 60 deg C – as opposed to over 1,200 deg C for conventional clay bricks – before being left to cure at ambient temperature for up to two weeks.

> **Contractors should be thinking about how they can use this opportunity**
> **Marta Sjögren, Paebbl**

"We have done some standard tests on strengths and durability of the bricks, which are all looking good," says Draper. "We are continuing to refine the mix design to optimise performance and how you cure them."

Now the goal is to create partnerships with brick and block manufacturers, Draper says: "This product could be used within existing technology, which is a key selling point of magnesium carbonate bricks. You don't need to make any modification of the plants; you can run it through the same process. That's what's really big for us."

Too much risk

With these companies and many others working on sequestering carbon into concrete, bricks and other materials, these technologies could provide a useful contribution to the CCUS element of the net zero journey. However, in the UK there are some big barriers to the adoption of such technologies.

At a very basic level, there is the issue of standards. There's a reason why the US is adopting these technologies faster. "Here in Europe, we have been 'recipe based' for 30 years longer than the US In EU. But, as of 2025 we are moving to performance-based standards which will be a huge change," says Sjögren.

In the UK, although BS 8500 was updated in November 2023 to allow lower carbon concretes to be specified, it is still largely recipe based rather than performance based, as are other related standards. It is possible to deviate – but that is expensive and time consuming.

Market forces won't be enough, warns Hannah Durden, managing director of CNZW Developments, who advises on the adoption of new low carbon materials and carbon neutrality.

"There needs to be legislation forcing clients to specify more eco or carbon-friendly materials from government. We need to tax carbon emissions – look at how the EU's emissions trading scheme is beginning to affect the cement and concrete industry. Wholescale adoption won't happen without this," she says.

What you will learn in this CPD

- New UK regulations to make residential buildings net zero by 2050
- How heat loss of thermal bridging is calculated
- The role lintels play in thermal efficiency

Heat loss from buildings and thermal bridging

This CPD, in association with Keystone Lintels, discusses how lintel specifications can affect energy ratings and meet Part L requirements. By **Ciarán McAliskey**

Making our future homes 'zero carbon ready' will be essential if the UK wants to meet its net zero target by 2050. An important first step is ensuring the fabric of our residential buildings is well designed. By paying careful attention to detailing and thermal bridging, we can eliminate some of the issues that create poorly performing dwellings.

The new Part L requirements of the Building Regulations will be seen as an important step towards the 2025 Future Homes Standard. There needs to be a clear emphasis on the design of a building's envelope without the need for further retrofitting work.

The new interim Part L uplift to energy efficiency requirements will mean all new homes will be expected to produce 31% fewer carbon emissions through a combination of fabric improvements, low-carbon heating technologies and PV panels.

The 31% reduction is the first step, but by 2025 new housing will be expected to produce 75-80% fewer carbon emissions compared to current standards. This is a potentially massive change for the industry.

Getting the fabric right in new housing

For new homes to meet these higher standards, one key area will be addressing the thermal performance of a building envelope through a

By 2025 new housing will be expected to produce 75-80% fewer carbon emissions compared to current standards. This is a potentially massive change for the industry

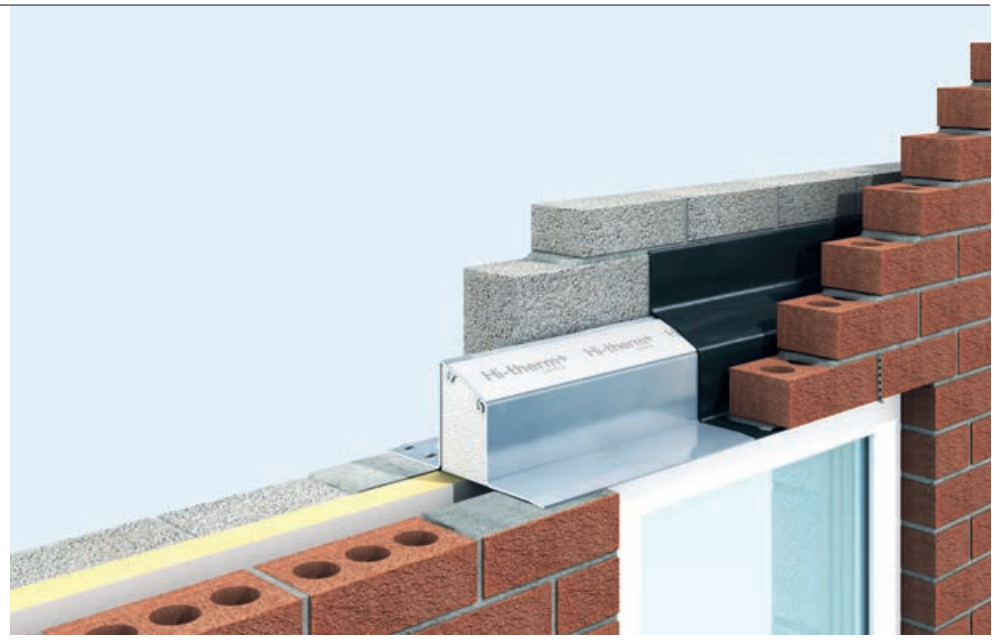
'fabric-first' approach to building design. If we get the fabric right and we build as designed, we will go a long way to meeting our targets.

It's an approach that will enable us to meet and even exceed regulatory performance criteria, whether it is for large-scale social housing or a much smaller residential property.

While a reduction in CO_2 emissions is one consideration when designing thermally efficient housing, an improvement in thermal comfort can also have a positive impact on its occupants' wellbeing.

Thermal bridging and heat loss

A critical element of the fabric-first approach will be addressing the issue of thermal bridging, which can be responsible for up to 30% of a dwelling's heat loss, according to research quoted by the Building Research Establishment (BRE).



◀ Highbrook Homes has used Hi-therm+ lintels in its Hazel Green project, Lancaster

▲ Thermal bridging can be reduced by smart design and product specification

This heat loss is quantified and calculated by an energy/SAP/BRE assessor when designing a building. They use a combination of U-values and Psi-values, which are thermal transmittance measurements.

- U-values: These are the sum of the thermal resistances of the layers that make up an entire building element. For example, the sum of the thermal resistances of all the layers that make up a wall (lintel + blockwork + insulation, etc). The U-value also includes adjustments for any fixings or air gaps.
- Psi-values: These are measurements used to determine the rate of heat loss through a specific junction. There are many of these junctions to consider when designing a dwelling. Collectively, these are known as thermal bridges. A thermal bridge is created when materials that are poor insulators come into contact with one another (such as a steel lintel within a masonry wall), allowing heat to flow through the path created.

Essentially, the lower the U-value or Psi-value, the more slowly heat will be able to transmit through the building element or junction, and so the better the dwelling will perform as an insulator. Eliminating thermal bridging through smart design and product specification will be essential if we are to ensure we meet these new regulations.

In the past, builders or assessors may have looked to offset the use of inefficient building materials by hitting SAP targets with bolt-on technologies. It is sensible to reduce energy demand initially within the building fabric before replacing this with bolt-on technologies. This leads us to take a fabric-first approach, ensuring that the envelopes of our dwellings are designed with energy efficiency in mind.

Part L now also states that we use the actual thermal transmittance values for building products ▶

Regulatory standards

Building Regulations Conservation of Fuel and Power Part L

The new Part L – Conservation of Fuel and Power requirements of the Building Regulations were updated and came into force on 15 June 2022. They aim to reduce carbon emissions in new homes and non-residential buildings by 31% (compared to 2013 standards) in response to climate change.

These regulations form a series of Approved Documents that provide guidance on aspects of a building's design and construction.

Case study: Redrow Homes

Specifying more energy-efficient lintels allows the housebuilder to meet energy requirements while saving on build costs

Redrow Homes is using the Hi-therm+ lintel to help achieve energy performance requirements while providing considerable build cost savings.

The housebuilder has committed to the Hi-therm+ going forward, saving £200 per plot. Based on the 5,800 plots built last year, this would equate to a cost saving of £1.16m.

Jonathan Moss, group head of technical at Redrow Homes, said: "By including low Psi-value Hi-therm+ Lintels into our group specification, the improved performance within SAP calculations allowed us to achieve overall significant cost savings by reviewing the ground floor insulation specification while still meeting the requirements of Part L Regulations.

"The Hi-therm+ lintel has proven to be a cost-effective solution to tackle concentrated areas of heat loss and contribute to the energy performance of our group house type range."

Part L now states that we use the actual thermal transmittance values for building products within the envelope of a dwelling

within the envelope of a dwelling, whereas in the past generic accredited construction detail (ACD) values were accepted within the SAP assessment. These values could vary rather substantially from the actual value of a specific product.

By making this change, the Y-value obtained (the total heat lost through thermal bridging in a dwelling) is accurately represented within the BREL (Building Regulations England Part L) report.

Moreover, due to the performance gap between the design and built stages that we have seen in the past, Part L has introduced the requirement for photographic evidence within the report. This helps overcome inconsistencies with site workmanship or installation of a different product than that specified.

