

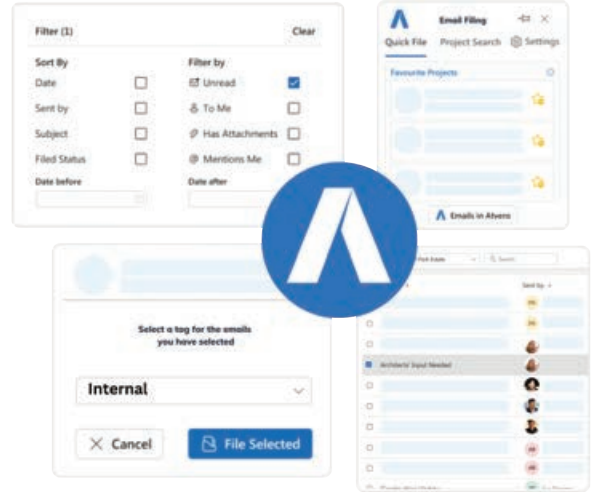
BUILDING BY THE BEACH

CONTRACTOR JENNER GIVES
CM A TOUR OF FOLKESTONE'S
SHORELINE PROJECT



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09/24

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What's on over the next month



ZUTE LIGHTFOOT

▲ Bracing the basement of Mace's Salisbury Square

Temporary works specialist Mabey Hire designed and developed a new 1,200mm diameter steel prop specifically for Mace's huge ongoing development off Fleet Street, where the future City of London Police headquarters will be based. Keltbray is delivering the substructure works.

◀ New Holborn Viaduct building

A CGI shows the 13-storey office that Multiplex will build close to St Paul's Cathedral and the City of London (seen in the background). Building envelope contractor Permasteelisa is designing in Italy the 15,500 sq m facade that is scheduled to start installation in March 2025, with scheduled completion expected after 12 months.



Laing O'Rourke
digital engineer
Ben Hardie is the
Digital Construction
Awards' Rising Star
of the Year (see p35)



◀ **Bridge beams set in place on M25 junction 28**

Six steel girders were lifted into place in pairs for Duckwood Bridge using a 1,000-tonne capacity crane as part of Graham's upgrade of a busy junction between in Essex. The operation entailed bolting together smaller beams mid-air before lifting the completed beams onto the structure.

CYBE CONSTRUCTION & CHANGEMAKER 3D



▲ **3D-printed toilets for travellers**

Concrete printing specialist CyBe Construction, architect Baily Garner and ChangeMaker have developed the first 3D concrete-printed toilets for rail stations. The pods can be printed in under five hours and incorporate solar panels on their roofs.

▶ **Building a resilient UK**

Costain has been awarded an extension to its long-standing framework agreement with a defence contractor. The work, which totals an undisclosed six-figure for a six-month period, involves providing continued support to key UK defence projects.



IAN ARTHUR / CROWN COPYRIGHT

Sustainability champion Saul Humphrey becomes CIOB's new vice president

The academic wants to use his platform to put sustainability at the heart of construction's agenda



◀ Humphrey received the sustainability award at this year's CIOB Awards

The Chartered Institute of Building has named professor of sustainable construction management at Anglia Ruskin University Saul Humphrey FCIOB as its vice president for the 2024/25 term.

He will follow in the footsteps of current president Mike Kagioglou FCIOB and president-elect for 2025/26 Paul Gandy FCIOB by becoming president of the professional body in 2026.

Humphrey left school without A-level qualifications and joined the industry as an apprentice. He has hands-on experience in several roles within construction, rising to become a managing director and later returning to academic studies.

He gained a bachelor's degree at Heriot-Watt University before going on to do a PhD at Loughborough University.

Outside of work, Humphrey prioritises spending time with his wife and two grown-up children, is involved in various charitable organisations and enjoys skiing holidays when he finds the time.

Caroline Gumble, CIOB's CEO, said: "I was fortunate to spend time with Saul and some of his Anglia Ruskin University colleagues earlier this year, learning about the links between industry and academia in the region.

"While there, I heard him issue an impressive call to students to live their values and prioritise sustainability

in construction. In addition, he is a long-standing member and a CIOB Award winner and I am in no doubt that his knowledge, experience and commitment will be of huge value to the CIOB community.

"I am looking forward to working with Saul as CIOB vice president and then as the 123rd CIOB president, taking on that role in 2026."

Humphrey said: "I'm very proud to have been asked to become the next vice president of CIOB, an institution I am privileged to have been a fellow of for many years. I look forward to working closely with the senior leadership team over the coming years.

"I am also humbled at the opportunity to put sustainability at the heart of the construction agenda."

Humphrey is keen to use this platform to work closely with the industry to showcase how construction can become part of the solution to the climate crisis.

"During my career, I started to become more aware of the construction industry's footprint," he said. "The industry accounts for around 40% of global carbon emissions, so we're a big part of pollution and a huge part of biodiversity loss.

"I soon realised the importance of environmental social governance and the United Nations' Sustainable Development Goals, which are of course a big focus for CIOB this next year." ●

I'm very proud to have been asked to become the next vice president of CIOB
Saul Humphrey, CIOB

9 in 10 of building control professionals now registered with regulator

A majority of building surveyors have completed registration with the Building Safety Regulator after the 6 July deadline extension



The latest figures released by the Building Safety Regulator (BSR) show that 4,049 of the regulator's estimated 4,500 practising building control professionals in England and Wales are now registered as of 30 July.

The data shows the following breakdown in registrations:

- Class 1 (trainee): 1,971
- Class 2 (registered building inspector): 1,614
- Class 3 (specialist building inspector): 464
- Class 4 (building inspector – technical manager): 516.

Building inspectors are now required to be registered and complete an assessment demonstrating their competence

▲ Building inspectors are now required to be registered with the Building Safety Regulator

as part of the new building safety regime that came fully into force on 6 April 2024. Under the new regime, the BSR – an offshoot of the Health and Safety Executive established through the Building Safety Act 2022 – took responsibility for the building control profession.

Any building control inspector who fails to comply with the regulator's code of conduct, the professional conduct rules or the operational standards rules may be liable for a fine, prosecution or strike-off.

Initially, all building control inspectors in England and Wales were required to have registered with BSR by 6 April and to complete an assessment competence demonstration.

However, a letter from the Local Authority Building Control chief executive warning of the potential collapse of building control functions due to a lack of available building control surveyors prompted BSR to extend the deadline until 6 July.

The Welsh government has extended the deadline until 1 October 2024.

Commenting on the figures, Ged Cooper, head of building control professional standards at BSR, said: "We are encouraged by this steady increase in numbers and are pleased to see a consistent level of success in Class 2 and Class 3 and it's heartening that a high proportion are also Class 4 technical managers. We expect to see this positive progress continue.

"BSR is focused on being a fair and pragmatic regulator. Granting an extension for building inspectors to complete their competency assessments shows our commitment to a supportive regulatory environment and a level playing field in building control.

"Building control bodies must take regulatory advice from RBIs [registered building inspectors] of Class 2 or Class 3 RBIs to perform their functions effectively. We've started investigations and inspections of these bodies and will require assurance with evidence to demonstrate that they have sufficient resources to deliver their regulatory duties and responsibility." ●

BSR meets CLC over building control concerns

The Building Safety Regulator has met with the Construction Leadership Council to discuss industry concerns relating to building control approval applications.

BSR said that it is receiving a high number of "incomplete or unclear" applications for higher-risk building control that cannot be processed for approval. The regulator asked applicants "to play their part" by ensuring that applications are clear and comprehensive and show compliance with building regulations.

"Applications which lack the required detailed information or fail to demonstrate clear compliance will be rejected," said BSR.



Construction's ageing workforce: where are the next generation?

Attracting much-needed workers with the skills of the future will require construction improving its image and making itself more appealing to young talent, writes **Pablo Cristi Worm**



Over the past couple of months, the new Labour government has set out its policy agenda and its ambitions for major new programmes, from housebuilding and planning reforms to energy generation and transmission. One important question is where our sector will find the resources to deliver these goals. As of Q4 2023, the number of construction workers reached 2.08 million, falling below the pandemic trough.

Two elements of the persistent construction capacity crunch are the historically high levels of contractors' insolvencies, which stood at 1,154 companies in Q4 2023, and the severe shortage of skilled workers, with vacancies 38.5% above pre-pandemic levels.

To achieve the nation's ambitions for growth, policymakers and industry leaders need to address these issues. In particular, they must figure out how to attract new and different skills to the sector.

There are many risks from a lack of capacity: the dwindling pool of construction companies, coupled with a shrinking workforce, leads to less competitive pricing strategies on the one hand and to higher wages on the other. In turn, this exacerbates tender price inflation and the costs of major programmes.

Sector age profile

The industry's ageing workforce has long been a concern. A substantial portion of experienced workers are nearing retirement, and the number of young people entering the sector is declining,

leading to a potential loss of invaluable expertise.

This was historically mitigated by a high level of migrant labour. Yet the UK's departure from the EU after the 2016 Brexit referendum has resulted in a sharp reduction in skilled workers from the continent. Between Q4 2019 and Q4 2023, the industry lost around 14% of its UK-born workforce. In addition, three-quarters of EU construction workers lost due to post-Brexit restrictions were aged between 25 and 39.

According to a future of work survey by international law firm Osborne Clarke, only 15% of workers in the built environment sector intend to continue working in some form after retirement, compared to a 27% cross-industry average.

However, the changing nature of the skills we need in the industry is now just as important, if not more. Solving these issues will require us to improve the perception of construction and make it a more attractive career path for a diverse range of talented entrants of all ages.

Cutting-edge construction

Part of the problem is the mismatch between the skills taught in educational institutions and the practical demands of the construction industry. Plus, the economic turbulence of the past years has only made it more difficult for firms themselves to invest in people. This is particularly true when it comes to the increasing digital demands of construction.

Percentage of UK construction workers who intend to work beyond retirement (Source: Osborne Clarke)

15

With the creation of the new Skills England body and reforms to the apprenticeship levy coming forward, there's an opportunity to attract a new generation of talent

Neglecting to familiarise students with the latest technologies not only means they're less prepared for the working world, but it also fails to show them the truly modern, digital face of construction, which may help to widen the appeal of careers in the sector.

Targeted training programmes and apprenticeships, as well as upskilling existing teams, will be crucial to bridge this gap, guarantee a qualified workforce and show the breadth and appeal of skilled roles across the industry.

Now is the moment to act. Construction is experiencing a period of economic growth, with forecasts predicting modest but steady improvement, and areas including housebuilding, data centres, life sciences and energy likely to be boosted by new government commitments.

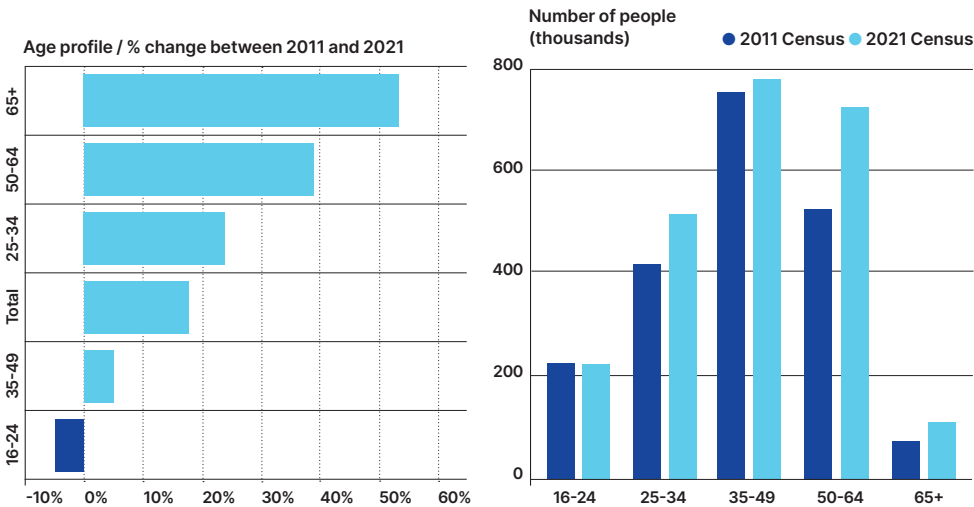
According to the Construction Industry Training Board, the industry will require an additional 251,500 workers to meet expected work demand by 2028. With the creation of the new Skills England body and reforms to the apprenticeship levy coming forward, there's an opportunity to attract a new generation of talent.

The industry must transform its image – showing its dynamism and its range of digital, technical and environmental aspects. This will help to show that construction offers rewarding and fulfilling career paths in a range of areas and disciplines and will attract the new talent and creative minds that we'll need to thrive and deliver growth.

Pablo Cristi Worm is an associate economist at Turner & Townsend.

Construction is ageing

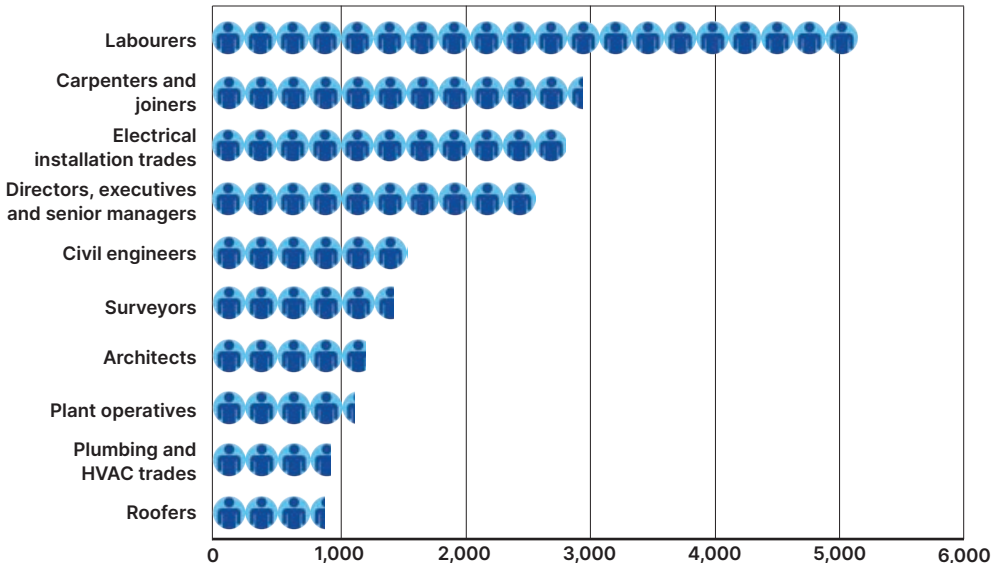
Percentage change in age profiles (left) and number of construction workers across different age groups (right) across England according to the last two censuses.



SOURCE: OFFICE FOR NATIONAL STATISTICS

Top 10 roles needed in the built environment

Annual recruitment requirement needed to meet construction's expected work demand between 2024 and 2028





Adam Sanford FCIOB
Southern Construction
Framework

How two-stage procurement helps with build quality

With quality and building safety top of the industry agenda, **Adam Sanford FCIOB** explains the benefits of collaborative procurement models



use of poorer quality materials, risking both quality and safety.

To achieve true collaboration between public and private sector bodies, and ensure building safety and quality, client organisations must forge deeper relationships via a two-stage procurement model. This opens lines of communication and, due to the prequalification stage, reduces the impact of 'competitive tension' on specification and materials decisions, and encourages better understanding of the commercial realities of delivering major projects.

Quality outcomes

Two-stage open book gives the opportunity to tap directly into the supply chain when making early-stage choices in construction methodology and materials, identifying and mitigating risks in both the design and the cost plan, at a much earlier stage.

This approach can avoid costly reworks later in the process. Not only scope reduction and substitution for poorer quality materials, but amendments to planning consents and utilities alterations.

Projects can all too often get stuck in a 'doom loop' of reworks and cost inflation, which can lead teams to make cuts to scope to make it to site. The safety implications of rushed value engineering are well known. But, behind every failed construction is a design team that was confident in its choices at the time.

In two-stage procurement, during the preconstruction phase all areas of risk are pointed out to you, which allows you to decide the best way forward to ensure quality. It means you don't suddenly decide later to have cheaper cladding material just because it fits into your budget.

Morgan Sindall showcase

The University of Hertfordshire's Spectra building, recently completed, showcases the importance of clients and contractors collaborating via a two-stage open book process.

Emma Curtis, the area director at Morgan Sindall who oversaw the project, says: "The biggest benefit of two-stage procurement during this project was that it allowed us to bring in our supply chain early. This enabled us to take the time to source materials that had the appropriate fire rating certification.

"It also meant that we could spend time liaising with our fire consultant and the building control officer to make sure that they were comfortable with the designs and the materials that we were putting forward."

With buildings being long-term assets and net zero targets currently at the forefront of clients' minds, it has never been more important to understand a building's operational use from the outset. ●

Adam Sanford FCIOB is operations lead at Southern Construction Framework.



