



STAND UP AND BE COUNTED

DAME JUDITH HACKITT ON REBUILDING PUBLIC TRUST IN CONSTRUCTION

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▲ Twisting Zaha Hadid design echoes desert sands

A building designed by the late Zaha Hadid in 2013, whose twisting form aims to echo the sands of the Al Sajaa desert in which it sits, has been completed. Drone photos reveal the headquarters of environmental management company Beeah Group in Sharjah.

Neo-Gothic stonework restored in school conversion

Developer Comer Homes established an onsite stonemasons' workshop to repair weathered and damaged stonework on the neo-Gothic Royal Masonic School for Boys in Bushey, Hertfordshire. The building, which has been converted into a 300-home residential development, was in a dilapidated state. A specialist team worked to retain as many original features as possible, including the hand-carved stone staircases, arch windows, flooring, fireplaces and exposed roof beams.

Framework provider Pagabo has launched the 'Feelgood Games' for construction workers. It promotes the value of exercise in maintaining good mental health



► Laing O'Rourke on schedule for new Everton FC stadium

A Laing O'Rourke construction worker assembles precast elements on the north-east corner of the new Bramley-Moore Dock stadium in Liverpool for Everton FC. Laing O'Rourke is on schedule with construction of the new stadium. It has manufactured many of the concrete columns and walls offsite in its precast factory.

Dr Phebe Mann in appeals role first

Chartered construction manager Dr Phebe Mann MCIOB has become the first woman engineer of ethnic origin to be appointed to the Upper Tribunal Administrative Appeals Chamber (Transport Jurisdiction) and First-Tier Tribunal General Regulatory Chamber (Transport Jurisdiction) by the lord chancellor.





BAM site hosts fashion shoot

A BAM construction site has provided the unlikely setting for award-winning Danish fashion designer and video artist Jens Laugesen's new collection. Laugesen's new film *In Recon/ Solaris* was shot in The Rowe, a 162,000 sq ft office development in Whitechapel, London E1.

Lovell supports Ride for Rugby challenge

Molly Willerton, assistant design manager at Lovell, will take part in the inaugural Ride for Rugby cycling challenge in July. She will be joined by Rachel Fianko, recruitment officer with construction training charity Building Heroes. The event is hosted by London Irish Women RFC in partnership with Building Heroes. It aims to champion the roles of women in both sport and the industry.





The new Building Safety Bill is currently passing through parliament. Are you and your organisation prepared?



- Yes, we're prepared (23.7%)
 We know what we need to do (33.3%)
- We're unsure how to prepare (43%)

The new building safety regime will raise the bar on competency requirements across the construction sector. Are you and your organisation ready for this?



- We have plans in place to improve our competency (29.2%)
- Yes, we're already taking steps to improve our competency (33.9%)
 We are unsure on what the
- competency requirements are (36.9%)

Only a quarter of construction firms are prepared for new Building Safety Bill

CM survey shows that more than a third of construction professionals are unsure how to prepare for new bill or how to get ready for new competency requirements



Only a quarter (23.7%) of construction professionals think that they and their organisations are ready for the new Building Safety Bill currently passing through parliament.

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That's according to a new survey conducted by *Construction Management* magazine, as the passing of the bill nears.

The government has described the bill, which follows the Grenfell Tower disaster and Dame Judith Hackitt's independent review of fire safety and building regulations, as one of the "biggest changes to building safety regulations in a generation".

The bill is expected to impact not only the design and construction of

The Building w Safety Bill is in al its final stages of passing through in parliament H

"higher risk" buildings but also the way in which they are managed.

Despite the bill's far-reaching impact, only 23.7% of respondents said they were prepared for it. Another third of respondents said they know what they need to do in advance of the passing of the bill, but a substantial 43% said they were unsure how to prepare.

Competency preparedness

When it came to the way in which the new building safety regime is expected to raise the bar on competency requirements across the sector, the picture was more positive. More than a third (33.9%) of respondents said they were already taking action, and another 29.2% said they had plans in place to improve competency. However, nearly 37% said they were unsure what the competency requirements were.

One of Dame Judith Hackitt's key messages to the construction industry in the wake of the Grenfell disaster was that company culture had to change. Earlier this year, she expressed "serious concern" over a lack of take-up by the industry of tools and frameworks designed to make high-rise residential buildings safer. Nearly five years on from the tragedy which claimed 72 lives,

Dame Judith Hackitt tells CM that construction needs to stand up and be counted. See interview, p14



What are your biggest concerns about your organisation's ability to deliver the requirements of the new building safety regime?



almost 37% of respondents to CM's survey claimed that there was "clear evidence" of culture change in their organisations. Another 31% confirmed that there are plans in place to change their work culture. Worryingly, however, nearly a third (32.1%) said the culture at their organisation is the same as it was before.