These photographs are required at key junctions, at the relevant

Energy assessment: SAP 10.2

SAP is the government's Standard Assessment Procedure for the energy rating of dwellings. 10.2 is the latest version of the assessment.

Its scope is to calculate energy use and similar metrics. It does not set standards or limitations on data.

All domestic new builds require a three-stage SAP calculation:
Stage 1: Design stage;
Stage 2: As-built stage;
Stage 3: Energy Performance Certificate (EPC).

Building Research Establishment research states that thermal bridging can be responsible for up to 30% of a dwelling's heat loss

30

Due to the previous performance gap between the design and built stages that we have seen in the past, Part L has introduced the requirement for photographic evidence within the report

construction stage, for every new dwelling built. To help with the fact that the photographs are plot-specific, geolocation technology is required, so there is clear evidence that all the photographs have not just come from one 'perfect' plot.

Collectively, these changes provide evidence that homes have been constructed from the materials they were designed for, ensuring that properties run as efficiently as they were designed to run.

High-performance lintel

Steel lintels are often overlooked when it comes to thermal efficiency. The importance of lintels should not be understated.

Steel lintels are typically present in traditional build dwellings throughout the UK and Ireland, and can play a significant contributing factor to the 30% of heat loss through thermal bridging in a typical dwelling.

Steel has numerous advantageous properties such as structural performance and life expectancy, but is a highly thermally conductive material and will transfer heat from the inside to the outside of a dwelling.

That heat loss will require energy to replace it and generating that energy will produce carbon emissions as a result. However, there are solutions to address this.

For instance, the Hi-therm+ lintel has set a new standard for thermal efficiency in steel lintels. It incorporates a central thermal break and is up to five times more thermally efficient than a standard lintel – with a thermal transmittance value of 0.03-0.06 W/mk.

Hi-therm+ is a very cost-effective solution, particularly if we look beyond the unit price, as getting the fabric right will save energy throughout the entire lifespan of the dwelling.

The Hi-therm+ lintel has made a significant impact on the thermal efficiency of homes and is specified on many housebuilder projects across the UK and Ireland due to its low cost and improved performance in lowering carbon emissions within SAP, especially when compared to some other popular alternatives.

Ciarán McAliskey is national specification manager (Ireland) at Keystone Lintels.

Useful references

- **GOV.UK: Approved Document L, *Conservation of fuel and power, Volume 1: Dwellings***
- **GOV.UK: Approved Document L, *Conservation of fuel and power, Volume 2: Buildings other than dwellings***
- **GOV.UK: *The Future Homes Standard***
- **finance-ni.gov.uk: *Technical Booklet F1 (Northern Ireland)***
- **gov.ie: *Technical Guidance Document L 2022 (Republic of Ireland)***

Keystone Lintels' Hi-therm+ lintel is up to five times more thermally efficient than a standard lintel

CPD Questions

1) What percentage reduction in carbon emissions will new homes be expected to achieve by 2025 compared to current standards?

a) 31% **b) 50%**
c) 75-80% **d) 100%**

2) How can proper lintel specification help meet new Part L requirements?

a) By improving thermal insulation
b) By reducing thermal bridging
c) By increasing solar PV capacity
d) By adding low-carbon heating systems

3) What percentage of a dwelling's heat loss can be attributed to thermal bridging, according to research from the BRE?

a) 10% **b) 20%**
c) 30% **d) 40%**

4) Part L Building Regulations now require which of the following to help demonstrate consistency between a dwelling's design and construction?

a) Photographic evidence at key junctions
b) Geolocation data for photographs
c) Documentation of actual product thermal transmittance values used
d) All of the above

To test yourself on the questions above, go to www.construction management.co.uk/cpd-modules

Futurebuild 2024: be part of the change

Built environment professionals will gather from 5-7 March at London's ExCeL to discuss solutions for some of the most urgent sustainability challenges in the industry

The built environment is at a pivotal point in time and contractors – national and regional, large and small – play a critical role in ensuring we create a legacy of buildings that are fit for the future. But, to achieve this, the industry has acknowledged that change needs to happen. That is why Futurebuild is taking a stand for positive change at its 2024 conference.

Time is running out for serious climate action and collectively the industry can make a difference – but to get there, the supply chain must come together as one. Through collaboration, we can share our visions and drive positive action.

The Futurebuild Conference is more than just a sustainability event: it's a call to action for change. This highly respected gathering of influential innovators and collaborators tackles the big issues head-on and is inviting all those involved in the built environment to take part in the conference sessions to inspire and drive change to achieve a better built and natural environment for the long term.

▲ Futurebuild 2024 is setting out to be a call to action for change

Sponsored by Soprema and One Click LCA and curated by the Edge think tank, the conference

In association with futurebuild the future of the built environment

programme is focused on embracing change through three daily themes: Pathways to change, Levers for change and Sharing visions for change. Featuring a line-up of the who's who of the built and natural environment, each speaker will use the conference stage to 'take a stand for change' to tackle the big climate and ecological issues.

The aim of the Futurebuild Conference is for attendees to leave feeling more empowered and inspired to make changes to support the environment in their work.

Commenting on sponsoring the conference's programme, Debby Dawson, of sponsor Soprema, said: "At Soprema, we believe in building a sustainable future, and our commitment to eco-friendly solutions is at the core of everything we do. That's why we're joining hands with Futurebuild, a platform that shares our passion for sustainable innovation."

Johanna Jarvinen of sponsor One Click LCA added: "The One Click LCA team is excited to be taking part in Futurebuild 2024. Paving the way towards a better built environment is at the core of everything we do, and it's going to be an inspiring few days surrounded by other organisations and industry leaders who share the same values, wanting to proactively drive the industry forward and change how we build for the better."

A focus on retrofit

Futurebuild is partnering with The Retrofit Academy for the launch of The National Retrofit Conference, which will take place alongside Futurebuild 2024. The National Retrofit Conference will bring together innovators and industry leaders to focus on decarbonising our existing housing stock. It marks a big step forward in addressing how we tackle retrofitting, the biggest climate challenge facing our generation – hence the importance of launching a conference dedicated to it.

The National Retrofit Conference will provide a roadmap for retrofit for the coming years, with subsequent annual conferences marking the waypoints in the journey. The line-up of speakers includes government ministers and senior policymakers, key leaders from cities and regions, and thought leaders from inside and outside the sector. This aligns with Futurebuild's overall aim of collaboration, bringing key people together to forge a unified approach towards sustainable living.

▼ Futurebuild 2024 seeks to inspire a better built environment

Time is running out for serious climate action and collectively the industry can make a difference – but to get there, the supply chain must come together as one. Through collaboration, we can drive positive action

The three-day National Retrofit Conference will focus on skills, innovation and policy, and will provide the practical solutions that attendees can take away to drive their retrofit programmes forward.

Now is the time to take action through collaborative engagement. We ask you to take part, join the discussion and be part of the transformative change. The industry is ready and action is coming. **Futurebuild 2024 Conference will take place from 5-7 March 2024 at London's ExCeL main arena. Visitor registration is now open. For more details and exhibitor enquiries, visit futurebuild.co.uk.**

Speakers at the Futurebuild Conference 2024 will include Smith Mordak, chief executive, UKGBC; Muyiwa Oki, president, RIBA; Sara Edmonds, co-director, National Retrofit Hub; Richard Benwell, chief executive, Wildlife and Countryside Link; Caroline Gumble, chief executive, CIOB; Ramesh Deonarine, team leader – built environment, Climate Change Committee; Danisha Kazi, head of economics, Positive Money; Sam Burdett, carbon manager, Skanska and co-founder of ZERO Next and education co-lead, ZERO; Helen Fadipe, vice president, RTPI; Ed Lockhart, chief executive, Future Homes Hub; Paul Morrell OBE, co-chair, Independent Review of the Construction Product Testing Regime; Flora Samuel, head of architecture, University of Cambridge; the Rt Hon Chris Skidmore OBE, MP and founder, Mission Zero Coalition; Julia King, Baroness Brown of Cambridge; Elwyn Grainger-Jones, Cradle to Cradle Products Innovation Institute; Simon Sharpe, director of Economics for the UN Climate and author of *Five Times Faster*; Tim Smedley, author of *The Last Drop: Solving the world's water crisis,* and many more...

Martin Fenn MCIOB
CIOB Oceania

How MMC stacks up: Australia vs UK

Sydney-based CIOB member **Martin Fenn** examines Australia's recent forays into offsite construction – and what it could learn from the UK

SCHOOL INFRASTRUCTURE NSW AND QBUILD

▲ Jordan Springs Public School was part of the modular pilot programme run by School Infrastructure New South Wales

There's a conundrum at the heart of Australian construction. The sector is booming, with huge transport and energy infrastructure schemes underway across the board. The value of work done rose 8.5% in the year to September 2023, led by engineering (up 14.9%) and residential (up 4.4%), the Australian Bureau of Statistics reported at the end of November.

But it has been called a "profitless boom", marked by the lowest productivity growth in over three decades and more than two-thirds of builders reporting decreasing profit margins in 2023, according to a survey by financial advisory firm BDO Australia.