With the Building Safety Act placing greater responsibilities upon designers to ensure building works comply with regulations, it has never been more important to get the budget right from the outset. A single-stage procurement model with fixed outcomes alongside squeezed budgets puts the original design intent at risk and can force

▲ Morgan Sindall's Spectra project for the University of Hertfordshire showcased the two-stage open book process



Caroline Gumble
CIOB

Construction deaths are again on the rise: where are we failing?

Disturbing construction fatalities figures show that the industry needs to do more to improve health and safety, writes **Caroline Gumble**



In the last few weeks, the Health and Safety Executive (HSE) has published data on the number of workplace fatalities for 2023/24. There is simply no way to greet the statistics positively, as they show an increase from the 2022/23 figures for the construction industry which, in turn, showed an increase on the same figures for 2021/22.

You may have seen the *CM* news story on this, in which it was reported that 51 people died at work in the construction industry, across England, Scotland and Wales.

When hearing of the figures for 2022/23, I said that the number of construction fatalities was distressing. I also noted that the reality behind the figures is that

It is disturbing to be confronted with the realisation that things are getting worse. It is also powerful motivation to ensure we don't become complacent about prioritising safety



those people never made it home from work – there are loved ones and families out there still living with the consequences and pain of these losses.

It is disturbing to be confronted with the realisation that things are getting worse. It is also powerful motivation to ensure we don't become complacent about

▲ CIOB will continue to place health and safety at the top of its agenda, as the institute's corporate plan demonstrates

prioritising safety on every single project and every single site.

As a sector, we have put work in over the years to improve worker safety and wellbeing – but these latest figures clearly tell us that there is more to do.

So what else do we need to do? What's missing or not working? What action is required?

The chair of our Health and Safety Advisory Panel, David Bucksley, has recently written about the same subject, offering some suggestions to improve things.

An important point he made was that at company level, the challenge to maintain the right culture is critical. Are all the basics in place to focus on managing out risks at the earliest opportunity? Do you have the right processes in place to manage staff turnover and a loss of organisational knowledge? Is there an environment in which people can speak up to point out what's not working or request things that are needed in addition to existing measures?

Although there are challenges that can be met by company leaders, we do all have a part to play.

CIOB will continue to do what we can by keeping this subject high on the industry's agenda, as we have committed to in our corporate plan, and by supporting our global community of members through the sharing of best practice and industry innovations. ●

Caroline Gumble is CEO of CIOB.

Feedback

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



Let's make construction welcoming to young professionals

CIOB's CEO, Caroline Gumble, shared her thoughts on how construction can make itself more inclusive, after attending a CPD event on misconceptions of the skills gap.

Ashley Campbell

I'm pleased this issue has been highlighted, as I'm one of those individuals struggling to enter the industry. I'm about to start my final year in construction management at university and I'm feeling slightly down because I could not get a placement.

I'm a student CIOB member, a student APM member and I attend networking events and engage in CPDs. I am currently working on site as a groundworker while looking for any opportunities to begin my career. The difficulties I've encountered when trying to enter the industry have even motivated me to consider starting a career as an entrepreneur property developer.

The effects of not getting into the industry's professional environments have led me to a form of mental isolation as I cannot talk with my team on site about how AI can speed tendering processes, for example. Most of them don't understand the topic or are plainly not interested.

It would be good if companies used level 4 students in construction management as labour on site, level 5 students as trainee site managers and graduates as junior construction managers.

Maybe this could be done in conjunction with universities to help students get employment during the term breaks and gain experience at different levels.



WREKIN PRODUCTS

▲ One of the blue gully grates that Barratt and Wrekin installed as part of 'The Sea Starts Here' campaign

women from staying and joining the industry. Companies should have equality at the heart of their company strategy, but sadly this is not the case in many instances.



Barratt launches ocean protection campaign with blue gully grates

Alan Vowler FCI0B

I think this is a tremendous initiative, as people put all sorts of substances down storm drains that they do not wish to place in their foul sewers. I will forward details of this to our new MP who, as part of their election manifesto, indicated cleaning up waterways.

From a health and safety perspective, site signage and health and safety documents are all in English, so site management is left to its own discretion on how to go forward.

In the past, I managed a site for a tier 1 contractor where 70% of the workers on site were from Eastern Europe. I insisted that at least one of every five operatives was bilingual. I requested their assistance with interpretation and produced signs that everyone would understand.

Darren Allport via CIOB People Having worked in the Middle and Far East for many years, I have been on the language minority side of this issue. Many workers spoke their own language and Arabic, neither of which I spoke. It is not difficult to create posters with the help of multilingual workers – keeping them mainly pictorial is a good starting point.



Building a sustainable future for women in construction

Seddon's owner and director Nicola Hodkinson suggested how the industry can support recruitment and retention of women.

Joanne Harris

I have worked in the industry for 30 years and, as a female professional, it has been difficult, with numerous barriers put in place – not only limiting promotion but also a comparable wage and equal working conditions. These are the main factors which discourage



Companies should have equality at the heart of their company strategy, but sadly this is not the case in many instances

Joanne Harris



How communication barriers can have 'devastating safety consequences'

Dr Morwenna Fellows explained how her PhD research has uncovered the health and safety challenges that arise on site when there is no shared first language.

Anthony Carroll MCI0B

via CIOB People

I applaud Dr Fellows on her subject matter and research. Most site managers have tried unsuccessfully over the past two decades to raise awareness of this.

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

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Building by the beach

Shoreline is a one-of-a-kind development that hopes to attract new homeowners to the seaside town of Folkestone. Contractor and CIOB member company Jenner is so committed it even put some serious skin in the game. By **Kristina Smith**

▼ The cladding design changed post Grenfell from insulated render to glazed brick





There is a lot riding on the success of Folkestone's newest residential development: the legacy of one of the town's most successful sons, the future shape of the community – and profit for the contractor, Jenner, which has agreed to take a proportion of the profits from the scheme as part payment for its work.

Shoreline is a sparkling wave of a building, rising up from Folkestone's pebbly beach with show homes to die for – and prices to match. Everything about this building screams 'bespoke', from the balconies fitted to its undulating form to its made-to-measure windowsills

to its curved marine-grade steel masonry supports that hold its glittering brick facade in place.

"All construction projects have something different," says Jenner project manager Chris Page. "This one has an awful lot of things different."

Jenner's profit share agreement is one of them. Under the design and build cost plus contract, its costs and overheads – somewhat reduced – are covered by client Folkestone Harbour & Seafront Development Company, and profit will come from a 25% share in the profits from the sale of the 84 homes in the development.

The decision came, says Jenner managing director Martin Sandall,

Shoreline

- Client: Folkestone Harbour & Seafront Development Company
- Value: £51m
- Contractor: Jenner
- Architect: Acme
- Structural and MEP Engineer: Buro Happold
- Civil Engineering: Buro Happold/Pell Frischmann
- QS: Betteridge & Milsom
- Planning consultant: Savills
- Landscape architect: Spacehub
- Interior designer: 8 Holland Street
- Building inspector: MLM
- Project manager: Spider Project Management
- Programme: January 2020 – January 2024

Subcontractors

- Piling: Van Elle
- RC frame: O'Halloran & O'Brien
- Balconies: Blue Chyp
- Precast fins: FP McCann
- Brickwork: GMA
- Scaffolding: All Access
- Roofing: Ridgwell Roofing

As the piling got further down into the strata, the pebbles got bigger and bigger until we were hitting pebbles the size of a double-decker bus

Martin Sandall, Jenner



after a frank conversation between himself and Roger De Haan, heir to the Saga fortune – which was made in Folkestone – and the mastermind behind this building and the regeneration of the town.

"Roger was worried that under a design-and-build project, the contractor could use it as an opportunity to change and dilute the design," says Sandall. "This way, we would benefit through getting a percentage of sales and through reputation, since the quality would be so high. And Roger would have a product he could change without the penalties of a traditional building contract. That's really important when you are delivering something as extraordinary as this."

Folkestone's transformation

Shoreline could be seen as a metaphor for the transformation of Folkestone, which 75-year-old De Haan has been working on for over two decades. For some of the town's residents, it's an unwelcome white elephant; for others, a promising sign of new things to come.

If all goes to plan, it will be the first in a series of residential buildings on the beach, running west from Folkestone's Harbour Arm to Shoreline, which sits opposite the Leas Lift, a Grade II*-listed water lift.

It was Jenner's performance on one of De Haan's earlier projects, the construction of F51, a multi-storey indoor skate park, that



◀ The 200-plus continuous flight auger (CFA) piles are around 30m deep

2 million bricks were laid, among them 28 specials

2m



◀ A drone shot shows the site's proximity to the sea

up with glazed brick – which has added complexities.”

The laying of the glazed bricks, which came from Spanish supplier La Paloma Cerámicas, could be considered a work of art in itself. There are nearly 1 million bricks in this building, which all came with a glazed rebate – a solution derived after several mock-up panels – so that brickwork contractor GMA could split each brick into two to create the undulating curves of the building. So, 2 million bricks were laid, among them 28 specials.

On the beach side of the building, bricks protrude from the face, casting shadows at certain times of day. “We had to work out things like how far the bricks protruded so that they would not gather dust or form ledges for birds to perch on,” says Thornby.

The combination of fire safety requirements and the need to protect the building from the salty marine environment raised some specification challenges for Jenner. Things on the facade, such as lights and vents, that would normally be plastic, had to be metal – but some of those products didn’t even exist at that time, says Thornby.

And every piece of metal in the cavity had to be marine grade stainless steel. “Everything is built not to rust – that was something Roger had absolute anxiety about,” says Sandall. “A huge amount of money went into specifying things that will protect the integrity of the building going forward.” ►

formed the relationship between Sandall and de Haan.

“We had to prove ourselves on quality, price and delivery on such a challenging building,” says Sandall. “It was traditionally tendered and, with the wrong contractor or a more aggressive client, it could easily have been the sort of contract that ended in dispute.”

Architect Acme is responsible for Shoreline’s stunning design. Asked to create an “attraction in its own right”, according to Acme director James Denner, the architect looked to Folkestone’s existing Regency architecture to the West End of the town in creating its form.

The building accommodates 60 apartments including four penthouses in east and west towers,

20 five-storey houses which run in a crescent between the two towers, and two duplexes. Every property has outside space, with a mix of balconies, private and communal roof gardens and roof terraces.

The concept design saw the building’s snaking form clad in a glittering insulated render, containing crushed glass aggregate. However, post-Grenfell updates to building regulations necessitated some changes.

“When the warranty company came in, it wanted a residual drained cavity so that the rainwater could run down it if water penetrated the outer skin,” explains Jenner’s technical manager Ben Thornby. “The insulation product was no longer fire rated, so we ended



Everything is built not to rust – that was something Roger had absolute anxiety about
Martin Sandall, Jenner



Covid hits start

Jenner started on site in January 2020 and immediately faced the challenges of changing Covid lockdown constraints and issues with piling. The 200-plus continuous flight auger (CFA) piles are around 30m deep and were hitting obstructions before they reached the rock. "As we got further down into the strata, the pebbles got bigger and bigger until we were hitting pebbles the size of a double-decker bus," says Sandall.

In solving this problem, Covid restrictions actually helped. Contractor Van Elle was able to source a huge rotary rig, which would not normally have been available, to cut through the ragstone rock boulders.

An ingenious solution, devised by Van Elle and the engineer, saw a steel casing inserted as the drill bit advanced, to stop the ground from falling in. The steel casing was then filled with shingle from the beach and the CFA rig used to extract the shingle and supply the concrete as the casing was withdrawn.

As the piling reached completion, O'Halloran & O'Brien came onto site to construct the groundworks and reinforced concrete frame over the next 12 to 18 months. Balcony supports, with thermal breaks, had to be cast into the frame – and with the varying radii of the building's curves, the size and shape of the balconies varied too.

◀ O'Halloran & O'Brien constructed the reinforced concrete frame according to the varying sizes and shapes of the building's curves

"It was really quite complicated," says Thorn, pointing up to one elevation. "There are three different balcony types just on that end."

Page singles out the work of Leviat, which designed and supplied the bespoke brackets for the balconies and the masonry support for the brickwork – all in marine-grade stainless steel – which had to be specially bent to curve around the many radii.

The original plan had been to cast the balconies off site in white concrete, but with the heaviest weighing in at 9 tonnes, Jenner and Acme moved to a steel chassis with lightweight anodised or powder-coated aluminium components. The parts for the balconies, which had to be created in multiple locations around the UK, were assembled on a specially designed rig on site before being lifted into place.

The construction of the town houses, with split mezzanine floors arranged around precast staircases to back to give sea views from all rooms, caused some headaches too. "Everyone underestimated how complex the detail was," says Sandall.



We had to work out how far the bricks protruded so that they would not gather dust or form ledges for birds to perch on

Ben Thornby, Jenner

Changes mid build

The first of the two significant changes introduced during the build came when De Haan decided that the two rear penthouse apartments at the top of each block were not up to scratch.

"He thought the ones at the back were a poor relation to the others, so we added an extra floor on the east and west wings, which we call the skyrooms," says Sandall.

A later, and more disruptive, change was the addition of air conditioning.

"That came a little late in the day," says Page. As a result, construction of the penthouses was put on

9 The original plan had been to cast the balconies off site in white concrete, but the heaviest weighed in at 9 tonnes

hold for six months. Now, all the penthouses have air conditioning and the town houses have the ability for the MVHR (mechanical ventilation with heat recovery) systems to have cooling fitted.

The balconies, though beautiful, caused another unexpected headache for Jenner. Occasionally, when there are high winds travelling in a certain direction, three or four balconies on the west end of the building emit a high-pitched whistling noise. Though this can't be heard inside the apartments, as long as the triple-glazed windows are closed, it can be heard by local residents who have christened the building 'Tinnitus Towers'.

"We have had extensive sound testing and invested in an acoustic camera which can identify hotspots, but the background noise was very high," says Thornby. "Now we have employed an acoustic consultant to analyse the turbulence. The challenge is that we can only test it when the exact conditions occur again. Even with wind tunnels we cannot test it."

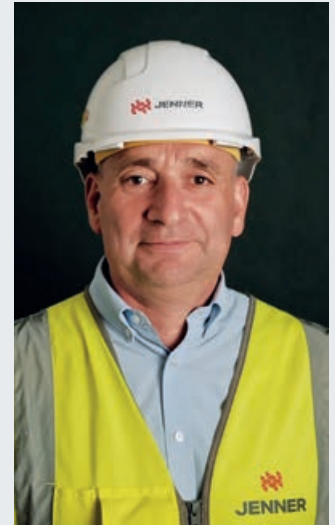
Creating a legacy

With prices ranging from around £400,000 to £2m, Shoreline is a hard sell for Folkestone in many ways. But the properties are selling. As of early June, 10 homes of various sizes had been sold, according to Doug Acton, Folkestone Harbour & Seafrost Development Company's sales director.

Although some of Folkestone's residents see Shoreline, and other planned developments, as money-making ventures, anyone who had heard De Haan speak about his dreams for the town would understand that his goals are not financial. He has worked tirelessly for decades to regenerate the town he loves, when he could have very comfortably retired.

The design of Shoreline, the quality of the build and the meticulous attention to detail, are all about leaving a legacy for generations to come. By agreeing to put some skin in the game, Jenner is committed to that legacy too. ●

▼ Shoreline sits opposite the Leas Lift, a Grade II*-listed water lift



CV: Chris Page, project manager, Jenner

Chris Page started his career in construction aged 16, working as an apprentice carpenter and joiner for Canterbury firm Denne Construction – later bought by Leadbitter, which was then bought by Bouygues.

After 24 years with the firm, rising to the position of contracts manager, Page moved to Chartway as construction director and then to Oakdene as a project and contracts manager.

Jenner recruited him to manage the Shoreline project, which he describes as the most complicated project of his career.

"What I enjoy about my job is that you are producing something," he says. "When you organise a project, it goes well and then you see the results, that gives you a huge amount of job satisfaction."

That's a message Page works hard to communicate to the next generation. In 2022, his commitment to working with local schools, colleges and community groups was recognised when he was awarded 'Community Champion' at the Considerate Constructors Scheme's Leading Lights Awards.



Top marks for Tilbury Douglas on Passivhaus school

A Passivhaus school in the Black Country has required a whole new level of rigour from Tilbury Douglas. **Kristina Smith** visited the project ahead of its handover for the new autumn term

▼ The cladding design allowed post Grenfell fire insurance tender to proceed quickly





Passivhaus is not just about applying sustainable design to save the planet, it's about saving money for the schools too

**Matt Lakin,
Tilbury Douglas**

◀ The new school replaces Edward the Elder School, which was demolished and the waste used to level up the site

There's one word that keeps coming up on a tour of Tilbury Douglas' Wednesfield Technology Primary School project: meticulous.

Built for the Shireland Collegiate Multi Academy Trust (SCMAT), on behalf of the Department for Education (DfE), this is a Passivhaus-standard school project. There's no room for 'good enough' on this project; to get accreditation from the Passivhaus Institute, everything must be bang on.

"This is one of the most challenging projects I have had," says Tilbury Douglas project manager Kevin Miners. "It's certainly the most meticulous I've ever been on."