Clients are biggest obstacle

When it came to respondents' concerns about their organisation's ability to deliver the requirements of the new building safety regime, clients' lack of awareness was cited as the biggest obstacle (68.9%).

Other significant concerns centred around procurement still being based on lowest price (59%), industry culture (52.8%) and competency standards (50.3%).

The Building Safety Bill has passed through both the House of Commons and the House of Lords and is now in its final stages. A series of amendments are

Dame Judith Hackitt has called for the construction industry to change its culture. Is this happening in your organisation?

- Yes, there is clear evidence of a culture change in how we work (36.9%)• There are plans in place to change our work culture
- (31%)No. it is the same culture as before (32.1%)

currently being considered before it receives Royal Assent, which is expected at some point between now and July this year.

The survey is based on 186 responses from clients, consultants and contractors. Over 40% of respondents said they work in housing.

CM survey respondents on...

... their readiness for the bill

"We're principal designers and have seen quite a bit of contradictory information. We understand that elements of the Hackitt report have been removed from the bill. but we do not know what has been retained."

"As with all legislation, the devil is in the detail and we don't know exactly what will be in the final version."

"As a client institution we are reliant, maybe too reliant, on our suppliers to be fully aware of the bill and requirements."

"I have concerns across the sector in regard to competency. There seems to be a belief that training courses equal competence. There appears to be little by way of linking competency to capability."

"As the competency standards are still being developed for certain disciplines, it is difficult to be proactive in any meaningful way."

"We have a statutory duty to maintain our competency and we always took that seriously."

All responses were anonymised.

...on competence

Percentage of site-based workers who are female in the USA, compared to 1% in the UK



The logistics team of Tradeswomen **Building Bridges with Emily Thornberry** MP on their visit to London to plan the delegation earlier this year. From left to right: Noreen Buckley, Cindy Frank, Cassy Klewicki, Kelly McClellen and **Emily Thornberry**

forward to CIOB welcoming the delegation in June and hearing how Tradeswomen Building Bridges have succeeded in getting to the heady heights of between 10% and 13%."

During the visit, the delegation aims to learn about London's construction industry and build relationships for a two-way dialogue on improving the lives of women construction workers around the world.

The delegation is made up of electricians, plumbers, carpenters, machine operators and other workers. They will be hosted by the University of Westminster's Centre for the Study of the Production of the Built Environment (PRoBE).

The 2022 delegation events will include: a best practice workshop, where case studies of successful strategies for increasing women in construction are discussed: a discussion with Women into Construction; and a series of site visits to sites like Thames Tideway, Crossrail and HS2.

Cassandra Klewicki, from the United Brotherhood of Carpenters New York, said: "I'm joining the delegation because the single most important thing for making me successful as a carpenter was building a network of tradeswomen. They guided me and listened to me. I'm looking forward to expanding my network and showing other women CIOB vice president how to build theirs." ●



CIOB vice president promotes female trades with US group

North American delegation of 50 tradeswomen aims to share best practice during two-week visit

IOB vice president Sandi Rhys Jones is to welcome a delegation of 50 tradeswomen who work in site-based roles in construction in North America when they visit London next month.

The Tradeswomen Building Bridges delegation, which women from other countries in the world are also expected to join, will spend two weeks in the capital from 9-20 June, meeting workers, union leaders, policymakers and advocates.

Women make up about 10% of site-based workers in the construction sector in the USA, a proportion higher than the roughly 1% of the site-based workforce who are female in the UK.

Nonetheless, women in the USA have encountered many of the same barriers that women in the UK face, and the delegation aims to share best practice to create a more diverse and inclusive global network.

Rhys Jones said: "When working on projects such as Building Work for Women, which provided the all-important site experience to help women move from training into work, I found that contractors quickly realised that tradeswomen were a positive addition to their business and were keen to employ more.

"But the percentage of construction tradeswomen in the UK has remained stubbornly stuck at just 1%, so I am looking





Contractors have realised that tradeswomen are a positive addition to their business Sandi Rhys Jones,

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Year-on-vear percentage increase in the cost of wholesale forward contract gas as of 21 February 2022



UK energy strategy offers little respite for construction

Energy shocks should stabilise but we may see longer-term cost impacts from the war in Ukraine, writes Kris Hudson



While the UK's recently announced energy strategy promises long-term resilience and security, rising wholesale prices

continue to present a cause for concern in the construction sector.