The causes are familiar: severe labour shortages, escalating material costs and a fraying global supply chain. Coupled with the urgency to accommodate a growing population, these predicaments compel industry to seek alternative solutions. No wonder, then, that attention is turning towards modern methods of construction (MMC), an approach that holds immense promise.

MMC prioritises offsite manufacturing techniques, cutting-edge digital technologies and standardised processes. It strives to boost productivity, enhance quality and reduce risk – achieving faster construction with fewer resources.

Comparing two countries

Despite a spate of recent modular builder failures, the UK stands out as a global leader in MMC, with an estimated 7% of construction projects delivered through it.

It has both a higher adoption rate and more structured approach, with MMC classified into seven categories including volumetric, panellised, 3D printing and onsite optimisation techniques such as pre-assembly and technology like drones.

There is also a more resolute government commitment, exemplified by Homes England's pledge to employ MMC for a minimum of 25% of its project pipeline. But Australia does not enjoy this backing.

The value of Australia's construction sector increased 8.5% in the year to September 2023

8.5

Necessity is the mother of invention, and a housing shortage has driven Queensland's foray into MMC
Martin Fenn MCIOB

So, what's behind the disparity? First, Australia's vast and diverse geography and climate pose unique challenges and opportunities. Approximately 32 times larger than that of the UK, it has eight different climate zones, from hot desert and equatorial to alpine. This stands in sharp contrast to the UK's single, more uniform climate.

Moreover, the UK's population is more than 2.5 times larger than Australia's, and Australia's population density is primarily concentrated in its major coastal cities.

It is worth noting that, although the UK comprises four nations, central government remains powerful. In contrast, Australia operates as a federation, comprising a federal government and multiple states and territories, with a three-tiered system of governance: federal, state and local. This adds layers of complexity to fragmented decision-making.

Unions, risk and business as usual

Australia's construction industry is heavily unionised compared to the UK. While unions prioritise fair labour practices, the associated regulations and negotiation processes can hinder the ability to change quickly. Change means risk and, with profit margins under strain, companies understandably ask why they should transition to new practices when there's no margin to absorb the pitfalls.

Australian tradespeople often earn significantly more than their UK counterparts, largely owing to Australia's higher minimum wage. It is not uncommon in cities like Sydney to see the driver of a convertible Maserati don a hi-vis vest. When people are earning well with business as usual, the impetus for change will necessarily be weaker.

Despite all this, there are notable instances of MMC's successful implementation across Australia. In the state of Victoria, the Victorian Permanent Modular Schools Program (VPMS) has achieved an impressive track record with the delivery of more than 100 modular school buildings.

They say necessity is the mother of invention, and here the state faced an urgent need for more classrooms while addressing asbestos removal in schools. The offsite, modular approach effectively halved construction timelines.

▲ Galungara Public School was part of the New South Wales MMC pilot

▼ QBuild apprentices Keira-Lee Knott and Samarra Porter

Signs of change

In New South Wales, state agency School Infrastructure New South Wales carried out a successful volumetric modular school pilot programme, resulting in a standardised kit of offsite-manufactured building components.

This was to prepare for a programme covering hundreds of schools. It will be rolled out under a common digital platform with a goal of promoting advanced manufacturing, allocating risk fairly and achieving high quality and safety standards.

In Queensland, a severe housing shortage has driven the state's foray into MMC. QBuild is a commercialised business unit of the state government. It teamed up with the Office of the Queensland Government Architect and industry suppliers to deliver around 100 homes by the end of 2023.

At the federal level, the government has pledged to build 1.2 million homes in the next five years – an annual construction rate of 240,000 houses. But current projections for 2024 foresee only 180,000 houses built.

This raises the question: has the Australian industry learned enough from its pilot projects to use MMC to meet this ambitious housing target?

I'll be watching keenly.

Martin Fenn MCIOB is CIOB's MMC lead for Oceania and a consultant to emerging contech companies.

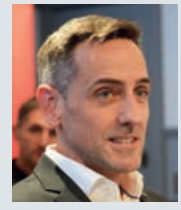
‘The digital agenda is about a shift in mindset’

Construction Management, the Chartered Institute of Building and Hilti recently brought together a panel of senior professionals from across the built environment to discuss the industry’s carbon reduction challenge and the role of digitisation. **Will Mann** was in the chair

Faiçal Lahmamsi
Chief executive, Colas

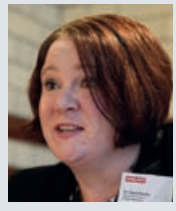
Alistair Kell
Chief information officer, BDP

Dr Christoph Loos
Chairman board of directors, Hilti Group

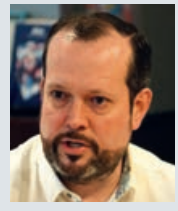


Rainer Ringgenberg
Head of region Northern Europe, Hilti

Sharon Turner
Group social value manager, NG Bailey



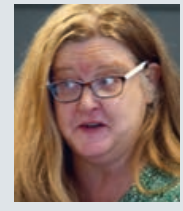
Dr Claire Handby FCIOB
Business leadership advisor



Leigh Carter FCIOB
Director, Turner & Townsend

Phil Beaumont FCIOB
Head of integrated management office, Costain and CIOB trustee

Professor Chris Gorse MCIOB
Professor of construction engineering and management, Loughborough University, and chair of CIOB's sustainability advisory panel



Elizabeth Edgington
Group carbon and sustainability manager, NG Bailey

◀ From left: Elizabeth Edgington, Phil Beaumont, Dr Christoph Loos, Faiçal Lahmamsi, Dr Claire Handby

Will Mann: According to the World Green Building Council, the global built environment is responsible for 40% of all carbon emissions, which includes day-to-day operation of structures, plus transporting materials to a site, and 10% coming from the embodied carbon present in the building materials themselves. How is the construction industry going to clean up its act?

FL: Too much blame is laid at the door of the construction phase of a project. It's important to consider the whole life cycle of a scheme. Take a major highway project, for example. The construction element contributes a fraction of the emissions that the road users will generate. Scoping is very important when we're talking about sustainability. And not just focusing on the construction phase, but also much earlier in the process, when it comes to designing a project.

CH: Improving productivity through better collaboration is a way forward to a more sustainable future. We need to create a sustainability culture across the industry, and understand where we're all coming from, from designers through to subcontractors and manufacturers. We need a supportive consequences culture as well, in light of the Building Safety Act. And the introduction of carbon auditing would focus people's attention on their bottom line, especially if firms missing carbon targets faced the prospect of a fine.

RR: The supply chain is super-fragmented. We have a lot of different parties on site, all working on their own part of the project. There needs to be greater clarity and transparency around who is doing what. We need to work with suppliers who have a proven track record in sustainability. We reward suppliers who achieve EcoVadis certification and we try to reuse as much material as we can [when a tool is returned to us at the end of its working life]. We achieve around 27%, whereas the average in construction tools is around 9%.

ST: Part of my remit is to work with our supply chain and ensure they're working to the same social values as us. Around 75% of our supply chain want to have science-based targets in the future. It also helps that they are on board, firing over a lot of questions in relation to sustainability and what we're doing to produce it. Our KPIs around suppliers relate to their efforts to lower their carbon footprint and what they are doing to achieve that.

AK: There needs to be some sort of mandatory dutyholder role within an organisation, whose responsibility it is to ensure that that company ▶

Sharon Turner: "Around 75% of our supply chain want to have science-based targets in the future"

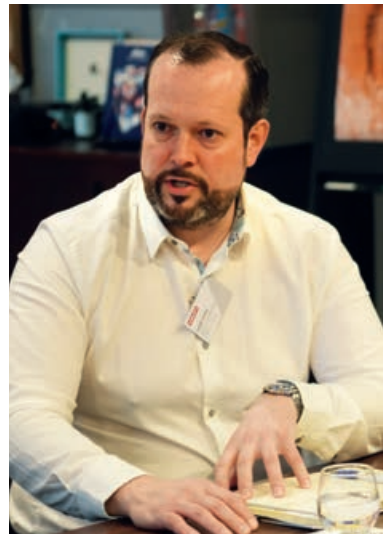
We should look at the cost of carbon. As long as we don't set targets for companies, don't apply a cost to carbon emissions and punish those who don't meet those targets, we will not move forward
Dr Christoph Loos, Hilti Group

meets its carbon emissions targets. That could be a gamechanger for the industry, but how that is likely to play out through legislation is open to question, particularly with the current government moving away from legislation around environmental issues rather than showing it is determined to tackle the problem through parliamentary action.

CL: If we can have better data transparency, and appreciate what that data is telling us, then we can do a better job. On a wider scale, we should look at the cost of carbon. As long as we don't set targets for companies, don't apply a cost to carbon emissions and punish those who don't meet those targets, we will not move forward. Also, better design can help lower overall carbon emissions by making better use of fewer materials. And of course we have to look at the entire life cycle of a building when determining its carbon output.

PB: The issue of a material's provenance is important, especially when we're talking about sustainability and ESG areas. At Costain we're keen to see where a material has come from. Is that bauxite ethically sourced? How has that aggregate been produced?

Minimising transportation of materials, where possible, is another area we want to address. And reducing waste. People seem to accept 5% waste, but why should that be? You see lots of materials left over after a project is finished. We should be managing that better.