From the design and execution of joints and other details to the materials used to the collation of information for every piece of kit, the Passivhaus standard requires all the 't's to be crossed and the 'i's to be dotted. For Tilbury Douglas and its supply chain, that has meant extra attention to detail – and extra time taken – particularly on the floor slab and the joints for the timber-framed system.

DfE framework

The school was tendered under the DfE's 2017 construction framework back in 2020.

"This is a flagship project for the client," says Matt Lakin, contracts manager for Tilbury Douglas. "Passivhaus is not just about applying sustainable design to save the planet, it's about saving money for the schools too."

Wednesfield Technology Primary School is a two-form entry school which will eventually take 446 pupils. The main part of the building is a rectangular block with classrooms located over two storeys: nursery

and younger children on the ground floor and older children upstairs, together with a small library and a SEND (special educational needs and disabilities) room. A smaller, one-storey wing joins the main one at right angles, housing a multi-purpose hall and kitchen.

This will be the fifth school that Tilbury Douglas has built for this trust. That gave the contractor and its designers an advantage when tendering, says James Edwards, associate architect at Corstorphine and Wright (C&W) Architects, which leads the design team.

When bidding through the framework, contractors are given a control design which has been produced by the DfE's architects, in consultation with the school involved. Bidders then have a short time – around four weeks – to price it and propose any changes.

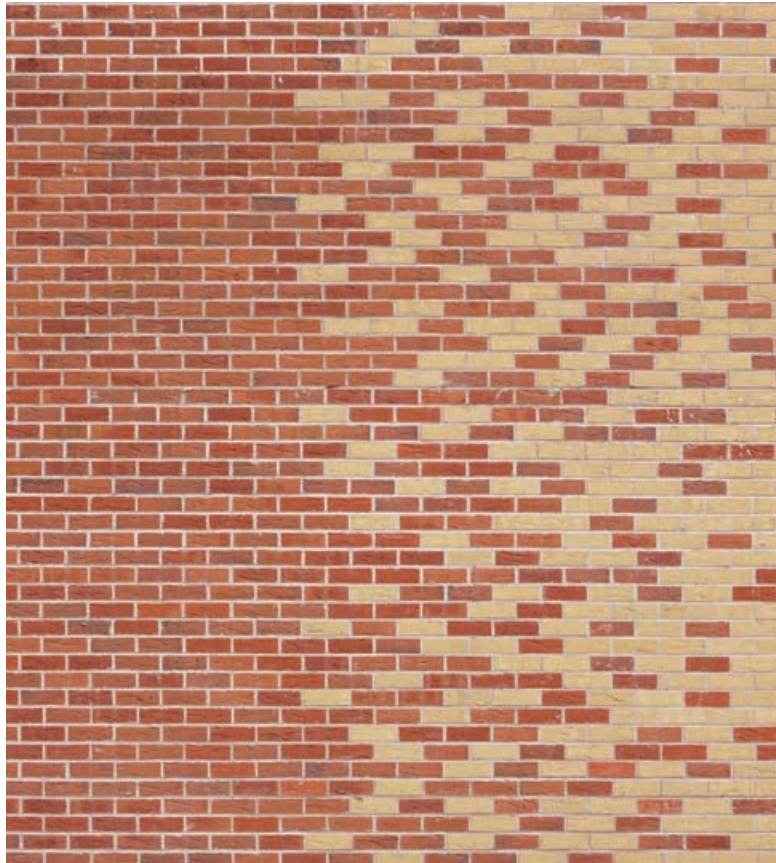
The trick is to deliver both the generic requirements for DfE and the specific requirements of the trust or school, explains Lakin. Bids are then assessed on cost, quality and programme.

Tilbury Douglas had delivered other technology schools for the trust. The idea of these schools is that the children work with digital equipment and tools from the earliest stages so that they are equipped to work in a technology-driven world.

Start on site

Tilbury Douglas started on site in February 2023, demolishing the one-storey Edward the Elder School building, which had been vacant since 2007. Most of the demolition waste has been used to level up the site – which required up to 2.5m of fill in places – and some of the bricks were retained. ▶

▼ Brick cladding was a requirement from the planners, echoing the brick of the school that had stood on the site



Once planning permission was granted, Tilbury Douglas faced its first Passivhaus hurdle. The building sits on a raft foundation, with a double layer of insulation under the slab. The joints of the insulation are staggered, to prevent heat loss, and the insulation extends all the way under the upstand and around the edge of the slab.

"All the pieces of insulation were hot wire cut so that they were dimensioned exactly to the millimetre," says Lakin.

Like every detail on this school, it had to be modelled, explains Edwards. "We had a Passivhaus designer who modelled every detail in 3D," he says.

Each joint has to be individually assessed on site, with evidence – including photos – supplied to the Passivhaus designer and then on to the Passivhaus institute. Tilbury Douglas' Passivhaus champion on this project was site manager Ben Howman, whose job it was to scrutinise every element of the build.

The need to prevent cold bridging and achieve airtightness at junctions caused a few extra issues when it came to assembling the timber frame, a system called Larsen Truss which was supplied by Timber Innovations, a company located just 25 miles from the site. The system consists of twin walls of timber frames braced together, boarded

Wednesfield Technology Primary School

- Cost: £11m
- Client: Department for Education/ Shireland Collegiate Multi Academy Trust
- Programme (including demolition): February 2023 to June 2024
- Form of contract: Design-build, DfE construction framework
- Contractor: Tilbury Douglas
- Designer: Corstorphine & Wright (C&W)
- Timber frame: Timber Innovations
- MEP: Dodd Group

It took us until January to get the building watertight because it took us a lot longer to do the structure than we had expected. But taking that extra time paid off in the end when we had such good airtightness results

Kevin Miners, Tilbury Douglas

with OSB internally, cement board externally, then infilled with 380mm of mineral insulation – some in the factory and some on site.

The panels are more usually used for housing projects and the way that adjacent panels are normally joined to each other was not good enough for the school Passivhaus requirements. To overcome this challenge, Timber Innovations delivered panels that had short, unfinished sections at either end, so that the insulation and boards could be installed on site, ensuring there was no cold bridging.

"It took us until January to get the building watertight because it took us a lot longer to do the structure than we had expected," says Miners. "But taking that extra time to make sure paid off in the end when we had such good airtightness results."

For Passivhaus accreditation, two airtightness tests must be undertaken, the first when the structure is complete but before fit out. The first one delivered outstanding results, far surpassing the minimum requirement: air changes per hour were 0.225 air changes per hour (ACH) at 50 pascals, well below the required 0.6 ACH. The second airtightness test, carried out when the building was nearing completion, also came in well under the requirement at 0.48 ACH.



Meticulous timing

The building is brick clad – for its entire height on the wall facing the road, with render on the upper parts of the other walls. The brick was a requirement from the planners, explains Edwards, echoing the brick of the school that had stood on the site and of the Vine Inn,

▲ The second airtightness test, taken when the school was nearing completion, was well below the Passivhaus requirement

We had a Passivhaus designer who modelled every detail in 3D
James Edwards,
Corstorphine & Wright Architects

a Grade II-listed pub which sits directly opposite, on the other side of the main road.

The brick lodge building for the original school also remains on site. Tilbury Douglas has repointed it, replaced damaged roof tiles and given it new fascias, guttering and drainpipes. The school will refurbish it internally, with plans to make it into a community space.

To the back of the school site, which runs along the Wyrley & Essington Canal, there will be a huge outdoor space, enhanced by existing woodlands – whose preservation was a strict part of the brief. The wet weather this year means that Miners is not as advanced with the outdoor elements as he would like, but they are shaping up now.

Tilbury Douglas handed over the new school during the school summer holidays, in time for the autumn term. It appears that the meticulous Passivhaus approach has paid off. ●



CVs: Matt Lakin and Kevin Miners

Matt Lakin (above right) began his career in civil engineering. After time spent working on infrastructure jobs including the West Coast Main Line and M6 toll motorway, he moved to the Queen Elizabeth II hospital in Birmingham, working for Balfour Beatty.

He decided to switch from civils to building so that he could be based at home, rather than travelling from job to job: "I wanted to have a life, as well as work," he says. "And a complex building project like a hospital can be just as challenging as an infrastructure project."

Lakin has worked for Tilbury Douglas for 10 years, starting as a project manager and moving up to contracts manager four years ago, covering the East and West Midlands in projects from £5m to £30m.

Kevin Miners (pictured above left) has also been with Tilbury Douglas for 10 years, having been with Costain for eight years and Skanska (Trafalgar House) prior to that for 15 years.

Miners was inspired by his father to join the construction industry: "My father was a bricklayer who passed away when I was young and I liked helping him build things," he says. "I also liked technical drawing and ended up doing a building OND and it developed from there."

It's a career that is always gratifying, he says: "You have the satisfaction of completing a project that will be there to be used for many years to come."



Taking the mica: Ireland's concrete block nightmare

With echoes of Britain's RAAC crisis, Ireland has its own crumbly concrete problem.

Rod Sweet looks at a problem now affecting thousands of homes



Thousands of homes in Ireland are crumbling. An estimated 7,500 homes, concentrated in but not restricted to the north-western county of Donegal, have been affected by the so-called 'mica crisis', in which homes built largely from the late 1990s and into the 2000s have too much of the mineral muscovite mica present in the aggregate of their concrete blocks, according to one theory.

Mica absorbs and stores water, which expands when it freezes, thus undermining the cohesion of the cement and weakening the block.

▲ Houses in Donegal, Ireland, are crumbling due to pyrite or mica in the concrete blocks

Deterioration is progressive because each freeze-thaw cycle opens the block to more water ingress. Cracks appear in walls, deepen and spread as the blocks give way, allowing more water ingress.

Another impurity in concrete blocks, pyrite, is causing similar problems in western counties like Mayo, Galway and Clare.

A third impurity – pyrrhotite, an iron sulfide that oxidises on contact with water and oxygen, creating new compounds that expand – was put forward by researchers from Ulster University last year as an overlooked, contributing factor in the mica crisis.

Demolition and rebuild

There's no easy fix. Each affected wall must be replaced. In some cases, the whole house must be demolished and rebuilt.

The problem became apparent in 2013, but it wasn't until June 2020 that the Irish government introduced an assistance scheme, offering 90% compensation, with grants of €49,500 (£42,425) for external wall replacement, rising to an upper limit of €247,500 (£212,150) for complete demolition and rebuild. It was widely denounced as inadequate, since homeowners had to pay €5,000 (£4,285) for a mica test and, in

An estimated 7,500 Irish homes have been affected by the 'mica crisis', mainly in the north-western county of Donegal

7,500



◀ This affected house in Letterkenny, Donegal, needed only its outer block wall replaced. Remediation specialist Anamore used the project to help people understand the remediation process

many cases, the cost of demolition and rebuilding would far exceed €247,500 (£212,150).

In November 2021, the government upgraded its Defective Concrete Blocks Grant Scheme, offering 100% compensation for mica and pyrite problems, with the upper limit for full demolition and rebuild increased to €420,000 (£360,000). Many are still not happy since, in some cases, the full cost of demolishing and rebuilding is greater than €420,000.

The enhanced grant scheme was originally costed at €2.2bn (£1.9bn) but in 2022 cabinet ministers were warned that the cost of the scheme could surpass €3.6bn (£3bn).

Last year, affected homeowners formed the 100% Redress party, calling for, among other things, no cap on the grant, a public inquiry into how regulations failed to stop the sale of defective blocks and the prosecution of those responsible. In June this year, the party won four seats on Donegal County Council.

The pyrrhotite hypothesis could complicate things further. Researchers argued that remediated houses will just keep crumbling if blocks containing pyrrhotite are left in place, and that the government's remediation grant scheme will fail if pyrrhotite is not taken into account.

Chartered engineer Aidan O'Connell is an expert contributor to the National Standards Authority



PHOTOGRAPHY: ANAMORE

of Ireland (NSAI) and a veteran of countless pyrite remediations.

"It has not really been finalised, and the NSAI committee that I'm a member of are meeting still at the moment [to review] all of the most recent analytical data and test data that we have in relation to the chemical analysis of the samples that are coming in," he tells CM.

How could this happen? It's not entirely clear yet. In 2017, a government-convened expert panel published a report referring to "vulnerabilities in the building control system" exposed by the 2008 economic crash.

▲ Remediation complete in Letterkenny. Anamore insists on two scratch coats, and strongly recommends a wet pebble dash as the finish because it's more impermeable

O'Connell puts it more strongly: "They were relying on the building industry as a whole to self-certify and to manage the process (according to) the guidelines."

O'Connell, who knows many block manufacturers, ventures that they were not "aware of how big a problem was going to happen down the road".

"I really genuinely don't believe that any supplier would have readily sold a product with full knowledge that this was what was going to happen," he says. "No one is that stupid."

In November 2022, *The Irish Examiner* reported that 1,100 legal cases had been launched, with more expected. On 25 July this year, the European Commission launched an infringement procedure against Ireland for "not carrying out market surveillance as required" by the Construction Products Regulation 305/2011, which requires authorities to monitor the manufacturing and sale of construction products before they are used.

Noting the "very serious damage" to thousands of properties, the commission said the Irish authorities "limited their monitoring activities to finished buildings or finalised civil engineering projects. The limitation of market surveillance activities to onsite measures endangers the free circulation of safe construction products in the union." ►

230 Only around 230 remediations in the affected counties have been done so far



The commission gave Ireland two months to “respond and address the shortcomings raised”.

Why did it happen when it did?

O’Connell believes the pyrite and mica crises revealed themselves when they did because of geography and weather. The affected counties are on the west coast, where buildings are battered by rain driven by strong westerly and southwesterly winds off the Atlantic.

Then came the ‘big freeze’ of 2010, when temperatures plummeted over November and December, reaching as low as -17.5 deg C in County Mayo on Christmas Day. That freeze, says O’Connell, probably got the ball rolling, with bigger cracks opening up and starting the process of progressive deterioration.

One firm squaring up to the crisis is Anamore, a building remediation specialist based in Omagh, County Tyrone, in Northern Ireland. Co-founder and director James McCallan says only around 230 remediations in the affected

counties have been done so far, but that applications for grant funding have picked up “massively” in the last seven months.

Not all affected properties need complete demolition, and many remediations can be done within the €420,000 limit. McCallan said none of Anamore’s mica remediations so far have exceeded that limit.

He believes education and outreach are needed, which is why he gave tours at a successful project in Letterkenny, Donegal, and publicised it in local media.

There, the end-of-terrace house needed only its outer block wall replacing in a five-month project.

In standard construction, walls consist of a 100mm-wide outer block-layer, a 100mm to 150mm-wide cavity and a 100mm-wide internal block-layer. After long exposure to high winds and driving rain, water can seep into a wall’s outer and inner layers, but that wasn’t the case in Letterkenny, where only the outer wall was seriously affected.

Cracks in the inner wall were carefully repaired. The new outer wall

▲ Over the five-month Letterkenny project, the new outer wall was built using 13N concrete blocks, tested for pyrite and mica

We need to let people see what needs to be done and what can be done, and to help people understand that there is a support network out there

James McCallan, Anamore



was constructed using 13N concrete blocks, tested for pyrite and mica, above damp proof course level.

In most cases builders apply one scratch coat, followed by the finish coat. In Letterkenny, the house was built with a smooth render finish, but Anamore insists on two scratch coats. It further strongly recommends a wet pebble dash as the finish because it’s more impermeable. Then the rebuilt walls must be left to cure for at least two months before painting.

“If you’re going to do something, do it once and do it right,” McCallan says. “It’s our job, our duty, to leave something better than how we found it.” This kind of remediation requires specialist knowledge and experience that most general building contractors may not have, he adds.

“We need to show it and let people see what needs to be done and what can be done,” he says, “and to help people understand that there is a support network out there.”

McCallan says he expects mica remediation work to increase from about 5% of Anamore’s business now to 30% in the coming years.

The company has set up the Anamore Academy to give college students hands-on experience in “all things building remediation”, from replacement of unsafe cladding, balcony remediation and internal fire compliance to pyrite and mica. ●



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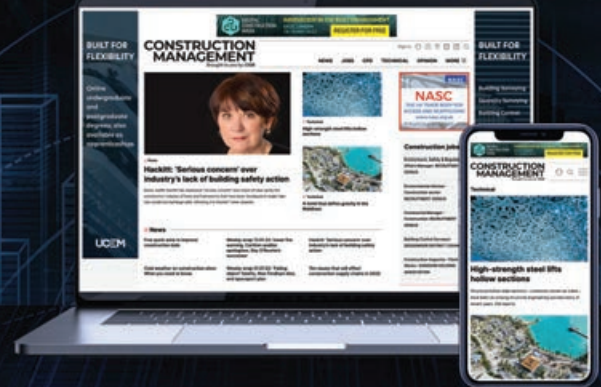
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DIGITAL CONSTRUCTION AWARDS

The built environment industry's most innovative companies, projects and people took centre stage at the 2024 Digital Construction Awards, organised by CIOB, DCW, CM and BIMplus, and hosted by actor and comedian Tom Allen at The Brewery in London. Read on to find out who the winners were – and why they won

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Balfour Beatty wins Digital Construction Project of the Year

Balfour Beatty's Midland Metropolitan University Hospital secured the prestigious Digital Construction Project of the Year trophy, sponsored by Revizto



▲ The Balfour Beatty team collect their trophy from Ollie Hughes of Digital Construction Week (left), Rhys Lewis of Revizto (second right) and Tom Allen (right)

A great example of a project where the right digital tools and platforms have been used to solve complex issues – the main one being the sheer scale of the project. Sensible digital solutions, very well and thoroughly implemented with good training and adoption throughout the team
What the judges said

Balfour Beatty took over the delivery of the Midland Metropolitan University Hospital in December 2019, following Carillion's collapse.