At the start of 2022, we were already seeing the impacts of two years of supply chain disruption, and reduced gas stores following a cold winter in Europe in 2020/21, on fuel prices. These are now being exacerbated by geopolitical sanctions and the need to diversify energy or reduce consumption as a result of the war in Ukraine.

In March 2022 alone, the monthly indices for crude oil, diesel and premium unleaded increased by 99.4%, 33.8% and 30.5% on the year respectively. These increases follow an already strong upward trend since Covid-19 first hit the UK economy.

This is concerning for construction, with energy use counting for up to a third of the sector's manufacturing costs of materials and components. **Data from the Construction** Leadership Council (CLC) shows that manufacturers have increased prices by between 5% and 10% as of March this year, with the cost of the most energy-intensive products increasing by as much as a fifth.

The rise in prices will be acutely felt in the cost of materials which require energyintensive processes, such as bricks, ceramics, cement, plastics and steel

The rise in energy prices will be acutely felt in the cost of materials which require energy-intensive mineral extraction and treatment processes, such as bricks, ceramics, cement, plastics and steel.

Additional pressure is also being layered on construction's operating costs following the end of the red diesel tax exemption on 1 April 2022.

With governments across Europe working hard to steady the energy market, over time those costs should - in theory - stabilise after the initial shocks fade, with oil price fluctuations perhaps seeing a swifter transition back to normal than gas. However, we may yet see medium to long-term cost impacts from the war.

The fact is that Russian imports only account for around 8% of total UK oil demand and less than 4% of the UK's total gas supply. The real challenge will be the knock-on effects of increased competition for alternative energy sources. For example, the UK is dependent on gas imports from Norway, a market which could see much greater interest as others in Europe seek to curtail their over-reliance on Russian oil and gas, invariably increasing prices.

With limited opportunity to stem these rising costs, construction businesses need to brace themselves for a considerable period of instability.

Ensuring visibility of the market will be key to understanding viable alternative energy sources and where supply chains could be adjusted to mitigate risk. Above all, driving cost and productivity efficiencies elsewhere will be crucial to offsetting price volatility. Kris Hudson is an economist and associate director at Turner & Townsend.





Attribution of European gas imports to individual sources in 2021





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Nicky Rance Sir Robert McAlpine

Very simply put, construction is

about building things. But while the end result is ultimately plain to see – a new bridge, a shining office block or stadium – what is less visible is the team building that goes into successful projects. It is said that a happy worker is a productive worker, and construction sites are no exception.

That construction faces something of a productivity problem is by now well known. And while boosting onsite morale is not the sole answer – improvements in how the sector uses technology being equally key – it is, nonetheless, one of the key factors underpinning productivity. As research from Oxford University's Saïd Business School has found, workers are 13% more productive when happy.

How can an industry whose stock in trade is building go about constructing happy teams? Ultimately, there are two parts to the answer: the formal and the informal.

The formal

When it comes to formally creating teams, it is vital that everyone on a project understands what they are doing from the first day. It sounds obvious, but construction's recent history is replete with stories of delays being caused by a lack of understanding of who was responsible for what.

To create teams, then, those responsible for a site must clearly set out each individual's role, to avoid any duplications or gaps and define the team's ethos. Each person on site must also feel comfortable to effectively communicate any issues or necessary changes that may affect the project. The most productive team is the one that is



Is happiness the answer to construction's productivity problem?

Happiness is key to workers' productivity. Building teams as well as buildings is part of the key to solving construction's productivity conundrum, says **Nicky Rance**

The most productive team is the one that is able to communicate openly and work collaboratively towards the best end result able to communicate openly and work collaboratively towards the best end result. To quote Aristotle: "The whole is greater than the sum of its parts", and construction is no exception to this.

The informal

What are decidedly less clear are the informal considerations: it is one thing to create a team, another to create colleagues. Be it elevenses on site through to trips to local attractions and projects with schools in a site's vicinity, what we might call extracurricular activities are not a sideshow to the main project, but a key consideration. These activities not only boost team morale, but create real bonds that instil a drive to support one another to achieve their common goal.

What's more, engaging with the local community helps engender a real sense of pride in the project and how the team's handiwork will ultimately be used. Pride breeds purpose, and purpose breeds productivity.