Leigh Carter: "We ensured the building had digital infrastructure so doctors could meet patients virtually"

EE: Much of what we're all trying to achieve can be affected by our customers. We can work with them to try and persuade them about carbon issues, get to them to shift as well. But until they get on board it can be very difficult.

A construction firm can be environmentally committed but investment is going to be difficult if the customer isn't interested; the nuts and bolts of sustainability simply just aren't sexy. We must get the carbon reduction message across better, and we need to support our customers to show them the way on sustainability.

CG: Uppermost in my mind is the integrity of the information, the data, that we're working with. Currently there are significant gaps in the information on many building products in use, gaps in the services the industry offers, and significant gaps in terms of the carbon databases being used and how we calculate embodied and operational carbon of a building.

The quality of information across the industry can vary considerably, but as a sector we have to step up,

The global built environment is responsible for 40% of all carbon emissions

40

The quality of information can vary considerably, but as a sector we have to step up, take a lead role and improve this. We have to improve the integrity of the information being relied upon

Professor Chris Gorse, Loughborough University

take a lead role and improve this. We have to improve the integrity of the information being relied upon.

WM: How do you think digitalisation and new technology can help with reducing carbon emissions?

LC: We've worked on a hospital building programme, where we've standardised rooms and modularised the process. The starting point is reimagining what a hospital is.

Rather than taking up space in an acute hospital facility with offices, we ensured the building had the digital infrastructure so doctors could meet patients virtually, which saved them travelling to the hospital. The potential around standardising hospital design means people don't have to design from scratch. That's going to save a lot of carbon, we believe.

AK: A key point here definitely concerns the materials. And having a materials database. It's about agreeing a standard set of information that we require from every manufacturer.

That's going to allow us to understand within our design work what the embodied carbon actually is. It's going to begin then to allow us to utilise emerging technology, such as AI, to help inform better decision making in the design process.

And that's also going to force the material suppliers to improve their processes, leading, hopefully, to fewer emissions.

▲ Faiçal Lahmamsi, (with Christoph Loos, left): "The issue is whether we as an industry have the skill sets for our technological ambitions"

CG: We're making progress on simulation tools but they still rely on performance data that is embedded in the tools we're selecting. And we're sticking with products that are known quantities that we've tested. People make assumptions for products we haven't tested, and it's those assumptions that present risks.

Changes can be made to a product on site, such as on a cladding system, and consequently it doesn't perform as expected. Ad hoc adjustments like that can cause real problems, particularly in terms of a facade's integrity.

RR: One area which can help is services, hardware and software. We have a lot of requests from customers who want to improve sustainability by having fewer materials in a project. Greater use of BIM, plus having more people, more engineers out in the field and better back office support all helps. Plus we're seeing customers switching from fossil-fuelled tools to battery-powered ones. One made the switch and removed 50,000 litres of gasoline per year from his cost base. Good news environmentally too.

ST: We've run a design and build programme called 'Engineering Your Future'. It includes BIM obviously, ▶

I feel we have to demystify some of the language around digital technology, and perhaps drop the term 'BIM' and simply refer to the wider concept of information management
Phil Beaumont, Costain

and covers how students can make buildings greener and more energy efficient through product selection. Plus we employ digital technology to measure our social value, and we have KPIs used to assess how this situation is progressing.

FL: We're developing a large number of digital solutions globally and have recently introduced some to the UK. One of these, called Anais, uses data already installed in vehicles to monitor and assess driver behaviours. It can help with road network management by enabling remote identification of an issue through its behaviour change warning system.

We have another digital tool which creates a map of an area, like a Google Maps for the construction activity, called 2IN (pronounced 'twin'). It brings together a wide range of data about buildings, roads, underground infrastructure, etc.

The issue is whether we as an industry have the skill sets for our technological ambitions. We'll need universities and other educators to develop programmes so that we have the skilled people we need.

WM: Is digital adoption making construction more productive and more profitable?

PB: I feel we have to demystify some of the language around digital technology, and perhaps drop the term 'BIM' and simply refer to the wider concept and requirements of information management in line with ISO 19650. Many people don't appreciate what it means. We need to come up with better ways to get those who perhaps don't connect with digital technology to do so. And the language used may be a place to start.

EE: We've been looking into waste measurement, and clearly digital technology is going to play a big part in how we improve our assessment of waste generation and how we can reduce it. It's obvious that we need to be embracing these things, although the thought of having even more data to go through is rather overwhelming.

▼ Rainer Ringgenberg: "Customers want to have fewer materials in a project"

LC: We're really focused on pushing our digital agenda. It's about creating a shift in outlook, a shift in mindset, in terms of how you're going to do the job and the tools you're going to use. It takes time to evolve those different behaviours effectively, but it's the direction we're heading in.

FL: Like Leigh, it'll take time, but we're seeing a lot of progress the more we move into that space. We're seeing efficiencies being created, we're definitely eliminating waste and, as a result, we're lowering our costs. Introducing digital technology can help us identify where we need to do things better and can achieve efficiencies, which can have a positive knock-on impact in terms of carbon emission reductions.

CH: Post the pandemic we've all seen different ways of working and many of us are using digital technology to work remotely. Businesses do far more work on things like Teams and Zoom than before, and that eventually feeds through to the number of people required on a building site. I'm really optimistic about digital tech's potential... and I haven't even touched on the benefits of digital twins!

CL: We have to be realistic and acknowledge that we are an industry in transition. There is going to be a cost element to having so much digital technology in a building.

A newly completed building with all these things might be a bit more expensive to build than one without. We need to take a leap of faith. Digitisation and data transparency are needed for productivity, sustainability and safety. But the industry's leadership needs to play a role in driving the digital agenda. We've just to go through a tipping point.

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The platform allows managers to oversee more work at a time

Futureproofing through digitisation and real-time data

Connecting people with data across projects is essential for contractors looking to accelerate their business, writes **Brandon Oliveri-O'Connor**

As anyone running a construction company knows, the difference between making a profit or a loss is often down to how well everyone connects and collaborates. Timely, accurate information, often referred to as data, becomes the fuel.

Projects have a greater chance of success if workforces can draw on the most up-to-date technology in real time: they must be able to monitor and analyse disparate data and make confident decisions on costs, timings and resources. For that, they need a construction platform that connects multiple strands of data in one place – a single source of truth – and which reports the true state of play.

Having direct access to this information is helpful to those in senior roles – the dashboards that an integrated platform generates provide easy visibility in real time of how contracts are performing and potential impacts on the bottom line.

Lead transformation with a data-first approach

Digitising data leads to fewer building mistakes, less rework and improved productivity and site safety. A recent Procore survey of construction leaders in the UK and Ireland, part of the *How We Build Now* report, found that senior executives believe digitisation could cut project costs by as much as 25%.

This is truly transformative change and it's being driven by technology

that leverages every number, every process and every detail that goes into a project. Business leaders can then drive accountability across their teams to address issues promptly. They can also use a different view of data to confidently demonstrate progress to their clients.

Build trust through data transparency

Data can be overwhelming but not if it's brought together in one place rather than in unconnected silos. Over our 20 years in construction, we at Procore have seen first-hand how empowering it is for businesses when a platform captures, standardises and integrates data, allowing elements of information to 'talk' to each other, bringing a project's many strands of information into that one single source of truth, and making it open and accessible to all.

This level of transparency plays a key role in developing strong collaborative relationships with teams, clients and supply chain partners. Stakeholders can elect for a high-level overview of projects or can drill down into more detail to learn more about specific elements.

25

Senior executives believe digitisation could cut project costs by as much as 25%

A construction platform also enables tight control of the financial elements of the project and provides visibility of site operations to all stakeholders. By tracking against a project's budget in real time and sharing that information across higher levels in the company, a construction platform allows financial decisions to be made confidently and gives those in the senior positions the visibility they need to make informed decisions.

Integrate data from across the business

Traditional paper-based processes and non-integrated software solutions mean there is no complete visibility into how a project is progressing and can increase significantly the likelihood of cost and time overruns due to poor coordination between the supply chain and the management team.

Construction platforms such as Procore overcome these issues by channelling all processes, documents and personnel into one integrated easily locatable place.

The platform is designed to scale across multiple projects, allowing managers to oversee more work at a time. Managers can use the technology to identify performance trends and areas that are consistently tracking behind budget or time.

Platforms can bring in data from the HR and commercial functions. It then becomes possible to cross-reference training and experience against staff availability to quickly pinpoint the best qualified person to bolster a project team.

But, as the industry continues to digitally transform, certain departments will inevitably continue using their own software. Therefore, your platform needs to have a strong ecosystem of API connectors to integrate data around estimating, tendering, enterprise resource planning (ERP) and BIM – or allow visibility into planning, purchasing, inventory, sales and marketing.

By tracking against a project's budget in real time and sharing that information across higher levels in the company, a construction platform allows financial decisions to be made confidently

Embrace change management

Capturing, integrating and standardising data from across the business was seen as the surest way to improve operations according to Procore's survey of construction business leaders in the UK and Ireland in its *How We Build Now* report.