When operational, the hospital will offer maternity, children's and inpatient adult services to half a million people. It measures 85,924 sq m across 10 storeys with 675 beds and 13 theatres.

Balfour implemented a digital strategy to support the project completion, commissioning and handover stages. Commissioning activities amounted to around 52,000.

The contractor used a common data environment (CDE) from Viewpoint For Projects to store and track commissioning notifications. It not only recorded the outcomes of the commissioning activities,

but also stored the associated documentation.

Using the CDE, Balfour created a system to store and track the final handover documentation.

Furthermore, it used BIM 360 Field to store and track issues and snags for every internal and external space. Integration with Revit allowed Balfour to set up drawings of each floor, indicating the number of issues outstanding for every space and the readiness for inspections and lockdown.

Balfour also used OpenSpace for visual record keeping.

The team received automated reports at the end of each day ready for early morning meetings and weekly progress reports.

Ultimately, productivity was increased by 15%, resource time was reduced by 50% and project costs by 5%.

Balfour's success on the hospital has led it to adopt a similar approach and technologies on other major projects.

Nohman Awan, digital construction lead at Balfour Beatty, said: "This project has been going on for some years and has seen a lot of challenges, but we have supported delivery with our digital systems. The digital tools we have used have really helped the team to deliver the project. We have seen many ups and downs – from Carillion's collapse to Covid – so this award is really important for us."

Digital Construction Project of the Year shortlist

- Kingsland Wharves, London & Quadrant/Durkan
- London College of Fashion, University of the Arts, Portview
- Midland Metropolitan University Hospital, Balfour Beatty
- Stockport Interchange, Willmott Dixon Construction
- Transformation of HS2's Geospatial Approach, HS2/Eiffage Kier Ferrovia BAM Nuttall/Esri UK
- ULEZ expansion signage, Transport for London/Tarmac Kier Joint Venture/Lattice



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▼ The McLaughlin & Harvey team, led by Glenn McCaffrey (second left), with Ollie Hughes of Digital Construction Week (left), Dan Corbett from Procure (second right) and Tom Allen (right)

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McLaughlin & Harvey wins Digital Contractor of the Year

M&H took the prized Digital Contractor of the Year category, sponsored by Procure, for its focus on people, processes and technology

McLaughlin & Harvey's commitment to clear information management and its in-house digital construction expertise made the contractor the unanimous choice of the judges for the Digital Contractor of the Year prize – sponsored by Procure.

Belfast-headquartered M&H has met the digital construction challenge by focusing on people, processes and technology. The contractor, which has a workforce of more than 800 and operates across the UK, sees digital adoption as key to improving project outcomes.

M&H has shifted towards managing all its projects digitally and has built up its in-house expertise, growing its digital team from a single manager to a 10-strong department.

It has prioritised clear information management, following the ISO 19650 standards and the Industry Foundation Classes (IFC) schema.

M&H, while believing that technology should not become the 'tail that wags the dog', has made several judicious software procurement decisions, including:

- Viewpoint For Projects (VfP), to host its common data environment (CDE) process, which M&H configured to be compliant with BS EN ISO 19650;
- Notion, for development of an information hub, supported by Airtable databases, serving as the central repository for BIM documentation;
- Solibri, to check and validate the

M&H demonstrated a thorough implementation of digital throughout many aspects of the organisation. The company uses differing tools and apps for a particular purpose or process, with all data created being held in a form available to relevant internal staff and external stakeholders

What the judges said



information layer on M&H projects using IFC-SPF files; and

- Trimble Connect Model Viewer, supporting the contractor's objective for a model-centric approach to design and build, which enables models to be viewed simultaneously via any device, promoting collaborative work.

The development of this in-house expertise has enabled M&H to assist its clients in specifying their requirements, and subsequently delivering and verifying those requirements using ISO 19650-compliant processes and appropriate technology.

Prioritising information management has improved project delivery, communication, transparency and efficiency, boosting client satisfaction and trust in M&H's capability.

Glenn McCaffrey, digital construction director at M&H, said: "This award means everything. We have been working hard and building towards this over the last five years. It is absolutely fantastic and ratifies all the hard work that is being delivered at McLaughlin & Harvey in relation to digital construction.

"As a business, we are all about the fundamental basics of construction. We're focused on our people, processes and technology – ultimately, providing authentic information management."

Digital Contractor of the Year shortlist

- BAM UK & Ireland
- McLaren Construction
- McLaughlin & Harvey
- PCE
- SER Contractor
- Zed Pods



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Pam Bhandal is Digital Construction Champion of the Year

The Digital Construction Champion of 2024 prize deservedly went to Pam Bhandal for her service to the BIM and digital construction community

Pam Bhandal is EMEA head of marketing at Revizto, and previously spent the best part of a decade as a marketing manager at Autodesk. But the award reflects her wider engagement with the BIM and digital construction community – a community that might not exist without her.

Six digital construction professionals nominated Bhandal. In her role as a founding member of the UK BIM Alliance, she was described by one as the glue that kept the alliance going in its formative stages. She was instrumental in its outreach, significantly growing its engagement on LinkedIn and Twitter.

▲ Pam Bhandal collects her trophy from Ollie Hughes of Digital Construction Week (left), Will Mann of Construction Management (second left) and Tom Allen (right)

Through her considerable networking skills, she helped bring the right people together across industry specialisms and organised many of the BIM regions and BIM4 events. Indeed, alliance members told us there was little the organisation did that didn't have her fingerprints on it.

She was also one of the original core team members of Women in BIM. Without Bhandal, this network, which supports women in digital construction-related roles, would not have achieved the success it has to date, said one BIM professional.

Bhandal is dedicated and passionate. She connects leaders, fostering their collaboration, she builds vibrant communities and she has secured critical funding and resources to ensure essential industry initiatives have thrived.

Finally, it has been said by a number of respected industry leaders that she is one of handful people without whom BIM in the UK would simply not have happened!

Bhandal said: "I still haven't recovered from the surprise of winning this award. I would like to say 'thank you' to everyone who nominated me. It really means a lot. I'm not someone who uses BIM on a daily basis, I have always been behind the scenes, so for me to be recognised is incredible."

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Laing O'Rourke's Ben Hardie is Rising Star of the Year

Laing O'Rourke digital engineer Ben Hardie was crowned Digital Rising Star of the Year, sponsored by the Chartered Institute of Building



▲ Ben Hardie (second right) collects his trophy from Ollie Hughes of Digital Construction Week (left), Caroline Gumble of CIOB (second left) and Tom Allen (right)

Ben Hardie joined Laing O'Rourke straight from sixth form as part of its school and college leaver programme, where he went on to study for his degree. As he progressed in the company, he transitioned to digital engineering, where he found his passion, citing its multi-disciplinary nature and presence across business functions.

His academic performance was stellar, gaining a first-class degree in Architectural Technology and winning the Chartered Institute of Architectural Technologists' Outstanding Student award. This recognition was predicated on his

modelling, drafting and research skills during his final design project.

At Laing O'Rourke, Hardie has used his time to advance the industry, attending STEM events and careers fairs where he has demonstrated the built environment through a virtual reality headset. He is an evangelist for digital tools and technology, learning coding and developing the Power BI dashboards for project data management on The Whiteley project in London, where he is based.

On his first project, Soho Place, he created 4D animations to illustrate key build sequences to the project team, client and subcontractors.

He has also delivered numerous Navisworks training seminars, contributing to the digital literacy of his team. His ability as a mentor was recognised in his admission to Laing O'Rourke's digital engineering 'buddy' scheme. This scheme was set up to help new starters from the graduate programme by pairing them with more experienced digital engineers.

Becoming a mentor is a testament to his skill set as this is usually only a position taken up by more senior digital engineers. He embraced the opportunity, having come from the contractor's learning development programme himself.

Despite his recent transition from academia, Hardie did not waste any time in sharing his knowledge. He delivered lectures to engineering students at Exeter University, leading Navisworks fundamentals training sessions and providing technical support as students engaged in coursework.

He is deeply committed to leveraging digital construction enhancements, such as migrating 2D drawings to data-driven 3D models and creating accessible visual method statements. His diverse digital skill set earned him the affectionate moniker 'the Swiss Army knife of digital engineering' on site, reflecting his versatility and largely self-taught expertise.

Hardie said: "It feels incredible to be named Digital Rising Star of the Year. It is really special to be recognised for the work that I've done over the last couple of years. Being part of digital construction means you are able to effect a lot of change. It is really exciting. I also have to give a lot of props to my team – Laing O'Rourke has been a great support in terms of my career progression."

Digital Rising Star of the Year shortlist

- Savannah Armstrong, business architect at EDF UK
- David Caughey, digital construction lead at Mivan
- Ehsan Ghasemi, BIM information manager at VolkerLaser
- Ben Hardie, digital engineer at Laing O'Rourke
- Isabella Noble, project manager at EDF UK
- Aron Owen, project lead at Mott MacDonald Bentley



◀ The Geospatial Commission and AtkinsRéalis team collect their trophy from Ollie Hughes of Digital Construction Week (left), Tom Allen (second right) and Katie Armstrong of Dassault Systèmes (right)

National Underground Asset Register wins productivity prize

The National Underground Asset Register, developed by the Geospatial Commission and AtkinsRéalis, won Digital Innovation in Productivity, sponsored by Dassault Systèmes

The Geospatial Commission and AtkinsRéalis are building the National Underground Asset Register (NUAR) – an interactive digital map of underground pipes and cables that will improve safe digging and reduce accidental strikes.

There are an estimated four million kilometres of underground pipes and cables across the UK. A hole is dug every seven seconds to install, fix and maintain them. Each of the more

than 700 owners of these assets is legally required to share data for ‘safe digging’. However, there is currently no standardised method for this, with multiple organisations having to be contacted for each dig, providing information in varied formats and to different timelines.

This results in an estimated 60,000 accidental strikes on these pipes and cables every year, putting workers’ safety and lives at risk, in addition to community disruption which costs the UK economy £2.4bn annually.

For the build phase, AtkinsRéalis faced three main project challenges:

- to engage with and collect data from more than 700 asset owners;
- to transform and ingest this data into a single comprehensive database; and
- to develop a secure portal through which users can view and access this information.

AtkinsRéalis brought data transformation specialist 1Spatial

Digital Innovation in Productivity shortlist

- Buildots
- Geospatial Commission/ AtkinsRéalis, The National Underground Asset Register
- JCB – LiveLink: Case Support Management
- John Sisk & Son, Concrete Roads Framework
- Laing O’Rourke/ AtkinsRéalis/ VolkerRail, Geographical Information System on East West Rail
- L Lynch, The Operator App and the Customer App
- Teknobuilt, Accelerating Data Centre Construction Delivery

into the team to help address this challenge – developing and adapting a range of tools to manage this data transformation and minimise the need for human intervention.

The user portal was developed collaboratively with users from the outset. NUAR gives planners and excavators standardised, secure, instant access to the data they need, when they need it, to carry out work effectively and safely. It also reduces the time it takes to get location data from 6.1 days to 60 seconds.

An initial version of NUAR is now available across England, Wales and shortly Northern Ireland. It already includes data from major energy, water and telecommunication companies, transport organisations and local authorities.

NUAR is expected to be fully operational by the end of 2025, when it is estimated it will deliver £490m of economic growth annually through reduced accidental damage, increased efficiency, and reduced community disruption.

Joss Newman, communications lead at AtkinsRéalis, said: “Our project is all about collaboration. First, the project team itself is a collaboration, then you’ve got around 200 asset owners that have already signed up for the platform to start sharing data, and then there are thousands of users who are engaging with the platform and giving us feedback.

“Without all those people collaborating, we wouldn’t be able to deliver the project. It is great to be recognised for essentially delivering performance improvement.”

“An innovative entry. Its utilisation and development is only limited by imagination. With additional support of utility companies, government agencies and other stakeholders, this is an exemplar with the possibility to expand, leading to even more efficient asset management and safety practices

What the judges said

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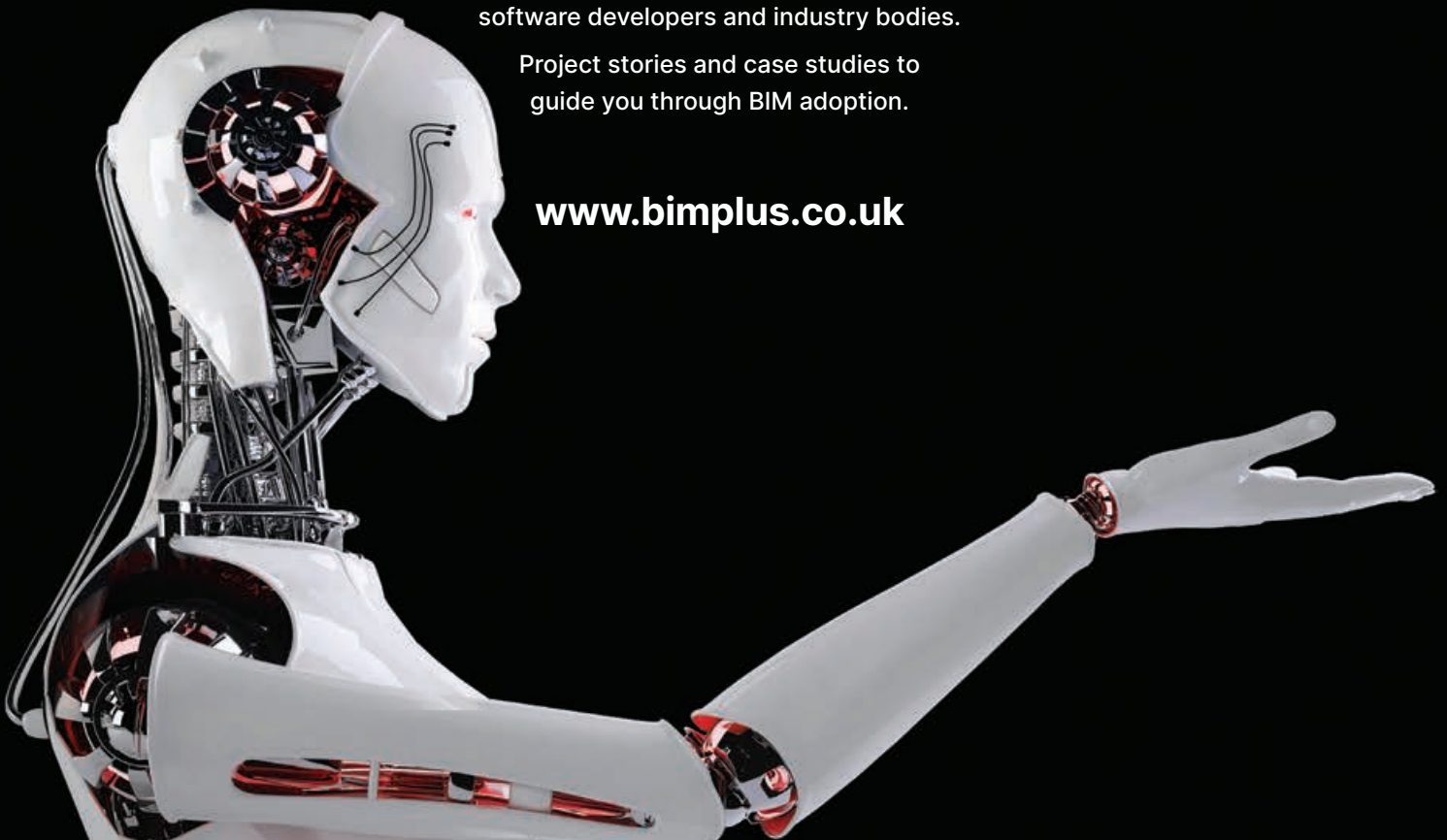
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Oswestry Water Works team wins collaboration award

United Utilities and Advance Plus won the Digital Collaboration of the Year award, sponsored by Bluebeam, for their efforts at Oswestry Water Treatment Works



▲ The Oswestry Water Treatment Works team celebrate with Ollie Hughes (left) of Digital Construction Week, Pratik Patel (second left) from Bluebeam and Tom Allen (right)

“Impressive, comprehensive use of technology. The benefits of better collaboration and communication through visualisation and more efficient information management are clear in the cost and programme savings. The personalised training plans and consideration for different learning needs is impressive in a project with a tight time frame and so many stakeholders
What the judges said

The United Utilities and Advance Plus (a joint venture between MWH Treatment, Stantec and J Murphy & Sons) team faces a significant challenge to deliver a £145m capital investment project in 33 months at Oswestry Water Treatment Works, while maintaining a live existing site with uninterrupted supply to United Utilities customers.