With this in mind, we continue to make the Procore platform and app easy to use. Our 24-hour human support is always there when your team needs help. Because we know that driving technology adoption is never easy or quick. We work hand in hand with the industry to help make technology as straightforward as possible, so you can focus on building the world and driving the business.

In a world that is changing faster than ever before, and becoming even more competitive, you need as many insights into your business as you can obtain. Investing in construction platform technology will pay off not just now, but for the years ahead. ●

***How We Build Now 2023* can be downloaded at procore.com. Brandon Oliveri-O'Connor is Procore's head of the EMEA region.**

▼ Data can be captured and standardised for analysis

Paul Gibbons
Decipher

Richard O'Brien
Ross-Gower
Insurance Brokers

'Our building project has suffered storm damage. What can we do?'

This month's contract clinic question comes from a contractor who was constructing an office building when Storm Henk struck, causing significant damage to the half-built facility. **Paul Gibbons and Richard O'Brien** explain how this is handled by standard contracts and insurance policies

THE QUESTION

The recent storms have damaged an office building we were constructing. How does our contract deal with this, and can we claim on insurance?

THE ANSWER

This fundamentally comes down to several key questions. First, what does your contract say? Second, would any insurance policies respond to it? Also, could the damage have been reasonably predicted, what damage has arisen, and what steps had (or should have) been taken to mitigate against the damage?

Under standard contracts, there are a few things that tend to come up. Your contract will need to be reviewed to identify what circumstances exist in each. The likelihood is that the contract will allow an extension of time for relevant issues. You may also be entitled to money, depending upon what the contract says.

Examples of clauses that may help include:

- Exceptionally adverse weather. Would the conditions that led to the damage be reasonably classed as exceptionally adverse? This is slightly subjective, but the conditions would need to lie outside 'average' expected conditions.
- Damage caused by 'specified perils'. In this case, you may need to see if an exceptional storm or similar event is mentioned as a 'specified peril' in the contract.
- Force majeure. This again, can be a little subjective, and will be subject to a test around whether the incident or weather could have been foreseen. A common example of force majeure debated in recent years was the Covid-19 pandemic. Before the pandemic, some argued that it was so exceptional that no one could have predicted such an event. Yet it would be hard to argue now that a pandemic is unforeseeable.

> **You may need to see if an exceptional storm or similar event is mentioned as a 'specified peril' in the contract**

Another consideration may be your insurer. Does the project have in place a policy that might help recoup any of the losses incurred by the event? The fundamental question of whether storm damage to a construction site is covered under insurance is fairly straightforward. In short: yes, it is typically an insured peril. However, beyond this, there are other areas of concern, as follows.

Physical damage to the works

Insurers will require proof that a storm occurred. There is no specific limit upon which it is deemed a storm occurred, such as wind speed. However, as with the 'exceptionally adverse' term noted above, insurers would not pay a claim that was from standard weather patterns, for example, if materials were left in the open overnight that were damaged by rainfall.

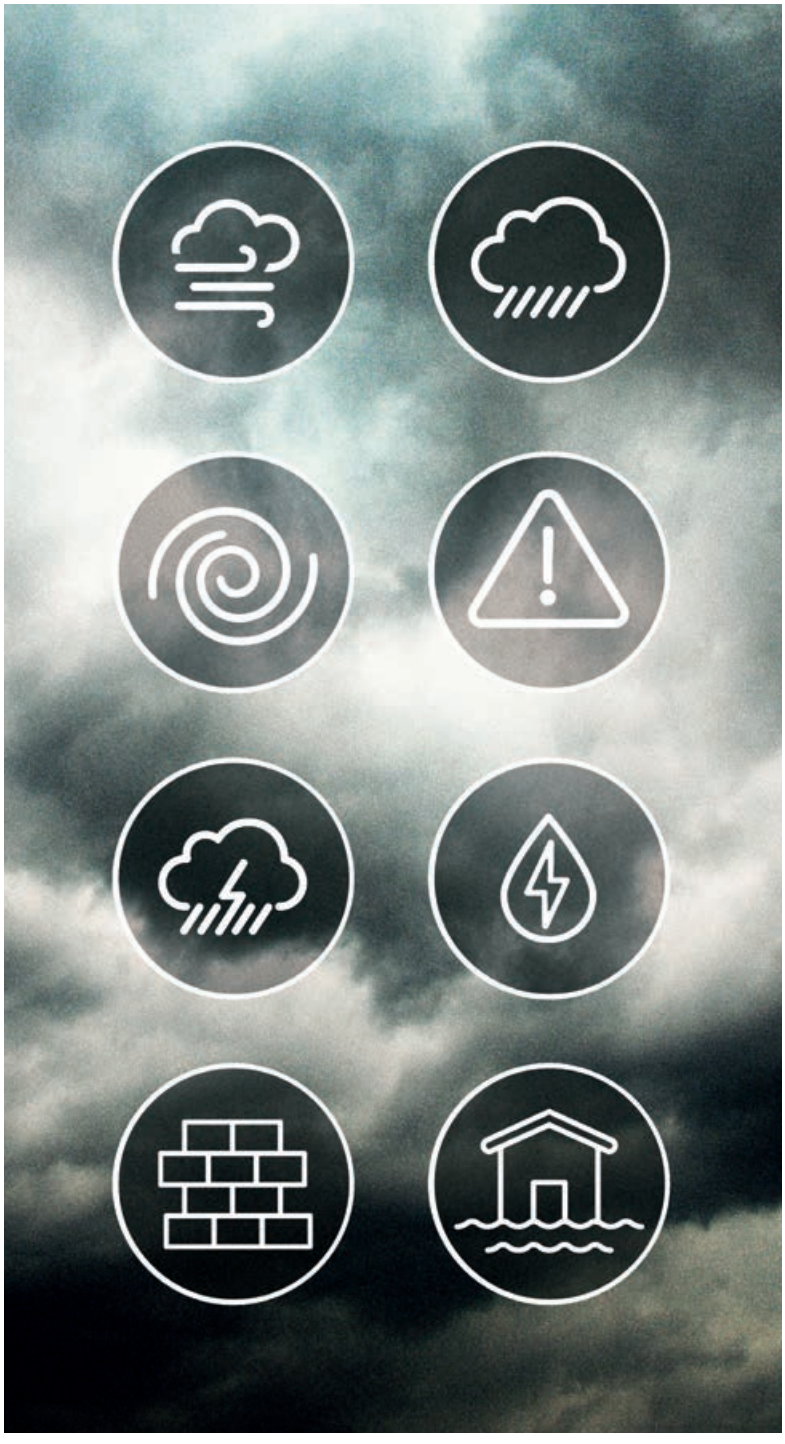
It should always be noted that the insurance of the works should be set up to reflect what is agreed in the building contract, for example, JCT. A contractor's annual construction all-risks policy will not respond if the contract stipulates that the employer is responsible for covering the works.

Project delay resulting from a storm

This is more problematic. Delay due to insured incidents can be covered under delay in start-up policies (DSU).

However, actually evidencing the delay caused by smaller incidents

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



A project may already be delayed for a myriad of reasons and quantifying the loss due to the storm can be difficult to unpick

can be complex. For example, a project may already be delayed for a myriad of reasons and quantifying the loss due to the storm can be difficult to unpick, as well as the actual loss that is suffered. If a developer is selling the completed build, does the loss include additional interest payments on financing? If several houses have been built, how can the developer know when they would be sold following practical completion?

Damage to third party property or personal injury

There is often a misconception that if, for example, a tree blows down on to a neighbouring property there would be some liability against the property owner. This is often false as it would be regarded as force majeure.

However, if a serious incident occurred, for example, scaffolding blowing down and injuring passers-by, a claim may be sought if it was deemed that the scaffold was erected without due care. In this instance the public liability insurance of the contractor would defend and ultimately pay any valid claim.

Ultimately, the answer to this question is a combination of checking the detail of your contract, potentially a need for expert advice in the case of complex issues, and referring to your insurance policy and broker. Often, the easiest place to start may be a candid conversation with the employer to identify how much can be dealt with informally, with reference to the various requirements of policies and contracts.

Paul Gibbons is CEO and founder of Decipher – A DeSimone Company, and Richard O'Brien is managing director of Ross-Gower Insurance Brokers.

‘Embed sustainability within the curriculum’

Dr Joanna Poon FCIOB, associate professor and head of discipline, built environment, at the University of Derby, is working in the vanguard of sustainability and is passionate about embedding that into teaching

What are you working on at present?
Internally, I conduct an overall review of the courses within the discipline I lead to ensure they comprehensively and systematically incorporate UN Sustainable Development Goals (SDGs) and inclusivity and diversity within the curriculum. It is the further stage of my previous work on mapping SDGs within the curriculum of all undergraduate and postgraduate courses within the portfolio.

I also bring in my expertise of leading equality, diversity and inclusivity (EDI) and accessibility as part of my role as chair for the Quality Assurance Agency (QAA) Subject Benchmark Statement (SBS) for Land, Construction, Real Estate and Surveying (LCRES).

Externally, I am at the final stage of finalising the QAA SBS for LCRES after extensive public consultations. The final version of SBS will be issued in April 2024.

I am working on selecting reviewers to papers for a special issue of the *International Journal of Sustainability in Higher Education,* published by Emerald, focusing on assessing the incorporation of UN SDGs in teaching and learning policies of higher education institutions, of which I am editor in chief. This issue is scheduled to be published in summer 2024.

▲ Education enables students to engage with the sustainability agenda

Why is it important to the construction industry now?
Buildings generate nearly 40% of annual global greenhouse gas emissions. As an educator, it is important to enhance students’ awareness during their study to guide the future generation of built environment professionals to continue engagement with the sustainability agenda. It can be achieved through embedding sustainability within the curriculum and engaging with research to produce forefront knowledge.

EDI is important in construction as there is a stereotype as a male-dominant industry. Encouraging

inclusivity and diversity is a useful strategy to address the skills gap. Construction professionals have a significant role in addressing EDI as we have a key part to play to ensure premises are addressing requirements of the Equality Act 2010.

Are you working with any construction companies so they can apply your research/innovation on their projects?
Currently, I am working with an industrial partner to develop new flood resistance products which require no intervention to be effective against flood water. The products must meet the requirements of BS 851188:2019+A1:2021 and be tested and certified accordingly.

Property flood resilience (PFR) is the design and installation of modifications to a building's structure to lower the flood risk, reduce damage and speed up recoverability after flooding.

What advice would you give to a built environment professional who wants to explore opportunities in education alongside their work?
I strongly encourage built environment professionals to teach alongside their industrial role.

Being an educator is an ultimately rewarding experience. It contributes to the development of the future generation of built environment professionals. It also shapes the future of the industry. We welcome practitioners to bring in contemporary practical experience to enhance our students' practical knowledge.

My advice to colleagues interested in exploring opportunities in teaching is to possibly start with giving guest lectures or part-time teaching. Being a practitioner and educator, you can experience the best of both worlds.

> **I strongly encourage built environment professionals to teach alongside their industrial role. Being an educator is an ultimately rewarding experience**

How important is it to bring industry experience to the classroom?
It is ultimate important. Built environment is a vocational subject and it is vital for our students to have industry experience. It enhances their employability and supports them in being work-ready graduates.

There is increasing recognition of the importance of technical qualification in the recent years. Apprenticeships have now become a mainstream of education programme and the other Higher Technical Qualifications have also been implemented for several years.

How wide is the gap between academic research and industrial application? And how important is it to maintain links between academia and professional practice? How can we meet these challenges?
The gap between academic research and industrial application is getting narrower. There has been wider recognition of the importance of close collaboration between academic research and industrial application. Academics generate new knowledge and ideas. Industry applies the new technology and know-how into practice.

An effective approach to enhance industry and academic co-operation is through collaboration. There are funding schemes such as KTP (knowledge transfer partnerships) which facilitate the incubation of academic research ideas into industrial practice.

How do you think becoming an educator has helped in your career?
It is rewarding on personal and professional levels. I always wanted to be an educator as I believe it is important to develop the future generation of construction professions. As an educator, it brings me the opportunity to work in different countries and widen my horizon.

CV: Dr Joanna Poon

- Associate professor in built environment and head of discipline – Built Environment, University of Derby, November 2016 to present
- Head of property and real estate, School of the Built Environment, University of Salford, 2015-16
- Honorary fellow, School of Management and Marketing, Faculty of Business and Law, Deakin University Australia. 2014-16. Also honorary lecturer for Laureate, USA, adjunct professor at Robert Kennedy College, Switzerland, and work in Hong Kong and Northern Ireland
- Senior lecturer, Department of the Natural and Built Environment, Sheffield Hallam University, 2014-15
- Senior lecturer, School of Management and Marketing, Faculty of Business and Law, Deakin University, 2012-14
- Senior lecturer, School of Architecture, Design and the Built Environment, Nottingham Trent University, 2008-12
- Project manager for UK blue-chip company

CIOB Community

CIOB Academy course takeup led by retrofit and building safety

Conservation and building safety courses see rise in interest with growth of retrofit and introduction of Building Safety Act

Trend shifts in the CIOB Academy's course takeup are directly linked to external factors, data has revealed.

Demand for building conservation learning soared between 2018 and 2021 given the rising prominence of conservation and retrofit, with attendee numbers peaking at 159 for a single year.

Meanwhile, the impact of Covid-19 sparked a drastic uptake in the number of people registering for JCT Contracts courses – with a staggering 135% increase in enrolments between 2020 and 2021.

CIOB believes this is a direct result of the pressure put on contracts by the Covid-19 pandemic and that the increased takeup shows how clients and contractors do not want to be caught out by delays and associated costs again should a similar situation arise.

The professional body also experienced a surge of demand in building safety-related courses since the introduction of the Building Safety Act.

Between 2022 and 2023, interest in CIOB's fire safety and building safety courses spiked significantly, with booking numbers increasing by 18% and 28% respectively. The data revealed a gap in the training market for a dedicated Building Safety Act (BSA) course.

To satisfy demand, CIOB recently unveiled its new Building Safety Act Awareness e-learning course, tailored to ensure built environment professionals can keep up to date with the latest changes to legislation within the construction sector.

▲ Adrian Montague, director of CIOB Academy

Since the introduction of the Building Safety Act in 2022, there has been a real increase in demand for building safety-related courses
Adrian Montague, CIOB Academy

Adrian Montague, director of Academy at CIOB, said: "Since the introduction of the Building Safety Act in 2022, there has been a real increase in demand for building safety-related courses. I am sure this course will be of great benefit to everyone in the construction sector as it covers all the essential elements of the legislation."

Meanwhile, the takeup for JCT Contracts courses soared again in 2023, with CIOB Academy registering 221 learners – a 40% increase from the previous year.

Montague continued: "It is great to see there is still a significant demand for our Academy courses, which we believe are a great benefit to both experienced and aspiring built environment professionals.

"We are committed to continuing to adapt and develop our service offerings, in line with the ongoing changes to the construction sector and we already have a number of exciting opportunities in the pipeline for 2024."

To find out more information about any of the CIOB Academy courses, including details on how to enrol, visit: www.ciob.me/academy.

From left: Alison Smith, BCP Council; Cllr Andy Martin, BCP Council; Chris Cave, Greendale Construction; Felicity Irwin, Poole Museum Foundation

CIOB CEO praises Passivhaus homes

Caroline Gumble visits zero carbon housing development in York

Building work to deliver new Passivhaus housing on behalf of City of York Council has been hailed as best practice in the creation of zero carbon homes following a visit from CIOB.

Caddick Construction welcomed CIOB chief executive Caroline Gumble to its Burnholme Green site – one of two developments under construction for the council's housing delivery programme.

The development comprises 78 Passivhaus homes which have been designed to rigorous energy efficiency standards.

The visit came 18 months after Caddick Construction started work on site, alongside its delivery of a further 34 Passivhaus homes at Duncombe Square.

Gumble commented: "As part of a fantastic day with built environment professionals in York, I enjoyed meeting some of the Caddick Construction team and seeing their work to create the city's first ever zero carbon homes.

"I was impressed with what I saw and with the approach to delivering certified Passivhaus homes, the focus on energy efficiency and keeping the construction low carbon. This is going to be such an important part of the future of the industry and it's great to see it being embedded now."

Designed by Mikhail Riches, both the Burnholme Green and Duncombe Square developments will feature a range of one to four-bedroom homes constructed with low-carbon timber.

Features include rooftop solar panels and air source heat pumps. It is the biggest Passivhaus development in the north of England and 60% of energy-efficient homes will be offered for shared ownership and social rent.

▲ Caroline Gumble (centre) visits the site

▼ Houses at the Burnholme Green development

> **I was impressed with what I saw and with the approach to delivering certified Passivhaus homes, the focus on energy efficiency and keeping the construction low carbon**
> **Caroline Gumble, CIOB**

CIOB chartered company starts £3.2m contract for Poole museum

Greendale Construction will work on phase two of project for local council

Chartered company Greendale Construction has been appointed main contractor on the £3.2m contract to complete phase two of Poole Museum for Bournemouth, Christchurch and Poole Council (BCP Council).

The project, which continues from phase one, Salix – also completed by the company – will focus on three main areas: Oakley's Mill, Wool Hall and Scaplen's Court.

At Oakley's Mill, Greendale will be involved with the strip out of the main museum and fit out of four floors, with new floors, walls, ceilings, fire doors and updated mechanical and electrical (M&E) systems for the exhibition spaces.

The existing lift shaft will be adapted to allow a new wheelchair-accessible lift to be installed.

Wool Hall will benefit from an infill of the floor, new finishes, new fire doors and new M&E installations.

Scaplen's Court will also have new floors, walls, ceilings, fire doors and updated M&E systems.

Chris Cave, commercial director at Greendale Construction, said: "A major focus of the project is to open up the buildings, doubling public and display space. We will also be making the museum accessible for all."

Cllr Andy Martin, portfolio holder for customer, communications, and culture, commented: "We have a once-in-a-lifetime opportunity to transform Poole Museum from a town-scale museum to a regional-scale offer. We are conserving and breathing life into much-loved local buildings, restoring their historic character and providing welcoming and accessible cultural spaces."