The contract includes the refurbishment of existing assets and the construction and commissioning of new assets to achieve regulatory outputs.

Some of the many obstacles facing United Utilities and Advance Plus include the project's complex scope and construction methods, working around underground

assets, constructing new or refurbishing existing assets while decommissioning ageing live ones, project control, logistics routes on a live client site and training.

They have tackled this head-on by adopting a digital-first approach and fostering full collaboration across a complex project and network of more than 20 subcontractors, the client and suppliers.

This approach has been achieved by adopting key digital initiatives to better engage with client operations, internal teams and supply chain delivery teams, and by creating a digitally inclusive space that fosters communication and open collaboration.

The technology used by the project team includes: 3D models; design for manufacture and assembly; virtual reality; digital rehearsals, 4D modelling and digital RAMs; mView+ interactive site induction; digital site quality control records using inspection test plans and field management tools; and Pix4D for photogrammetry capture for production controls and underground services. Hilti tracker for asset registration and delivery has been one of the most important tools to advance collaboration.

The digital-first approach at Oswestry is resulting in successful interoperability and a collaborative ecosystem between the client, contractors, subcontractors and the supply chain.

Clare Taylor, head of digital delivery at MWH Treatment, said: “Our collaboration was about creating an ecosystem and digital legacy through a project in the water sector. We have trained our supply chain and our clients, creating an environment where we can learn from each other. We are on a journey together.”

Digital Collaboration of the Year shortlist

- EDF UK/ Accenture/Dassault Systèmes, Digital Twin Implementation at Hinkley Point C
- HS2/SCS JV/ Queenswood HS2 Mandeville Road Ventilation Shaft
- Balfour Beatty/ Sandwell and West Birmingham Hospitals NHS Trust/ Arup/Gleeds/Stride Treglown Midland Metropolitan University Hospital
- NHS Lanarkshire/ WSP Digital Services/Currie & Brown/Keppie Design, Monklands Replacement Project
- United Utilities/ MWH Treatment, Stantec, J Murphy & Sons, Oswestry Water Treatment Works
- Network Rail/ Method Grid, The Digital PACE Framework

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Ulster University wins Digital Innovation in Asset Management category

The 'Virtual Campus' experience created by students at Ulster University was acclaimed by the judges, who handed it the Digital Innovation in Asset Management award, sponsored by Digital Construction Week

Virtual Campus is a student driven project, originating from undergraduate research. It uses a digital workflow to create immersive 3D virtual replicas of key spaces on all Ulster University campuses.

The project's ambition was to support the health and wellbeing of staff and students around space familiarisation and transition, with

a focus on vulnerable students' mental wellbeing and anxiety levels. The context was the university's relocation, transferring approximately 15,000 students and staff members from its Jordanstown campus to a newly constructed campus in Belfast City Centre.

Virtual Campus originated from an undergraduate student research

project that investigated the use of augmented reality to aid space layout communication for students with autism spectrum disorder (ASD).

The workflow uses laser scanning technology to capture spaces, which are then modelled or updated in Autodesk Revit before high-quality visual and virtual reality outputs are developed, all hosted on an intuitive and cross-platform interface. This workflow is hosted on a cloud-based platform allowing seamless access for team members and replicating real-world practice.

A key outcome has been the learning experience. The students involved developed their knowledge of advanced model authoring in Revit along with family creation and work-sharing practices. They engaged with professionals on the process of data capture (using RTC 360), processing (using Cyclone 360) then application in Revit via Cloudworx, using point clouds for accuracy checking and to aid model development.

The project has reached 4,600 users to date, with 13,600 views and 3,200 VR experience views.

David Comiskey, reader (associate professor), and Andrew Toye, Virtual Campus project manager, both of Ulster University, said: "The project has been driven by the students, for the students. It is wonderful to see all the time and effort they have put in being recognised at such a prestigious event."

◀ Andrew Toye (centre) and David Comiskey (second right) collect their trophy from Ollie Hughes (left) and Karolina Orecchini (second left) of Digital Construction Week and Tom Allen

Digital Innovation in Asset Management shortlist

- Ethos Engineering, Streamlining data visualisation for facility managers
- Glass Aftercare, Facade information management system
- iDEA, King's College London Vantage Model
- Kier/Ministry Of Justice/Glider/ Future Decisions, Ministry of Justice digital twin pathfinder
- Lattice, ULEZ expansion signage
- Notting Hill Genesis, Golden Thread programme
- School Property Matters, Operational excellence in asset management
- Ulster University, Virtual Campus
- Zutec, Taking charge of building risk assessments

Excellent use of technology and new solutions in teaching and learning. The Ulster University team has done an excellent job and the project deserves recognition
What the judges said

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ONE Engage wins Product Innovation of the Year

ONE Engage addresses the complex challenge of managing digital information in the residential sector for landlords, residents and fire and rescue services. The judges picked the platform as the Product Innovation of the Year

ONE Engage is an innovative building safety platform responding to the Building Safety Act. It connects residents, landlord safety teams and fire and rescue services (FRS) digitally, addressing post-Grenfell obligations and helping to ensure safety-critical assets are compliant.

It has been developed by One Creative Environments, in partnership with software house Bluebox, with funding from Innovate UK. With the legislative landscape continually changing, the development team formed a strategic partnership with Totus Digital, led by Aman Sharma, also deputy chair of the Building

Regulations Advisory Committee and chair of the BSI committee that has developed BS 8644-1 *Digital Management of Fire Safety Information*.

The new building safety regime means dutyholders in the housing sector must put provisions in place to share information relating to the management of key assets with residents and the FRS.

The ONE Engage platform aims to address these gaps for all three user groups:

- Landlords use the system to manage information exchanges with residents and fire authorities.

- Fire authorities use the interactive map to access critical building safety information, both static and dynamic.

- Residents use the system to connect with those in their vertical community, understand their building better, their legal responsibilities, and feel safe.

Although in its infancy, ONE Engage has entered beta testing with several organisations.

A tier 1 contractor, in collaboration with a local authority, is testing the technology on two operational higher-risk buildings, with 200 residential units in total.

Additionally, the National Fire Chiefs Council's Phase 3 Golden Thread Pilot will trial the use of the tool in mock-emergency situations, to evaluate the benefit in real-world scenarios.

Jason Whittall, director of One Creative Environments, said: "The Building Safety Act is the biggest and most complicated piece of legislation that's come into the industry in my lifetime. We have delivered a new, innovative solution that is needed for the industry to help residents connect with their landlords and the fire and rescue service.

"The Building Safety Act was created to better protect the residents of these high-risk buildings, and we've created a piece of software that empowers their voice."

Product Innovation of the Year shortlist

- Elecosoft, AstaGPT
- Invicara, Twinit
- KOPE
- Lattice
- ONE Engage
- ORIS Materials Intelligence/Sweco UK, ORIS Autodesk Civil 3D plug-in
- Persimmon, The Persimmon Way App
- Ramtech, Linear fire detection system



◀ Jason Whittall (second right) collects the trophy from Ollie Hughes (left) of Digital Construction Week, Justin Stanton (second left) of BIMplus and Tom Allen (right)

“An important tool, developed with wide industry collaboration, that identifies and tackles a key challenge to legislative adherence required for the built environment
What the judges said

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Queenswood wins Digital Consultancy of the Year

Queenswood won the Digital Consultancy of the Year, sponsored by Women in BIM, for its information management work on HS2

Queenswood played a key role in minimising project delays on HS2 by improving engagement with local councils and communities affected by the megaproject's construction.

Queenswood's key objective was to pull detailed works, logistics and programme information from contractors impacting the council areas and collate and repackage that information into a single, easily understood source of truth.

The approach aided councils' understanding of the cumulative impacts from the multiple contract areas, including elements such as multiple road closures on parallel routes, or HGV movements related to works. This demonstrated to the consenting authorities that works

were coordinated with community impacts in mind – a key contention in many disputes between a major project and local stakeholders.

Queenswood staff embedded themselves within the works and logistics teams to fully understand the key challenges, and convert such dry, complex information (eg P6 programmes, traffic management plans, construction methods) into digital visualisations.

Visualisations had to be understood at the simplest levels. They had to facilitate two-way conversations with the consenting authorities and the communities so impacts could be discussed and mitigated to minimise impact on the project and the public.

A brilliant example of putting humans first and translating information into plain English. Nice use of digital capabilities to make information available and accessible

What the judges said



◀ The Queenswood team collect their trophy from Ollie Hughes of Digital Construction Week (left), Henry Fenby-Taylor (second right) for Women in BIM and Tom Allen (right)

Drone videography was augmented with clear labelling, colour coding and animations to demonstrate planned and in-progress activities. This was used as a discussion tool to quickly identify concerns and issues, which could be communicated back to the work teams to remedy or tweak.

To outline various construction impacts, Queenswood employed explainer videos/animations or high-contrast, single-page programmes or plans that are colour-coded to the expected disruption or impact. For the public, videos can be accessed via a QR code in letters posted to the impacted areas.

Queenswood's work was embraced by Buckinghamshire Council and Hillingdon Council with key consents unlocked for HS2.

Queenswood is now contracted across more than 100km of HS2, working for four main works consortia, from London into Buckinghamshire.

David Eve, development director at Queenswood, said: "What sets us apart from the other consultancies and makes us unique is that we come from the construction delivery side of the business, so we really understand the industry.

"The award is such a wonderful surprise, especially because we're such a young business. However, since launching in 2015, we have been disrupting the market and making a big difference for our clients, so it's fantastic that our work is being recognised."

Digital Consultancy of the Year shortlist

- BIMBox
- DDC Solutions
- Glider
- Majenta Solutions
- One Creative Environments
- Queenswood
- Spanswick

▼ The AtkinsRéalis team collect their trophy from Ollie Hughes (left), Dr Melanie Robinson (second right) for Digital Construction North and Tom Allen (right)



Virtual Site Access tops Technology category

AtkinsRéalis's Virtual Site Access won the Best Application of Technology award, sponsored by Digital Construction North

In the nuclear industry, sites are predominantly situated away from areas of high population and therefore effective transport links. This, when combined with the necessary security restrictions (training, clearance), makes accessing these sites difficult.

Added to these site access issues are the inherent risks of the nature of the sites, both conventional and radiological. Furthermore, data security and information assurance also restrict people from being able to visualise the site. Therefore, a considerable number of people working in construction design are limited in their understanding of the configuration and constraints that will affect the decisions they make.

These obstacles led AtkinsRéalis to develop Virtual Site Access, enabling anyone to manage and visualise a physical site remotely. VSA puts project data to work to deliver the information needed to make the right decisions, at the right time, from anywhere.

VSA brings together industry-standard tools, technology and techniques alongside innovative bespoke applications and leading-edge technologies such as quadrupedal robotics, Microsoft HoloLens 2, Igloo Vision immersive spaces and cloud-based systems to deliver significant time, cost and carbon savings, as well reducing risks and aiding in collaboration and global knowledge transfer.

Between March 2023 and February 2024, the technology saved 20,118 hours of travel, an estimated £1.2m in costs (based on agreed client metrics), and 296,585kg of CO₂, while also substantially reducing personnel radiation exposure.

AtkinsRéalis cited an example of the application of VSA in which the team carried out a building inspection remotely while streaming the visuals live to a project team in an offsite location. The team were able to communicate with the operators in real time for a bespoke inspection.

The building was classified as 'no person entry', so the team used a quadrupedal robot, wireless mesh network and secure live streaming technology to complete the mission. This inspection allowed the project to progress on what had previously been a stalled task.

George Wormald-Kelly, digital implementation lead at AtkinsRéalis, said: "It was exciting to even be nominated for this award. This is something that we have been working on for a number of years – it's a combination of a variety of different technologies that we've rolled together into a single product. There's a defined output: it saves us travel time, allows us to reduce the number of people on site and, ultimately, reduces the amount of carbon that we're emitting due to travel."

Best Application of Technology shortlist

- AtkinsRéalis, Virtual Site Access
- AtkinsRéalis-WSP JV, A83 Rest and Be Thankful
- EDF UK/ Accenture/ Dassault Systèmes, Digital Twin Implementation at Hinkley Point C
- Fit For Work
- Heathrow/ AtkinsRéalis/Mace/ Trimble/WSP, Heathrow Airport cargo tunnel refurbishment
- Integrated Health Projects/ Buildots, Royal Bournemouth Hospital
- Laing O'Rourke/ Asite/Edocuments, Olympia Redevelopment
- L Lynch, Revolutionising On-Site Safety with VR Training
- Method Grid, The Digital PACE Framework with Network Rail
- Winvic, AI-Enabled Combined Noise and Dust Monitor



A very detailed and comprehensive approach to a complex environment. Good use of 'low level' entry for training and adoption ensuing a successful implementation
What the judges said

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ZERO

McAlpine's materials passports win Sustainability prize

Sir Robert McAlpine's adoption of materials passports on 1 Broadgate, in the City of London, triumphed in the Delivering Sustainability with Digital Innovation category, sponsored by Zero

1 Broadgate, in the City of London, is the UK's first large-scale project to deploy materials passports. By doing so, both McAlpine and its client British Land are achieving a milestone in their journeys toward net zero while also setting a standard for the industry to follow.

Materials passports are digital and interoperable datasets that collect the description of building materials to record what they are made of. They provide a reliable source of information that allows contractors, clients and supply chain to track the materials used during construction and throughout the life of a building.

McAlpine's implementation of materials passports at 1 Broadgate – a 12-storey 46,500 sq m commercial scheme – is centralised and uses a model-led sustainability reporting that can be easily adopted across the entire built environment sector.

In the past, materials sustainability information was only relevant

to the project stage, capturing responsible sourcing certification and materials quantities. Information was collated during construction on materials delivered and associated responsible sourcing certification.

The materials passports used by McAlpine help to link the carbon data to the model, supporting the connection between specific elements and their carbon impact. This new technique allows the contractor to tie the carbon impact of individual elements to the graphical representation of the construction element in the form of 3D objects.

The materials passports system is already producing results for McAlpine: during the demolition of

the original 1 Broadgate building, 27% of the materials were reclaimed for reuse, either as part of the new structure or within the wider Broadgate campus.

Will Townsend, sustainability manager, and Nick Leach, director of digital construction, said: "It is a fantastic project. The team really engage with sustainability with a holistic approach. Sustainability is embedded in everything we do, particularly in the digital element of what we are delivering. The materials passport brings a lot of this sustainability to the fore, not just for us as a construction company, but also for the end users, which is fantastic."

Delivering Sustainability with Digital Innovation shortlist

- AtkinsRéalis, Virtual Site Access
- Eckersley O'Callaghan, BayBuilder
- Ethos Engineering, Streamlining data visualisation for facility managers
- Furbnow, Digital retrofit platform
- ORIS Materials Intelligence/Sweco UK, Carbon assessment tool for infrastructure
- Sir Robert McAlpine, 1 Broadgate

“This type of system is essential and should be used for all built assets, assembling accurate information on the building components and materials. It's extremely practical and useful. It clearly has benefits in waste management and also effectively managing and maintaining the building

What the judges said



◀ Will Townsend (centre) and Nick Leach (second right) collect the trophy from Ollie Hughes of Digital Construction Week (left), Johnathan Munkley (second left) for Zero and Tom Allen (right)

▼ The iDEA team collect their trophy from Ollie Hughes (left) of Digital Construction Week, Paul Wilkinson (second left) for nima and Tom Allen (right)



iDEA and King's College London win data gong

iDEA and King's College London used new digital technologies and data planning to deliver a long-term campus masterplan – and the collaboration won the Best Use of Data category, sponsored by nima

iDEA, a multi-disciplinary design consultancy, has been collaborating with King's College London (KCL) for the past four years, exploring new digital technologies that could support the delivery of a long-term campus masterplan to optimise a complex estate in central London.

The KCL estate is a complex cluster of 250 buildings of various periods. KCL wanted base data that would allow it to engage with academics and the senior leadership team and develop a 2029 property vision to: optimise use of historic assets and office space; enhance student experience; reduce energy consumption; support hybrid work practices; and deliver cutting-edge teaching space. KCL held good

property data but this was confined to Planon data that relied on multiple input sources.

iDEA and KCL felt existing tech solutions fell short of addressing their demands effectively, so they decided to build a custom software tool from the ground up.

One of the primary digital technologies they have worked with is Vantage, an estates visualisation platform that aggregates core campus data. Vantage is a multi-layered and 360-degree 'command centre' from which millions of combinations of data analysis can be achieved in one place at one time. Using Vantage, iDEA developed a digital campus platform, built in the Unity game engine.