Member awarded honorary freedom of Ipswich

Mayor presents honour rewarding John Norman's longstanding local expertise

John Norman, a long-standing CIOB member, has been awarded the Honorary Freedom of Ipswich by the mayor of Ipswich on behalf of the local council.

The accolade recognises the work and dedication he has given to the industry as well as his role as chair of the Ipswich Society, a post he has held for many years.

Norman was chair of the CIOB Suffolk Centre section between 1987 and 1989. He had been actively involved in the committee for several years previous to this.

In 1996, he became junior vice chair for the CIOB Eastern Regional Council, progressing to senior vice chair from 1997 to 1998. He then served as interim chair of the newly formed East Anglia Branch in 2009. He continued to serve on the local Suffolk and Ipswich committees until 2020.

Norman used his local expertise to facilitate site visits to many developments in the area, most recently the new flood barrier on the West Bank terminal.

He has conducted numerous talks on his favourite area of Ipswich, the waterfront, and nearby historic churches.

CIOB thanked him for over 40 years of service, acknowledging the enthusiasm he brings.

New generation of graduates welcomed at CIOB ceremonies

Congratulations to new fellows, members and chartered companies who received their status at two graduation ceremonies on 20 October

Morning ceremony

FCIOB
Paul Hayman (also Training Partnership and Chartered Company)
Richard Smith

MCIOB
Mathew Adams
Emmanuel Amodu
Gonapinuwala Thantirige Anjana Sameera Thantirige
David Barrett
Taylor Boutin
Jim Box
Jason Ellam-Brown
Luisa Elmes
Leslie Fenner
Ben Fowler
Matthew Goffatt
Peter Gregory
Calum Inch
Georgi Ivanov
Samuel James
Chris Kearns
Julian Kirkham
Ross MacAskill
Magdi Madi
Kenneth Mallinson
Aaron McPherson
Jordan Murphy
Mayooran Navaratnam
Daisy Nelson
Danny Newland
Scott Noble
Olufemi Odunyemi
Olabode Ojo
Stanley Parkinson
Sam Radcliffe
Shaun Rowland
Gary Rutter
Valentyn Samchuk
Benjamin Samuel
Jamie Smith
Gavin Taylor
Robert Wakeham
Daniel Waterfield
Ned West
Jonathan West
David Wood
Daniel Woolley
Hussain Zaman

Afternoon ceremony

Chartered Company
Conal Kennedy MCIOB

FCIOB
Glen Ashby
Andrew Fleming

MCIOB
Segun Aborisade
Oluwadamilare Awonuga
Quinn Bailey
Denis Barari
Piers Beynon-Thomas
David Bolton
Christopher Brenchley
Stuart Burch
Paul Carney
Nichola Chambers
Paul Chilman
Mark Clare
Harry Clarke
Jonathan Conboy
Daniel Cooper
Philip Courtney
Mark Douglas
Nicholas Gibbons
Giovanni Giovine
Alv Gomez
Duncan Grimes
Lee Hardy
Ryan Harris
John Heyburn
Ian Hitchings
Gareth Horwood
Conal Kennedy
Kyle Legg
Keiran McCready
David McEwan
Tomos McFarland
Satwinder Panesar
Andy Patmore
Matthew Prosperino
Michael Prosperino
Stephen Rice
Sonny Russell
Jason Lee Smith
Joe Southon
Luke Thomas
John Tlmlin
Clive Webb

TechCIOB
Sean O'Connor

CIOB members to visit Exeter's net zero hotel

Register online for a chance to tour the site with Red Construction on 20 February

CIOB members are being given the chance to visit the site of the Zeal Hotel in Exeter (pictured) – the first net zero operational carbon hotel.

Red Construction is delivering the project, a four-star hotel consisting of 5,148 sq m of floor space over four storeys. Facilities include 142 bedrooms, bar and restaurant space along with private dining, conference space and a gym/fitness centre.

Outside will be hard and soft landscaping, parking and an improved ecological habitat.

The visit, on 20 February, will include a tour of the current stages:

- Progressing the roof slab;
- Pods to start going into building;
- Steel framing system in progress;
- Windows install commenced.

Register online at CIOB Events or contact estreames@ciob.org.uk.

Free technical sheet on conservation

The second edition of *Building Conservation – Its Meaning, Understanding and Implementation* is now available free to CIOB members.

This revised downloadable technical information sheet outlines what is involved in managing and maintaining historic and traditional buildings, as well as providing the background to building conservation and the principles and ethics involved.

Written by conservation expert John Edwards, director of Edwards Hart Consultants, the publication offers practical insights, with examples and case studies detailing steps for developing, planning and implementing projects.

Visit ciobacademy.org for details.

One to watch

Joshua Nelson, trainee site manager, Construction East Anglia Morgan Sindall and CIOB Tomorrow's Leader

Why did you choose a career in construction? What else might you have done?
Construction had always been an interest of mine at a young age before I even thought of it as a potential career. I was interested in large scale developments, complex high-rise structures, historic buildings and the methods that took a building from the ground to a finished product that people can use.

I had work experience and never really looked back. However, if not for construction, then I would always choose something active such as personal training or another form of sports science, as variety in my role and being active is very important to me.

What are you loving about the work so far?
Currently I am really loving the onsite progression at work. The current project I am working on is progressing at pace and the visual aspect of progression – seeing the distinct steps and finished article come together – is the reason I first started to get interested in construction.

Not to mention, as I work through my apprenticeship, gradually being given more responsibility and people to manage helps vary my role and helps my own personal progression in my career.

What made you want to become a Tomorrow's Leader?
I chose to become a Tomorrow's Leader to hopefully encourage many young people in the local community to see the industry how I always have and encourage them to start their own journey. With the industry providing so many varied and rewarding careers it would be great to bring new people into the industry that would have never been attracted to it otherwise.

What are your career ambitions?
My career ambitions right now are to continue to work hard in my apprenticeship and add value to my site team in any way I can and get my degree also.

I have ambitions to get my chartership as soon as I can and work on my competency, allowing me to progress higher within Morgan Sindall until I can successfully manage my own team of professionals.

What do you do in your spare time?
I like to keep active. I'm either in the gym or playing rugby. I currently play for West Norfolk men's rugby team and, although new to the sport, I am finding it's something I enjoy a lot, the social side just as much as the game itself.

Book your place

CIOB Awards 2024

The finalists have been revealed, anticipation is building. Join us for a night to remember at the CIOB Awards gala dinner.

This is your chance to applaud the extraordinary contributions of construction's hottest talent and enjoy an evening of celebration and networking.

Don't miss the construction event of the year!

BOOK YOUR TABLE TODAY
awards.ciob.org/book-now

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Construction Manager of the Year Award

Rising Star Award

Team Award

Client Award

Equality, Diversity & Inclusion Awards

Sustainability Award

Date: Tuesday 9 April 2024
Venue: London Hilton Metropole
Visit: awards.ciob.org

CIOB Awards

Conservation certification recognises competencies

CIOB scheme launched in response to demand for certified conservation specialists identifies three levels of competence

▼ Certification endorses specialist work on heritage sites such as Norwich Cathedral

Is 2024 the year you join the CIOB Building Conservation Certification Scheme and become a Chartered Environmentalist or a CIOB Building Surveyor (in the Republic of Ireland)?

The scheme was launched in response to a growing demand for 'certified' conservation specialists.

Applicants will be required to demonstrate their competence against CIOB's building conservation competencies and the ICOMOS training and education guidelines based on their experience and qualifications. In addition, it requires a demonstration of competence with regard to sustainability and energy efficiency issues.

The scheme offers three levels of competence:

- **Registered:** Demonstrate good working and background knowledge of key aspects of work to traditional buildings and conservation practice, principles and philosophy, and understand when guidance or supervision is required.
- **Proficient:** Demonstrate a depth of knowledge and understanding of conservation practice, principles and philosophy, including significance, and guide and take responsibility for others, while understanding when further specialist guidance is required.
- **Certified**: Demonstrate authoritative knowledge of conservation practice, principles and philosophy, including significance, and contribute to development of conservation standards.

> **Applicants need at least three years of relevant experience working in conservation**

The scheme is open to individuals who hold at least a diploma or equivalent in conservation or have completed the CIOB Academy's Understanding Building Conservation course.

They need at least three years of relevant experience working in conservation. It is open to members and non-members of CIOB.

Applicants can be working in a wide range of built environment roles including works supervisors, site managers, construction managers, building surveyors, design coordinators, project managers and facilities/estates managers.

To find out if you are eligible, or for more information, contact Elaine Dove at edove@ciob.org.uk.

Students gather for Global Student Festival 2024

Annual virtual event takes place on 6-7 March

The global CIOB Student Festival is now an annual event in the CIOB calendar for student members from around the world.

The two-day virtual event, to be held this year on 6-7 March, is designed to inspire, inform and celebrate the CIOB student community.

First established in 2021, the festival is a dynamic and immersive gathering that brings together students, industry experts, thought leaders and academics from diverse communities on a global scale.

It serves as a platform for networking, collaborative learning and gaining insights into trends and careers, all in one space.