What is outstanding about this innovation is the extent to which it is leveraging existing asset data to do so. In terms of value, this toolset has the potential to deliver significantly more value than others in the operational phase. It is eminently scalable to other projects

What the judges said



This provides an interactive means of storytelling and data analysis, incorporating information including the relative locations of campuses and buildings; building condition; functional suitability; construction date; tenure type; and 3D representations of buildings.

iDEA has also developed a bespoke open-source API that allows data from associated tools such as Register (a timetable analysis tool) and Forecast (a spatial scenario planning tool) to connect with the Planon data, creating a single source digital twin of the whole campus.

With a 3D build of KCL campuses, iDEA has provided access to all the relevant occupier, work settings and occupancy data for the entire university. The model is used by the KCL estates team as an engagement tool and to analyse the estate and scenario plan. Longer term, there is the possibility that KCL's architecture and construction students could use iDEA's tools to understand how carbon emissions can be reduced.

Chris Ager, MD of iDEA, said: "If it hadn't been for our clients at King's College seeing the value in the project, supporting it, and giving us a platform to actually develop it, then we would not be here collecting this award. We're proud to be supporting the university to improve education around real estate."

Best Use of Data on a Project shortlist

- AtkinsRéalis, Digital design at Sizewell C
- Disperse/Canary Wharf Group, Wood Wharf Development
- DMRC, Allo on HS2
- GMI Construction, ProjectData
- iDEA, King's College London Vantage Model
- Integrated Health Projects/ Buildots, Royal Bournemouth Hospital
- Skanska/ National Highways, Delivering data-driven construction digital twins in highways

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HSE team wins safety award

The Health & Safety Executive's live trial pioneering the use of sensors and safety zones with 3D modelling won the Digital Innovation in Health, Safety and Wellbeing category, sponsored by Mission Room

For the past two years, the Health & Safety Executive (HSE) has been working through the Discovering Safety programme with the construction industry, academia and technology providers to develop a library of standardised data and processes that can be incorporated into visualisation and modelling tools, including BIM, to mitigate safety risks in construction.

As an extension of this project, a new trial was started to pioneer the use of sensors that can be physically attached to people and plant equipment, and digitally linked to a BIM model to create safety zones.

The trial's key outputs were to:

- showcase the viability of design of 4D safety zones, planned in advance of work starting, on a construction site during construction;
- demonstrate how the data collected by onsite sensors can be visualised and analysed in a BIM model via a playback scenario. Doing so can offer valuable insights to guide future decisions for site planners; and
- provide a basis for enhancing safety standards and generating guidance and best practice for the construction sector, particularly

“The use of technology to improve safety, particularly around separation, is key. Great to see the industry, academia and tech suppliers pulling together
What the judges said



◀ The HSE team collects their trophy from Matt Blanchfield (left) from Mission Room, Ollie Hughes from Digital Construction Week (second left) and Tom Allen (right)

Digital Innovation in Health, Safety and Wellbeing shortlist

- Geospatial Commission/ AtkinsRéalis The National Underground Asset Register
- Fit For Work
- Graham, CORA: Enhancing health, safety and environmental reporting and analytics
- HSE, Industrial Safetytech Regulatory Sandbox
- HSE, Sensors and safety zones with 3D modelling
- Proicere, Sellafield Product and Residue Store Retreatment Plant

by enhancing analysis of the hierarchy of controls.

The six-month trial, which was completed in January 2024, leverages digital monitoring and control through the integration of two digital technologies – the modelling technology within SafetiBase from Asite 3D Repo and the wearable sensors supplied by Plinx.

The SafetiBase cloud-based system was used to identify and capture hazards within the BIM model following the BS 1192-6 standard. It was also used to highlight the safety zone that will be monitored and present their geometrical and temporal data.

The sensing-based system from Plinx was then used for monitoring the identified zones in the physical

construction site by tracking onsite personnel or equipment and alerting the site operative of any unauthorised trespassing.

Gordon Crick, health and safety inspector at the HSE, said: “This project is special because we have got a tremendous team. What we did was a world first – we were able to demonstrate that you can create an exclusion zone on a 3D model, then virtually reproduce it on site using geofencing technology, and then track it in the BIM model. We can watch people in real time if they encroach an exclusion zone.

“It’s very early days, but we proved the point that live monitoring technology is possible. That’s a significant advancement for health and safety.”

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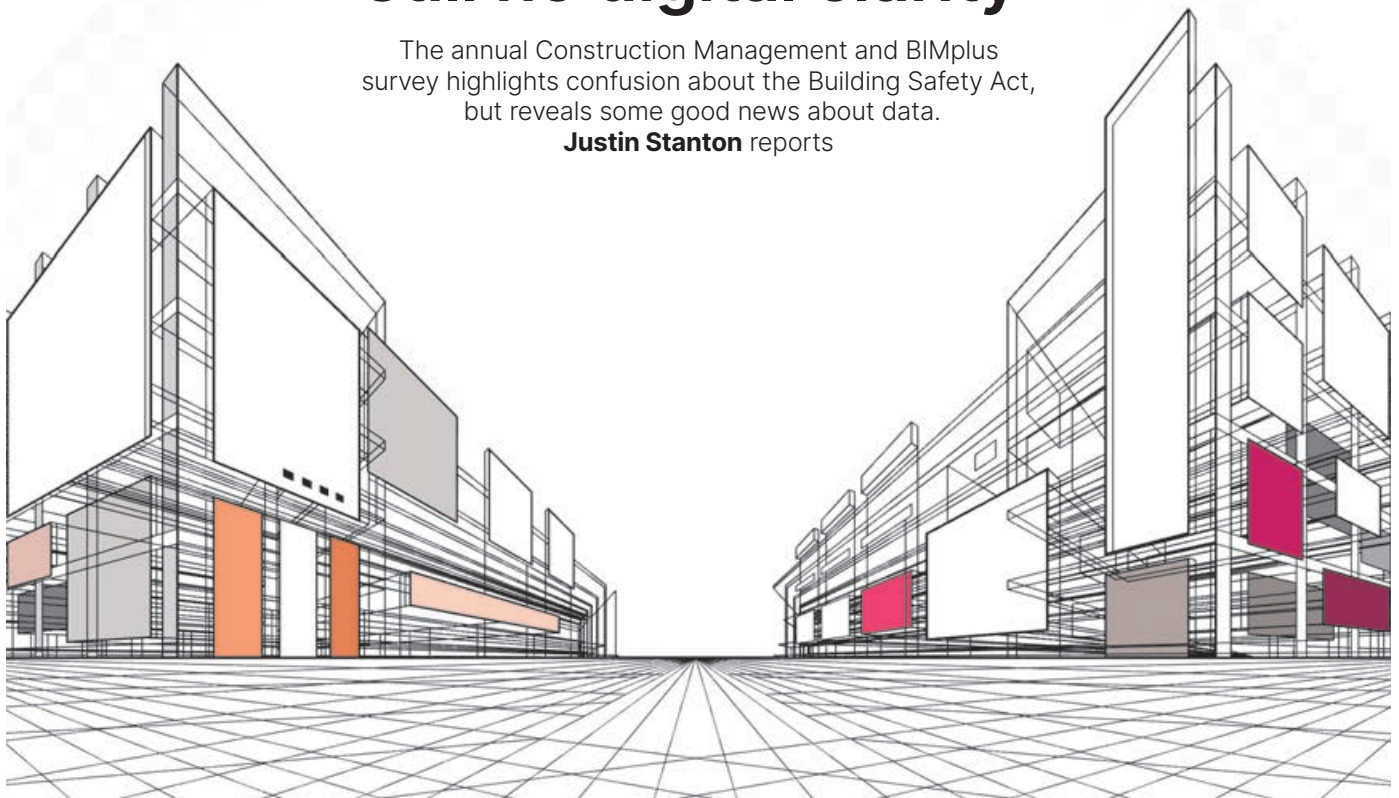
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Building Safety Act: still no digital clarity

The annual Construction Management and BIMplus survey highlights confusion about the Building Safety Act, but reveals some good news about data.

Justin Stanton reports



Do you feel like you've got a full understanding of the requirements of the Building Safety Act? What about your supply chain?

Those were two of the key questions in this year's *Construction Management* and *BIMplus* digital construction survey.

Less than a fifth of respondents said that both their business and their supply chain understand the Building Safety Act. The most

compelling responses highlight very real worries at the coalface. "Another piece of legislation that has not been practically thought out or trialled," said one respondent.

"It's still grey in too many areas and there is too much other legislation and PAS requirements that confuse the situation," said another.

One respondent dived into the golden thread: "[There are] unclear definition and requirements about data and BIM – where to host it for



47.2% had not undertaken a technology stack review in the past two years

compatibility, no client buy-in to supply a common data environment for an ultimate golden thread of non-siloed workflow."

Golden thread and interoperability

One of the key tenets of the golden thread – as that respondent alludes to – is that information and documents should be able to be transferred electronically to other persons without the data contained therein being lost or corrupted.

59%

are worried about interoperability

60%

are concerned about data literacy in their organisations

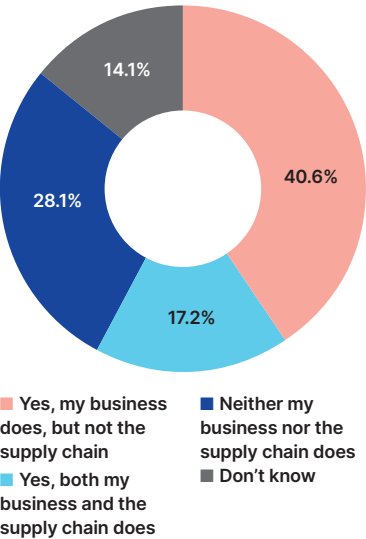
71%

have no AI strategy

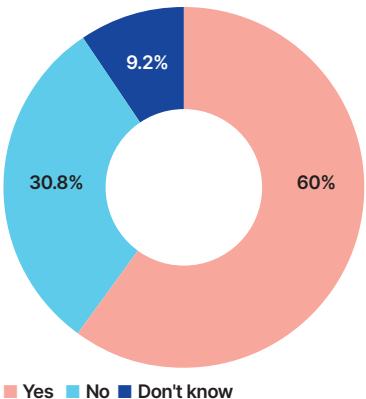
75%

think BIM/information management should be a profession

Do you feel that you and your supply chain understand the requirements of the Building Safety Act fully?



Does your business have or is it developing a data strategy?



This, plus a desire to remove inefficiencies, is why interoperability of software is deemed a necessity by so many in the industry.

With this in mind, we asked if interoperability is still a concern, and more than half of the respondents told us it is.

This led us to ask about technology stack reviews. A significant minority of respondents (47.2%) reported that their business has not undertaken such a review in the past two years, but a similarly large minority (41.6%) said reviews have taken place.

One respondent told us: "It was reviewed and found woefully lacking. [We're] in the process of modernising."

Another said: "Yes – it proved what we knew already. Mostly disconnected and dumb data!"

On top of your data?

With so much digital construction technology available with the ability to drown an operation in data and information, having a data strategy in place is vital. It's pleasing to report that nearly two-thirds of the survey respondents said that their business either has or is developing a data strategy.

If you have or are developing a data strategy, data literacy will be on your radar. Nearly two-thirds of respondents said they are concerned about data literacy in their business.

So, how are data and data literacy being addressed?

Less than a fifth of respondents said that both their business and their supply chain understand the Building Safety Act

"Inconsistently – I don't think everyone realises what is relevant to them," said one respondent. Another simply answered: "In an ad hoc way."

One respondent sounded like they were pushing water uphill in their business: "It isn't. Management do not understand or wish to comprehend the intricacies and importance of good project data and the need for integrating data into a model."

But some businesses are taking the right steps. One respondent said their business is concentrating on recruiting the right senior staff while investing in data literacy apprenticeships for existing staff.

What about AI?

We also took the opportunity to tackle the hot potato of the last 18 months: AI. We asked: "Do you have a strategy for the use of AI?" Just a fifth answered affirmatively. This is, perhaps, unsurprising and highlights the lack of engagement with AI-powered tools. Nearly three-quarters said they have no strategy for AI.

However, AI should be ramping up corporate agendas now: the AI law is in place in the EU, and the recent King's Speech contained a brief mention of the expected AI law for the UK.

We'll return to this topic in next year's survey, by which time CIOB's *AI Playbook* should have garnered further traffic and industry engagement since its launch in June this year. If you haven't read the *AI Playbook* yet, you should do so at www.ciob.org.

What you will learn in this CPD

- ▶ The duties of the principal contractor and principal designer
- ▶ The competency requirements of these roles
- ▶ The consequences of non-compliance

CPD: Compliance with new dutyholder roles

In this CPD, **Burges Salmon** lawyers review the duties and obligations of the principal contractor and principal designer roles under the new building safety regime

A key aspect of the building safety regime introduced by the Building Safety Act 2022 and the Building Regulations etc (Amendment) (England) Regulations 2023 (BRAE Regulations) is the new dutyholder regime and competence requirements for construction teams undertaking “building work” in England (as defined under the building regulations).

A core aim of this new dutyholder regime is to place a statutory basis for ‘best practice’ in ensuring compliance with the building regulations and improving competence across the construction industry. While the terminology used mirrors that of the Construction (Design and Management) Regulations 2015, the new roles introduced, namely the client, principal contractor (PC) and principal designer (PD), are separate and distinct.

Where there is more than one designer or contractor on a project, while the client under the new regime is required to appoint a PD or PC, the client and designer or contractor being appointed must be aware of their duties and confident that they hold the required competence and organisational capability for the role.

When reviewing the specific duties on the PD or PC at a high



level, the roles appear similar in nature, albeit one focuses on design work and the other on building work. However, the duties on the PC are comparatively greater. This is unsurprising given the crucial importance of contractors ensuring compliant design work is then accurately incorporated into the building.

The table on p52 provides an overview of these duties, reflecting the general duties on those undertaking design or building work, as well as additional duties placed on those appointed as PD or PC.

Competency requirements

All those involved in design and building work on construction projects in England to which the regime applies must be competent for the role they undertake.

In particular, before accepting an appointment as PD or PC, the designer or contractor must be certain that:

- (i) where the person is an individual, they hold the skills, knowledge, experience and behaviours necessary,
- (ii) where the person is not an individual, it holds the organisational capability (having the right policies, procedures, systems and resources in place), to:
- (iii) carry out the building or design work in accordance with all

relevant requirements; and (iv) fulfil the PC or PD functions as summarised above.

In making this assessment, it is important to note that “competence” is not defined under the BRAE Regulations and there is no prescriptive test to measure competence. Rather, this is a subjective assessment on a case-by-case basis that will need to take into account the size, nature and complexity of a project.

Under the new dutyholder regime, the PD and PC should be prepared actively to evidence their competence and organisational capability to the client. Moreover, they should also be prepared to maintain competence throughout the duration of their work on the project.

If they do not maintain this or find the work required of them exceeds their competence level or organisational capability, they must notify the client (and may need to withdraw from the role).

Delegating PD or PC functions

While a PD or PC is permitted to delegate aspects of its role to third-party consultants and/or subcontractors, it should be noted that legal responsibility will remain with the individual or organisation performing the role of PD or PC irrespective of such arrangements. ►



The PD and PC should be prepared actively to evidence their organisational capability to the client

Optimising competence

Although there is no definitive guide, the following resources provide guidance on the competence requirements:

- **The Industry Competence Steering Group (ICSG):** a cross-sector group aiming to accelerate the uptake of competency standards across the built environment, which has produced a number of materials to support the industry in understanding and evidencing competence, such as:
 - supporting the creation of the Publicly Available Specifications (PAS) below; and
 - developing frameworks of competency standards for individual specialisms across the industry within its 12 working groups.

- **Three new PASs:** PAS 8670 (Core Principles of Competence) as well as PAS 8671 (Competence for Principal Designers) and PAS 8672 (Competence for Principal Contractors), which provide frameworks that can be used to benchmark and assess competency.

- **The Industry Competence Committee:** set up by the BSR to provide insights and guidance to the industry (and back to the BSR) to encourage a cohesive approach to competence, of which the ICSG will form an independent sub-group.

- **Wider resources:** to demonstrate and assess competence, designers or contractors should look to trade associations, professional bodies and sector training providers working in their specialism who may support in this exercise.

Failure to comply with the requirements of the BRAE Regulations could constitute a criminal offence and lead to significant sanctions, including up to two years' imprisonment in respect of individuals

Consequences of non-compliance
Any individual or organisation that carries out design or building work exceeding their competence level or organisational capability could face enforcement action.
Failure to comply with the requirements of the BRAE Regulations could constitute a criminal offence and lead to significant sanctions, including unlimited fines in respect of organisations and unlimited fines and up to two years' imprisonment in respect of individuals.

For this reason, it is essential that any potential designer or contractor only accepts a PD or PC role if they are fully competent to do so.