By participating students can gather expert advice to set them on the path to their future career.

The event is free. Learn more, view last year's event and register for 2024 at www.ciob.org/events/student-festival.

Online conference explores artificial intelligence in the built environment

Industry experts including Cohesive's Dave Philp will discuss the use of AI in construction

An online conference on the impact of and opportunities brought by artificial intelligence (AI) takes place on 1 February.

Hosted by Eddie Tuttle, CIOB director of policy, external affairs and research, the event brings an opportunity to interactively engage with industry experts to discuss the role of AI in construction.

Participants will hear how AI can be used in the built environment.

Dave Philp from Cohesive will presenting the keynote speech and CIOB's report on *The Roadmap toward AI: How data science, organisational change management and ML are key milestones on the journey towards AI impact*.

Panel discussions will explore smart building and optimising construction using AI.

Find out more at www.ciob.org/events/artificial-intelligence-the-future-of-construction-713018165527.

Two businesses become chartered

Geomex and Dave Forde Consulting gain CIOB status

Two businesses recently secured CIOB chartered company status: Geomex and Dave Forde Consulting.

Geomex is a small team of structural engineers and architectural designers based in Malvern, with particular expertise in historical buildings.

Dave Forde Consulting has over 40 years of experience ranging from residential new build and refurbishment projects, luxury high end apartments and major infrastructure projects.

Based in Hertfordshire, its founder Dave Forde is a chartered construction manager and CIOB mentor, and appears on TV as a construction expert.

◀ Geomex works with historic buildings

DIANE AUCKLAND

▲ From left: Mike Hedges FCIOB and Jamie Harwood FCIOB

Fellows' senior promotions support expansion plans at Beard

FCIOBs to take on key positions

Contractor Beard has announced two senior promotions to support its expansion plans.

Director Mike Hedges FCIOB has been promoted to the newly created position of company operations director. In his new role, Hedges will oversee all of Beard's offices including its headquarters in Swindon and its Bristol, Oxford and Guildford offices. He will also oversee a new south coast office, which is set to open in early 2024.

Hedges joined Beard in 2015 as construction director to head up its new Bristol office. His role expanded to support the growth and development of its other regional offices, working closely with chairman Mark Beard and his fellow directors.

He has nearly three decades of experience in the construction sector, having worked for Wates Construction for close to 20 years.

Jamie Harwood FCIOB, Beard's director for the successful Swindon region, has taken additional responsibility as safety director. This new role will build on Beard's health and safety record, with Harwood now spearheading the entire company safety strategy. He will also continue in his role as Swindon director.

Harwood joined Beard in 2019 and was promoted to Swindon director in 2021. His 25-year career began at Bristol-based Cowlin Construction, before joining Midas in 2013.

As Swindon director, he is responsible for the nearly 100-stong office and a series of construction projects which range from small maintenance jobs to complex, multi-million-pound developments.

▼ Sponsoring CIOB events can help inspire the next generation of construction professionals

A world of opportunities

Sponsorship options enable construction companies to showcase their commitment to the future of the industry

CIOB is dedicated to developing professional growth and elevating industry standards. Often this can be through events and activities for our members and the wider industry. Our corporate plan is at the forefront of our mission, and one of the core themes is bridging the skills gap and developing the next generation of professionals. Helping students embarking on their career journeys is part of that plan.

Global Student Challenge 2024

With a new and successful format, our renowned competition for students worldwide is as popular as ever. Using a new interactive software platform, participants will be challenged to bid and create a virtual project and tender virtually for the project.

The grand prize is a fully funded trip to the CIOB Members' Forum, giving the winning team the unique opportunity to present their bid, receive feedback and network with global industry experts, and secure a £2,000 cash prize. It is a chance to engage with students and introduce them to your organisation in the early stages of their career.

Global Student Festival: 6-7 March

The global CIOB Student Festival is now a staple event in the CIOB calendar. It serves as an inspirational, informative and educational celebration event for our student community around the world.

Spanning different career stages, attendees will benefit from technical expertise, professional perspectives and invaluable wisdom. Though the webinar is designed with students in mind, an impressive lineup of inspirational speakers and industry leaders create learning opportunities for attendees at all levels.

By sponsoring one of these events you will have the opportunity to inspire the next generation of construction professionals or celebrate their achievements

CIOB Rising Star Award: 9 April

Some of the finalists in the CIOB International Rising Star category could have previously entered the Global Student Challenge or got inspiration from the Global Student Festival.

The Rising Star award is an international award that celebrates new, exceptional talent, rewarding individuals who have shown the highest level of excellence at the start of their construction career.

They will be celebrated at the CIOB Awards Dinner on 9 April. Joining our brilliant Rising Star finalists will be the amazing finalists from our other award categories such as Team, EDI and Client awards, as well as our celebrated Construction Manager of the Year finalists, representing a particular category, before the overall winner is crowned.

The Rising Star Award is still available for sponsorship and as sponsor you will join industry leaders, finalists and their organisations as the construction industry celebrates their achievements.

As we plan for 2024, we invite companies to showcase their commitment to the future of construction. By sponsoring one of these events you will have the opportunity to deliver plenary discussions or workshops that inspire the next generation of construction professionals or celebrate their achievements with the Global Student Challenge and International Rising Star Award.

Whatever the activity, your company can join us in shaping the future of the construction industry throughout the world. **For more information, please visit www.ciob.org/sponsorships.**

Diary dates

Highlights of the CIOB Calendar for the coming month

Net Zero: Low Carbon Design and Circular Economy
▶ 7 February, 5.30-8pm, London
Three speakers will discuss sustainability strategy and design.

John O'Dwyer, head of sustainability at Telford Homes, takes a holistic view of a scheme and is engaged from planning to post-occupancy. His role at Telford Homes involves delivering on its 2030 roadmap and implementing its sustainability strategy.

Linda Thiel is a partner and founder at architect White Arkitekter. With her Swedish background, her work embodies a Scandinavian approach to designing homes and neighbourhoods to meet the challenge of urbanisation. The practice has an extensive portfolio of retrofit, conservation and low carbon transformation projects.

Gareth Atkinson, director at Civic Engineers, leads civil and structural engineering for projects ranging from the sustainable retrofit and extension of existing buildings to large-scale regeneration and public realm improvement schemes. He is a strong advocate of sustainable design and sits on the New London Architecture (NLA) Net Zero Expert panel.
Contact: glovell@ciob.org.uk

The New Company Membership Standards
▶ 8 February, 1-2pm, online
The new standards of CIOB Company Membership will demonstrate to clients and suppliers that your business is committed to the principles and values of best practice, ethical standards and professionalism.

Join this webinar to find out about the standards, how CIOB identified what they should be and why, the process for renewals and demonstrating eligibility, as well as a demonstration of the online Moodle system that you will use as part of your renewal.

This session will provide you with practical tips and actionable advice as well as the opportunity to ask questions.

Please note it is a two-step registration process. Please reserve your place on Eventbrite and then click the Teams link to join the session on the day.
Register at CIOB Events online.

Site visit: Zeal Hotel Exeter
▶ 20 February, 3-4pm, Exeter
Join CIOB for this site visit to Zeal Hotel Exeter, the first net zero operational carbon hotel.

Red Construction is delivering this project for a four-star hotel with 142 bedrooms, bar and restaurant space, a gym/fitness centre, parking with EV charging points and an improved ecological habitat. See the lead story on p51 for more details.
Contact: estreames@ciob.org.uk

CIOB and Adecco – Meet the Professionals
▶ 21 February, 5.30-8pm, London
Join CIOB London Tomorrow's Leaders and Adecco to connect with industry professionals and enhance your interview skills.

This in-person event is the perfect opportunity to gain new skills in a relaxed atmosphere, with CV tip workshops, interview support and career advice.
Contact: glovell@ciob.org.uk

Site visit: Northampton Market Square
▶ 22 February, 4-5.30pm, Northampton
Join us to take a look at the plans for the new market square in Northampton. These involve regeneration of the square with new paving, public seating, lighting, market stalls and a water feature. The square dates back to 1235 and a number of archaeological finds have been uncovered.

The team at Stepnell will provide a tour of the works and expain some of the challenges encountered, including the logistics of working in the town centre and with local stakeholders.
Contact: sshort@ciob.org.uk

Historic Environment Co-professional CPD Wales 2024
▶ 27 February, 9.30am-4pm, Caernarfon
Cadw – the Welsh Government's historic environment service – is supporting this event.

Members of the Cadw team will run through important Welsh Government historic environment updates on Historic Impact Assessment in Wales and The Setting of Historic Assets in Wales, followed by a co-professional panel discussion with Q&A.

The day includes a walking tour of recent developments in Caernarfon, including the King's Gate at Caernarfon Castle, the Slate Quay and the new station for the Welsh Highland Railway.
Register at CIOB Events online.

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

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Circulation: Net average 30,842
Audit period: July 2022 to June 2023
Subscriptions: To subscribe or for enquiries, please contact:
Subscription team:
Tel: 01293 312160
Or go online at:
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Construction Management
Published for the Chartered Institute of Building by Atom Media Partners, 26-27 Bedford Square, London United Kingdom. WC1B 3HP
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