Future of the new dutyholder regime
While the duties and competency requirements under the new regime continue to challenge the industry, it is hoped that this regulatory change will drive the industry away from the "race to the bottom" culture identified by Dame Judith Hackitt, towards a culture focused on delivering quality and safety for occupants of buildings.
Key to the success of this new regime will be dutyholders embracing the challenge to ensure they are equipped to harness, maintain and evidence their competence and organisational capability, coupled with the Building Safety

PC and PD responsibilities under the Building Safety Act 2022

Principal designer (Additional duties)	Principal contractor (Additional duties)	Designer or contractor (General duties)
Plan, manage and monitor design work during the design phase.	Plan, manage and monitor design work during construction phase.	Must not start work unless satisfied that the client is aware of duties
Take all reasonable steps to ensure design work carried out by them, and anyone under their control, is planned, managed and monitored so that the design, if built, would comply with all relevant requirements.	Co-operate with the client, PD and other designers and contractors to the extent necessary to ensure that the building work complies with all relevant requirements (ie, an absolute obligation on PC as opposed to the "all reasonable steps" standard placed on PD for the equivalent duty).	Designers are to take all reasonable steps to ensure that design work carried out by them (and those under their control) is planned, managed and monitored so as to comply with all relevant requirements. For contractors, they must ensure that their building work (and that carried out by those under their control) is planned, managed and monitored so as to comply with all relevant requirements.
N/A	N/A	Designers must take all reasonable steps to ensure that the design, if built, would be in compliance with all relevant requirements. Conversely, a contractor must: ● ensure their building work is in compliance with all relevant requirements; and ● provide workers under their control with appropriate supervision, instructions and information to ensure the building work is in compliance with all relevant requirements.
Ensure that they, and others on the project, co-operate, communicate and coordinate their work with the client, PC and other designers and contractors.	Ensure that they, and others on the project, co-operate, communicate and co-ordinate their work with the client, PD and other designers and contractors.	Co-operate with the client, designers and contractors (including PD and PC) to the extent necessary to ensure compliance with all relevant requirements. Notably, when only carrying out part of the design or building works, must consider other designs or works being carried out and report any concerns as to the adequacy of that design or work to the PD or PC (as appropriate).
Liaise with the PC and share information relevant to the building work to ensure compliance with all relevant requirements (having regard to any PC comments).	Liaise with the PD and share information relevant to the building work to ensure compliance with all relevant requirements (having regard to any PD comments).	Take all reasonable steps to provide sufficient information about the design, construction and maintenance of the building to assist the client, other designers and contractors to comply with all relevant requirements.
Assist the client with providing information to others.		Notify other parties if ceases to be competent to satisfy requirements of regulations.
Where the work is to a higher-risk building, establish and maintain a mandatory occurrence reporting system for safety occurrences, collate the relevant 'golden thread' information throughout the construction phase and provide a compliance declaration to the Building Safety Regulator (BSR) within the completion certificate application to confirm it has fulfilled its functions.		Where requested, provide advice to PD or PC (as appropriate) or client on whether any work amounts to higher-risk building work.



▲ Given the diverse scope of projects, the PD and PC roles will be quite fluid and require a degree of flexibility

Regulator (BSR) and industry bodies' continued engagement with industry to truly support the transition.

Co-operation and co-ordination of construction teams and the wider industry will be crucial here to ensure there is clarity of message on what standard is required to incentivise a 'race to the top' in respect of building regulation compliance across all projects in England.

As we continue to monitor the implementation of the new dutyholder regime and additional changes brought into effect by the Building Safety Act 2022, there has been some speculation within industry as to whether the direction of travel indicates an eventual intention to regulate the PD and PC role.

Strict regulation does not equal immediate benefit. The right balance of 'carrot and stick' will ensure that innovation continues to thrive and that a positive culture shift occurs organically with industry on the government's side.

The new PD and PC dutyholder roles, coupled with the enhanced liability of building professions introduced by the Building Safety Act 2022, appear at present to be achieving this balance.

In any event, given the diverse nature and scope of projects, the PD and PC roles will, by their very nature, be quite fluid and will require a degree of flexibility in their performance which would not be readily subject to further codification within a regulated industry (which is already seeking to comply with a significant regulatory shift by way of the new dutyholder regime).

We therefore do not currently envisage more stringent regulation to come into effect, but this area continues to evolve and should be monitored for developments. ●

The authors of this CPD are Tom Weld, director, Kayla Urbanski, solicitor, and Francesco Andres, senior apprentice solicitor, of Burges Salmon's construction and engineering team.

CPD Questions

1) What legislation introduced the new roles of the principal designer and principal contractor?

- a) Construction (Design and Management) Regulations 2015
- b) Building Safety Act 2022 and the Building Regulations etc (Amendment) (England) Regulations 2023
- c) Housing Grants, Construction and Regeneration Act 1996

2) Which party has an absolute obligation to ensure that all building work complies with all relevant requirements?

- a) Client
- b) Principal designer
- c) Principal contractor

3) How long can an individual be imprisoned for if they fail to comply with the new duty holder regime?

- a) 2 years
- b) 5 years
- c) 10 years

4) If a principal contractor feels they are no longer competent to carry out the role, what should they do?

- a) Notify the client and determine whether they need to withdraw from the role
- b) Appoint a new principal contractor
- c) Nothing

5) What happens if a principal designer or principal contractor delegates their role to a third party?

- a) Nothing, they are permitted to delegate aspects of the role to a competent third party
- b) Nothing, however, the legal responsibility for the role will remain with the dutyholder
- c) All of the above

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



Aqeel Haque
Decipher

‘Our client won’t pay. What can we do?’

This month’s contract clinic question comes from a contractor whose client is refusing to pay for work that’s been invoiced for. **Aqeel Haque** looks at what recourse is available

THE QUESTION:

We’ve not been paid for work we believe was correctly invoiced, on time and in accordance with the contract. The employer isn’t replying to emails and insists it’s not their problem. What can we do?

THE ANSWER

Delayed payments are a widespread issue in construction. They are often reluctantly accepted and even tolerated by some contractors. The Housing Grants, Construction and Regeneration Act 1996 introduced a requirement for a paying party to notify the amount due at specific points during most construction projects. However, correct notification of the amount due represents only the first hurdle. The actual receipt of payment can be difficult to obtain.

Contractors face a difficult dilemma. Taking a hard line with clients and enforcing contractual rights can seem commercially aggressive. On the other hand, a failure to react can cause operational issues, strain supply chain relationships and even impact team morale.

Common causes

Payment delays in construction are influenced by various factors. These include issues such as a lack of funds or inflexibility and excessive bureaucracy in employers’ procedures. Despite attempts to reduce it, there is often a dependency on upstream payments – the ‘pay when paid’ effect. Finally, there is a tendency among some employers to delay payments simply to improve cashflow.

Delaying payment may seem beneficial to the payer in the short term. However, it is ultimately detrimental, straining relationships, disrupting project flow and leads to increased costs, damaging the industry’s reputation.

Your statutory and contractual rights

Under section 112 of the Construction Act, Contractors have a statutory right to suspend work if payment is not made as required. This right is actionable after giving at least seven days’ notice. It can continue until full payment is received. The defaulting party is



When faced with non-payment, you should take a structured approach to resolve the issue to help maintain the relationship with a client

also liable for any reasonable costs incurred due to the suspension.

Standard forms of contract such as the JCT and NEC provide mechanisms to address non-payment. These include the ability to charge interest on overdue payments, suspend works, and even terminate the contract if non-payment continues over a longer period.

How to address non-payment

When faced with non-payment, you should take a structured approach to resolve the issue to help maintain the relationship with a client. Here are some steps to consider:

- Understand and monitor payment terms. Your invoicing department and project team should be aware of the contract payment terms and schedule. These should be monitored closely. Be proactive in addressing any discrepancies or delays as soon as they arise.
- Communicate early and clearly. Initiate dialogue with the client as soon as the payment is overdue. Sometimes payment delays are due to a simple misunderstanding or



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



Preventing non-payment issues begins with establishing strong foundations at the outset. Conduct thorough financial checks on the paying party to assess their financial stability ”

foundations at the outset. Conduct thorough financial checks on the paying party to assess their financial stability and payment history. This can be achieved through credit agencies and obtaining references from other firms.

Ensure that all payment terms and schedules are clearly defined and agreed upon in the contract. The contract should outline the payment milestones, conditions and consequences of late payments.

Additionally, verify that the client can realistically deliver on the agreed payment terms. If you have agreed 14-day payment terms, can this be achieved with the client's accounting and approval processes? Regularly follow up on submitted payment applications and invoices and maintain detailed records of all communication.

Provided you have followed the requirements of your contract and any notice conditions, there should be no reason in law or contract to withhold payment. If you feel payment is being withheld unreasonably, then communication is key. If communication fails, seek external advice to ensure you're following the correct process.

If all else fails, then formal dispute resolution may help to resolve the issue. ●

Aqeel Haque is senior consultant with Decipher (A DeSimone Company).

administrative errors that can be swiftly resolved.

- Issue formal notices. If the initial communications do not resolve the issue, issue a formal notice of non-payment. This notice should outline the outstanding amount, the due date and reference to relevant contract clauses. Check your contract to ensure you deliver the notice in the correct format.
- Seek advice. If non-payment persists, consult with someone experienced in dealing with non-payment matters to explore further actions.
- Follow the contractual procedures. Keep to the specific procedure outlined in your contract.

For example, under the JCT contract, you are entitled to charge interest on late payments (clause 4.7.7) and suspend works after a set period of notice (Clause 4.8). Ensure all actions are well documented and in compliance with contract terms.

- Make use of statutory rights. If the contractual remedies are inoperative, leverage your statutory rights.
- Consider formal dispute resolution. Engage in formal dispute resolution methods such as small claims or adjudication.

Preventive measures

Preventing non-payment issues begins with establishing strong

▲ Delaying payment strains relationships and disrupts project flow

'Digital can revolutionise the demolition sector'

A digital platform for demolition and modelling for modular housing are Dr Kenneth Park's twin areas of research. By **Nicky Roger**

What are you researching at present?

I have been awarded the Brain Pool programme fellowship by the Ministry of Science and ICT in South Korea and the National Research Foundation of Korea. It is for the enhancement of research on 'House information modelling for a typical type of housing modular units'.

I am also working with CNC Group Holdings (Colemans Group) to revolutionise the demolition and deconstruction sector by developing a digital demolition platform to advance efficiencies, safety and environmental performance for the Innovate UK KTP (Knowledge Transfer Partnerships) project.

Why is it important to the construction industry now?

The highly fragmented nature of current construction practices necessitates the development of reliable BIM-enabled house information modelling for a typical type of housing modular units.

It supports and guides the introduction of effective housing modular construction and management and ensures the integration of required information throughout the project life cycle.

The KTP project envisages the development of a transformative 'digital demolition' platform incorporating 3D scanning, artificial intelligence and remote-control



equipment, enabling demolition to be preprogrammed, predictable, data-driven and simulated in a virtual environment – eliminating workers' exposure to dangerous environments.

What is new about this research?

New technologies, including building information modelling (BIM), 3D scanning survey, 3D modelling, artificial intelligence, digital demolition and modular construction were not available for past construction projects, but they are essential in order to alleviate current problems in the construction sector including the housing sector in both UK and South Korea.

There is growing advocacy for their adoption due to their ability to facilitate faster, more cost-effective and safer construction of buildings. Additionally, they contribute to reduced environmental impact, enhanced predictability, whole-life performance and increased profitability.

How will construction companies apply your research?

CNC Group Holdings is a leading demolition specialist, operating in an industry challenged by safety hazards, inefficiencies and an ageing workforce.

The KTP project will utilise simulation, modelling, AI and remote-controlled machinery to minimise human exposure to demolition

Dr Kenneth Park CV

● Brain Pool programme fellow, National Research Foundation of Korea, 2023 to present

Aston University:
● Reader in Construction Management & Engineering, Aug 2020 to present

● Head of Engineering, Systems & Management, 2019-20

● Senior lecturer in Construction, 2017-20

● Deputy head of Engineering, Systems & Management, 2018-19

● Lecturer in Construction, 2009-15

● Adjunct professor, Hanyang University, South Korea, 2012-22

● Senior lecturer in Construction Management, Massey University, New Zealand, 2015-17

hazards, thus reducing hazards to workers' safety. It will also optimise techniques to tackle rising costs and waste to maximise resource utilisation and financial efficiency.

The KTP will deliver the required capabilities to empower Colemans with AI for material assessments and remote equipment control, digitalisation for revolutionised planning and data management, and circular economy practices for sustainable material reuse.

What areas of research do you think are most crucial for academics to focus on now to meet industry challenges?

The UK *Construction Playbook* brings together expertise and best practices to reform the industry and transform how public works projects and programmes are assessed, procured and managed. However, there is no one straightforward solution to all policies and issues.

From these policies and my 29 years of experience in both industry and academia, MMC, digital transformation and early engagement are most crucial.

How wide is the gap between academic research and industrial application? How can we meet these challenges?

The gap between academic research and industrial application in construction can be substantial due

The project envisages a transformative 'digital demolition' platform, enabling demolition to be pre-programmed, predictable and data-driven

Dr Kenneth Park,
Aston University



to different objectives, resource constraints, funding limitations, risk management approaches, communication barriers and collaboration.

Like the KTP project, industrial practitioners and academic researchers should together seek a way to do research collaboration via an innovative funding programme which helps companies gain access to academic knowledge, expertise, and technology.

Academics should be encouraged to focus on practical and scalable solutions that address industry needs. Continuous education and training programmes should be provided for industrial practitioners to help them stay updated with the latest academic advancements and apply them.

Then we can bridge the gap between academic research and industrial application, fostering a more innovative and efficient construction industry. ●

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

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CIOB Community



Building Brum brought together industry leaders and key stakeholders to discuss the challenges and opportunities of build-to-rent projects

regional director at Careys, and Alison Kilby, associate director at Arup.

The session tackled questions around the community effect of large builds, attracting talent and ensuring that large projects like Smithfield and Martineau Galleries benefit local communities.

Bansal emphasised the need to recognise social spaces and understand the demographics of the area. Wraight highlighted that less academic individuals often struggle to meet apprenticeship criteria, with Kilby adding that they can be more competitive than graduate schemes.

Scale helps mitigate gentrification by offering varied tenures, and community building can take decades, noted Mason. Bansal reinforced the importance of 'placeshaping' rather than 'placemaking', prioritising long-term community needs.

The evening concluded with panellists sharing key ingredients for delivering successful build-to-rent schemes. These included affordability, flexible amenity spaces, engaging with the right people and ESG. ●

Building Brum: experts ponder impact of urban development

CIOB event raises issues around city projects

The importance of community, addressing the skills gap and how to ensure large projects don't ostracise locals were some of the key issues raised at a recent discussion event in Birmingham about the city's development and the critical role of placemaking within society.

Chaired by Sandi Rhys Jones OBE, CIOB immediate past president, CIOB

and Building Brum brought together industry leaders and key stakeholders from prominent Birmingham city-centre developments to discuss the challenges and opportunities of build-to-rent projects.

The panel were Dav Bansal, partner at Howells, Selina Mason, director of masterplanning and strategic design at Lendlease, Tom Wraight MCIQB,

▲ From left: panellists Dev Bansal, Selina Mason, Tom Wraight, Alison Kilby and chair Sandi Rhys Jones

Member's firm wins renovation awards



Abbey gains recognition for south London project

Steven Gilbert MCIQB (pictured), director at Abbey Extensions & Renovations, has been celebrating award wins for the company.

It won two categories at Build Magazine awards: Best Architect Collaborating Principal Contractor 2024 – South East London and

Contemporary Renovation of the Year 2024 (South East London) for Rollscourt Avenue, Herne Hill (right).

The firm has also been shortlisted as a finalist for the London Construction Awards Contractor of the Year. The winners are announced at a ceremony on 27 September.



Members visit roof repair project at National Trust's Coughton Court

Meticulous reroofing of Tudor country house introduces modern materials

CIOB members were treated to a site visit to ongoing works at a substantial £3m conservation project at Coughton Court, a Grade I-listed National Trust (NT) property in Warwickshire.

The primary focus is the extensive reroofing of the Tudor house, a meticulous process involving the replacement and repair of the roof's structure and tiles. In addition, significant repairs are being made to the windows, masonry and stonework.

The NT's approach ensures that, while the building's historical essence remains untouched, it benefits from contemporary methods and materials that enhance durability and sustainability.

Work began in September 2023 and will run until 2025.

Reusing materials is part of the sustainable approach underpinning the programme as is providing homes for the four bat species that have called it home for generations.

The Through the Roof: FuturepROOFing Coughton Court project has featured in the NT climate adaptation report, which highlights how more frequent, heavier rain plus natural wear and tear has contributed to the need for the work.

As part of this the project team have been featured on various news outlets from the BBC breakfast programme to the Channel 5 news. **Read more at www.nationaltrust.org.uk/visit/warwickshire/coughton-court/through-the-roof ---coughton-roof-project.**



Safety is no sitcom

CIOB member Dr Marshal Rozario has published a book which challenges the workplace approach to safety. *Safety is No Sitcom: The habits of highly effective safety leaders* is aimed at safety professionals, exploring new ways to evaluate their current safety practices.

The book is available from Amazon for £12.

Apprentice of the month: Elize Burn

In the first of a regular series we meet CIOB's winners



Since CIOB launched its apprenticeship programme in 2022, almost 1,500 apprentices have registered

to have CIOB facilitate their end point assessment. Around 250 have already passed.

This year CIOB has awarded Apprentice of the Month to those who have impressed. These include Richard Gravells from Berkeley Group, Neve Prout from Wates Group, James Monk from Munro Building Services, Tanya Shuttleworth from Kier – and Elize Burn, an apprentice quantity surveyor with NG Bailey. Here she shares her experiences.

What was your biggest challenge?

Balancing college and a full-time job. I went to college in six-week blocks, but you've still have all your emails coming through every day, things you still need to be keeping track of. And you're learning so much. I had no construction experience before I came in, so was learning all the new terminology, the new information.

How do you feel your apprenticeship has prepared you for a career in the industry? Do you feel fully prepared?

Yes, I do. It's given me the experience to develop my understanding on the day-to-day jobs a QS needs to undertake. I think if I'd gone straight to uni and just done a degree without any experience, I wouldn't be able to just come straight in and do the job. Now, because I've had three years of experience, I'll know all the processes.

What was your favourite project?

I've been working on Stevenson Building at Newcastle University, a big project in two phases. So it's given me the understanding of what happens at the start of a job, through the construction phase and at the end.

Are you planning on moving on to a Level 6 course?

I've applied for Northumbria Uni, so I'm hoping to start that in September. **For more details visit: www.ciob.org/learning/apprenticeships.**

▼ CIOB graduates receive their status in May



Graduates celebrate

Congratulations to new fellows, members and chartered companies who received their status at two graduation ceremonies on 17 May

Honorary life members

Dermot Russell
David Stockade

FCIOB

Glenn Boyd
James Diamond
Laurence Kendall
Zijing Li
Ben Pritchard
Bryan Williams

MCIOB

Kazzim Adeyemo
Titus Akpan
Sean Allen
Alfie Anderson
Muhammad Ashgar
Brett Ashton
Chi Yuen Au
Bogdan Balusi

Paul Barnes
Alan Bear
Sally Bedwell
Stephen Bell
Jason Bonnici
Gavin Bourne

Asterios
Bourouzikas
Robert Buck
Kevin Burke
Lok Ning Chan
Mounib Chreih
Gary Clayton

Jon Collins
John Connor
Declan Coyle
Pasty Creaven
Conor Cruse-Bowles
Antonio D'Angio
Barry Deegan
Valentin Dolapchiev
Lucy Esson

Oran Flynn
Paul Foster
Gordon Fu
Daniel Gill
Wayne Gray
Nazar Gridjko
Gert Groenewald
Paul Harriman
Shivraj Hawaldar
Phill Heales
Austin Hendren
Alex Hennessey
Carlos Hernandez
Sotomayor
Michael Hibberd
Liam Hill
Stephen Humphries
Matthew Hunter
Peter Hutchinson
Leigh Wakeman
Mohd Jalil
Andrew James

Suzanna Jenkin
Paul Johnson
Terry Jones
Alfredas Macenka
Godfrey Mandibaya
Linas Marocka
David McClure
Mohamed Galal
Mohamed Tharwat
Ahamed Anfas
Mohamed Thowfeed
Samuel Milton
David Moore
Adam Moorhouse
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Judith Nakalema
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Stephen Nicholas
Robert Odey
Adeyinka Odusina
Opeyemi Okesola
Dmitri Petcov

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Joe Sollner
Bo Xuan Stelzer
Ed Stratton
Andrew Sweeney
Andrea Truccas
Samuel Ward
Daniel Whalley
John White
Clinton Wright
Qian Yi

Chartered companies

Apex Contractors
Hansa Group
Lumybel Projects

Ryan commended for work on RAAC at MOD awards

CIOB member 'helped protect numerous people'



Paul Ryan MCIOB, regional technical manager for the Defence Infrastructure Organisation (DIO), has been presented with a special commendation at

the Ministry of Defence (MOD) Chief Scientific Advisor Awards.

At the tail end of last year, Ryan (pictured) took up secondment in DIO's technical services team to support the action plan for RAAC (reinforced autoclaved aerated concrete), which had hit the news headlines.

He played a pivotal role in supporting, co-ordinating and guiding the work of DIO, working closely with the technical services and centre of excellence teams, in the national response for dealing with RAAC both within the MOD and with other government departments.

Ryan liaised with academic bodies to further industry knowledge and carried out research into innovative repair techniques to slow degradation.

He also carried out virtual inspections with onsite personnel when travel was not an option providing technical expertise via video conference.

His citation stated: "His input has helped protect numerous people across the UK."

Ryan's award was presented at the awards in Whitehall on 4 July by vice admiral Paul Marshall.

Galliford Try builds community in Milton Keynes

Members visit sustainable housing at Park Square



Galliford Try recently hosted CIOB members on a site visit to Milton Keynes that showcased environmental targets.

Members toured Park Square, a new residential development that stands out not only for its scale but also for its commitment to environmental consciousness. The development aims to achieve an EPC rating of B and a Home Quality Mark (HQM) of three stars.

The construction process includes the use of energy-efficient insulation and glazing, alongside renewable energy sources and a design that optimises the use of natural light and ventilation.

The landscaped external areas are designed to provide residents with aesthetically pleasing and functional outdoor spaces, promoting a sense of community and wellbeing.

Twin peaks: digital helps to promote property

CIOB member Alan Chamberlain mined the benefits of digital twin technology for his Airbnb

Built in 2022 and completed in 2023, the Garden Cottage in Hinckley, Leicestershire, is a one-bedroom single-storey cottage available for private holiday stays.

The building won Small Residential Scheme of the Year Award 2023 at the ProCon Awards, which showcase projects in construction, property and the built environment in Leicestershire and Rutland.

Its owner, Alan Chamberlain, project director with PMKConsult, has used his knowledge of digital technology to enhance bookings.

"The Garden Cottage project serves as a prime example of the transformative power of digital twin technology," he said. "By implementing this advanced technology, we have significantly enhanced our ability to attract more

guests and provide an exceptionally detailed insight into the property."

Virtual tours created with digital twin technology allow potential guests to explore the space as if they were physically present, showcasing specific features and creating engaging presentations.

The result has been a noticeable increase in bookings and guest satisfaction, said Chamberlain. His experience shows how the technology is opening up new opportunities for the sales and letting sectors.

"This technology is not only a valuable asset for enhancing visual presentations but also serves educational and operational purposes, making it a must-have for any forward-thinking estate management business," he said. www.thegardencottage01.com



▲ The Garden Cottage in Hinckley uses a virtual tour to allow visitors to explore the space remotely

Book now for Scotland awards lunch

The CIOB in Scotland Awards Lunch 2024 will be held at DoubleTree by Hilton Glasgow Central on 11 October.

Guests can enjoy a meal, network with industry leaders and applaud achievements in the construction sector.

Chartered members and fellows who have achieved their designation this year will be recognised as part of the event.

The lunch will be hosted by Nicky Marr and guest speaker is comedian Keith Farnan. Register at www.ciob.org/events.

One to watch

Harry Mitchell

Project manager, McLaren Construction Group



What made you take up a career in construction?

I fell into the role quite unexpectedly. My best friend's dad had

a bricklaying business, so I started as a bricklayer and gradually moved my way up through the ranks. Over time, I developed a deep appreciation for the construction industry and the impact it has on shaping our communities.

What do you enjoy about the industry and what do you find a challenge?

I enjoy the nature of the construction industry, where every project presents unique challenges and learning opportunities. The collaborative environment and the satisfaction of seeing a project come to life are particularly rewarding. However, I find the industry's sometimes slow adaptation to new technologies and safety standards challenging. There is room for improvement in embracing innovation and enhancing building safety culture.

What change would you like to see?

I would like to see a shift in the industry's approach to building safety. Establishing higher safety standards and fostering a culture that prioritises safety at all levels are crucial. This requires ongoing education, better enforcement of regulations and a collective commitment to continuous improvement.

What are your career goals?

My career goals include advancing to a senior leadership position where I can influence major projects and drive innovation in building practices. Additionally, I aim to contribute to industrywide initiatives that promote safety, sustainability and efficiency in construction.

What do you do in your spare time?

In my spare time, I enjoy reading about the latest advancements in construction and technology. I also like playing football and spending quality time with family and friends.

Do you have 5 years of experience leading in construction?

Highlight your outstanding work and inspire others within the industry by becoming a CIOB Fellow. Fellowship comes with a globally recognised professional qualification and the post-nominals 'FCIOB', showcasing your prestigious status to clients and colleagues.

Ready to gain recognition for your expertise and create a better future for the built environment?

Find out more:
ciob.me/fellow



“Fellowship is more than just a title. It has opened doors to new opportunities, expanded my network and deepened my understanding of best practices. It has given me a platform to lead by example, to champion sustainability and ethical leadership, and to drive positive change within the industry.”

**Paloma Hermoso FCIQB, Associate Partner,
Whitebox – Ward Williams Associates.**



CIOB

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Institute of Building

▼ Local students try out work experience with Morgan Sindall



Morgan Sindall apprentices reshape work experience

Week opens student eyes to new possibilities

Morgan Sindall in Norwich recently put its work experience programme in the hands of its apprentices.

The contractor has been running the week-long programme for a number of years, but it has now been revamped by the apprentices.

The aim was to have young people inspiring other young people to consider a career in construction.

The week was co-ordinated and facilitated by Morgan Sindall's Norwich apprentices Fay Emery, Fatima Saidykhan and Joshua Nelson, who worked with local schools (UTCN, CCN and Paston College) to inspire future talent.

The students worked on a brief to design, cost and plan a project, introducing them to a variety of roles including architect, structural engineer and BIM manager. They also attended two site visits.

Emery says she was keen to get involved with the programme because of her own experience. "Work experience played a huge role in my career choice – and without it I

wouldn't be working in construction now," she said. "I had my lightbulb moment at 14, when I went on my first site visit. Once I put on all of my PPE and walked around in the mud, I knew it was the industry for me.

"We need to push more talented young people into the industry and change their perception of what it has to offer."

Saidykhan was keen to open people's eyes to the variety of job roles. "I would also like them to know the industry isn't only for white males; it's an industry for all talented people."

Nelson said: "The industry is struggling with a shortage of young people. Construction is not always advertised, or at the top of the school lists of industries to promote to students."

He added: "It was great to see that following the week we had many students who are now actively seeking a role in construction."

Following the programme, 10 out of 14 students asked for additional work experience placements. ●

NEWS IN BRIEF

Members visit Innovaré in Coventry
Learning how to combine sustainability, compliance and MMC was the order of the day for Northampton Hub members on a visit to Innovaré's state-of-the-art facilities in Coventry.

Innovaré is an offsite specialist delivering low-carbon structural and envelope solutions. It offers panelised offsite techniques to the education, health and residential sectors.

Nottingham Hub to visit Pilot House
The Nottingham hub will visit Pilot House in Leicester on 12 September.

The team at Henry Brothers and Angelo Cooper, construction PM from Leicester City Council, will provide an overview of the £13m regen project to complete in spring 2025.

Pilot House is a former factory on King Street. It will be transformed into 5,600 sq m of space for startups and growing businesses. See ciob.org/events.

Birmingham debate on dispute resolution
On 25 September, CIOB Birmingham and DGA will host a panel discussion, Preparing for Adjudication,

featuring experts in construction and dispute resolution. The panel will discuss avoiding and preparing for adjudication, followed by a Q&A session. See ciob.org/events.

CIOB members visit Derby Business School
CIOB members toured the new University of Derby business school in June. Attendees got to hear about its innovative design and sustainable materials and practices, highlighting the importance of environmental responsibility in construction.

Member spearheads SW growth
Inco Contracts, which has offices in the north west, south east and West Midlands, has appointed chartered construction manager Adam Bidhendi as regional director for the south west to lead the firm's expansion into the area.

Bidhendi, who previously worked for Kier Group, Bridgeport 360 and Lancer Scott, commented: "There is so much potential in this region. First step is having our own dedicated office and then we'll build a team."

Professionals rev up in karting competition
Companies across Kent came together for the annual Tomorrow's Leaders Maidstone Karting Cup in Sittingbourne.

Invvu claimed the trophy, with BAM and Goody Demolition battling it out for second and third place.


Other teams taking part were LASEBC, WW Martin and Willmott Dixon, along with individual contenders.

▼ Pilot House in Leicester



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This article was written by Premierline Business Insurance Broker, the trusted insurance partner for CIOB members. To speak to an expert about insurance for your business, call 0330 102 6158, or email ciob@premierline.co.uk.

Why it pays to have the right type of cover

Insurance broker **Premierline** explains how choosing the best insurance coverage for your business can pay off for construction firms

Essential insurance cover for

businesses in the construction industry could be tax deductible, which means that having covers like public liability insurance in place may be more cost effective than you think.

Public liability insurance protects clients who visit your premises or work closely with your employees on site.

Though it's not nice to imagine, a client could be injured while visiting a site as a result of negligence by one of your employees. Without the right cover in place, this could prove to be very costly to your business and your reputation.

When it comes to completing your accounts, did you know your public



Diary dates

Highlights of the CIOB Calendar for the coming month

CIOB Academic Summit: Creating an inclusive global community

► **10 September, 8.30am-1pm, online**
This annual virtual conference connects academics around the world. It aims to bring together academic leaders, researchers, policymakers and professional services staff within the built environment education arena, to share knowledge, and evidence agility, innovation and inclusivity.

Topics include EDI, ethics, quality and safety, skills gap, sustainability, and health and wellbeing.

See the list of speakers and register at www.ciob.org/events.

Site visit: Transforming Oxford Rail Station

► **10 September, 4-6pm**
In 2022, Kier was appointed by Network Rail to deliver the £65m main works package at Oxford railway station as part of the Oxford Corridor Phase 2 Project, now known as Oxfordshire Connect, to significantly improve both facilities and capacity.

The station is being expanded and the wider area upgraded. Come and see first-hand the work Kier is completing at this station.
Contact: ecatalano@ciob.org.uk

Site visit: Vaughan Road, Exeter

► **11 September, 2-3.30pm**
Vaughan Road in Whipton Village has been selected for comprehensive development of modern apartments around a communal garden. Over 65% of these new Passivhaus homes are 'affordable' and 60 homes will be available for social rent and for shared ownership, with priority lettings to local residents. Places are limited to 20, so please book early to avoid disappointment.

Contact: estreames@ciob.org.uk

Site visit: Pilot House, Leicester

► **12 September, 4-5.30pm**
See the work underway at Pilot House in Leicester. Meet the team

from Henry Brothers and Angelo Cooper, construction PM from Leicester City Council, who will give an overview of the project.

Pilot House is a former factory on King Street to be transformed into high-quality accommodation for startups and growing businesses. (See p64 for more details.)

Contact: gfloyd@ciob.org.uk

CIOB Awards Ireland

► **12 September, 6.30-11pm**

The CIOB Awards Ireland, featuring the Construction Manager of the Year Award (CMYA) Ireland and the Graduate of the Year Award Ireland, showcases the very finest talent in construction, recognising the achievements of individuals who have delivered some of the biggest, most innovative and complex projects on the island of Ireland.

The event is sponsored by Jan Janssens & Company and ICW.

Register at www.ciob.org/events.

Site visit: Dogger Bank Wind Farm

► **19 September, 9.30am-12pm**

Join us to visit the site of Hitachi Energy's HVDC Onshore Converter Station near Redcar, Teesside, part of the UK's first HVDC (high-voltage direct current) connected wind farm.

Dogger Bank Wind Farm is being built in the North Sea more than

130km from the Yorkshire Coast in three phases. Dogger Bank A and B phases will connect to the national grid near Beverley in Yorkshire, while Dogger Bank C will connect to the grid near Redcar.

The renewable energy project, capable of powering 6 million UK homes annually on completion, is a joint venture between SSE Renewables (40%), Equinor (40%) and Eni Plenitude (20%).

Contact: dmoore@ciob.org.uk

Site revisit: The Forum, Kings Quarter, Gloucester

► **25 September, 4-6pm**

The Forum is part of the £200m Kings Quarter regeneration being delivered by Gloucester City Council with Reef Group and the University of Gloucestershire at the heart of Gloucester City Centre. Kier Construction is the main contractor.

This 56,000 sq m area will consist of 43 apartments, a four star hotel, the Gloucester Transport Hub, cafes, bars, a gym, retail units, One and Two Cathedral View and a car park. Phase two of the development was completed this summer.

Contact: nbreakspear@ciob.org.uk

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



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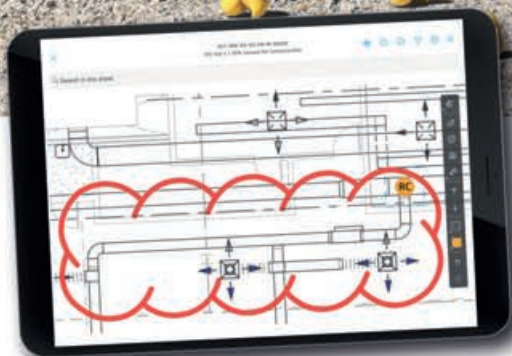
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