There's a final consideration, too. What is needed is more than just the odd trip to the local. That's not to say such events don't have a place in the modern business world, but that true teams will be inclusive, and this extends to the events that are hosted. Here lockdown, forcing companies to look into non-pub based entertainment catalysed a sea-change in thinking, giving rise to an increase in volunteering activities.

And with research suggesting millennials will pick an employer based on their ethical credentials, such forms of entertainment will create productive teams not just for now, but for the future, too. • Nicky Rance is project director at Sir Robert McAlpine.



Caroline Gumble CIOB

Entering apprenticeships market is a natural step for CIOB

The CIOB is bringing the highest levels of competence and professionalism to construction apprenticeships. Caroline Gumble explains

Many of you will know that CIOB is

entering the apprenticeships market in England. Earlier this year, thanks to my colleague Steve Conopo, CIOB's apprenticeship manager, we were accepted on the Education and Skills Funding Agency (ESFA) register of end-point assessment organisations (EPAOs).

The latest exciting development is our new partnership with the University College of Estate Management (UCEM). CIOB and UCEM have teamed up to offer a degree apprenticeship programme which is also a route to chartered status as a construction professional.

Apprentices already on the Construction Site Management programme who are due to complete their end-point assessment in September this year will be part of the first cohort who can claim their apprenticeship certificate, degree and chartered membership status with CIOB.

UCEM launched its Construction Site Management degree apprenticeship in 2020 and the timing of CIOB's acceptance onto the register of end-point assessment organisations in England means all apprentices on the programme will now

be able to complete their end-point assessment with CIOB.

The Level 6 apprenticeship standards for which CIOB can now deliver end-point assessments are:

- Construction Site Management
- Construction Quantity Surveyor
- Design and Construction Management. The partnership between UCEM and

CIOB will support the first cohort of Level 6 Construction Site Management degree apprentices this year. As part of this partnership, CIOB is offering the option of becoming a chartered member, able to use the post-nominal of MCIOB, for all apprentices. The process has been designed to be relatively simple, focusing on mapping evidence of the apprenticeship on-programme journey towards membership requirements.

This is a natural step for CIOB - our qualifications are a mark of the highest levels of competence and professionalism, and we now bring that expertise to apprenticeship standards, offering a unique apprenticeship to CIOB chartership route.

I am also delighted to have UCEM as our first ever degree apprenticeship



Our qualifications are a mark of the highest levels of competence and professionalism, and we now bring that expertise to apprenticeship standards



partner. We have collaborated with them for many years and already run a joint-funded successful scholarship programme.

If you would like to find out more about CIOB's work to support apprenticeship, please take a look at the 'learning' section of the CIOB website: www.ciob.org/learning.

Feedback

CM 08/03 Sir lan Dixon Scholarship

I enjoyed watching Jamie Tong's presentation on his Sir lan Dixon Scholarship project.

Jamie's subject was utility strikes on construction sites, and how the

immense danger associated with (for example) an excavator striking an underground cable could be avoided or mitigated.

His project had real authenticity. It arose from his personal experience of such an event, it examined the circumstances that typically surround utility strikes, and it led to practical

recommendations for avoidance. And, impressively, it culminated in a real 'dragons' den' proposal for Jamie's own enterprise to address the situation in the industry.

Sir lan Dixon was a good friend of mine. I'm sure he would have been immensely proud of Jamie Tong's project, and I think he might feel (as I do) that it could be used as a

model for future applicants to his scholarship programme.

The continuing success of the scholarship, with the active support of Lady Dixon, is a model of how the work of an industry leader can continue long after his death. John Bale PPCIOB, professor emeritus, Leeds Metropolitan University



'Stand up and be counted'

Construction leaders and professionals need to rebuild the public's trust and confidence, says Dame Judith Hackitt. She speaks to **Will Mann**

> t is nearly four years since the final version of Dame Judith Hackitt's Building a Safer Future

was published. Her report, as chair of the Independent Review of Building Regulations and Fire Safety, was commissioned by the government following the 2017 Grenfell Tower fire.

At the time, she called for "a radical rethink of the whole system and how it works". So how does she rate the construction industry's response to her recommendations?

"Mixed," is her reply. Hackitt, who chairs the Industry Safety Steering Group (ISSG), is speaking to *CM* ahead of her appearance at the CIOB's Safer Buildings conference later this month.

"The third annual report from the ISSG is very clear on this," she continues. "We have seen some excellent examples of leadership, where organisations have stepped up and made changes without waiting for regulation to make them do it.

"But there are still too many who are waiting for the Building Safety Bill to come into force before they take action.

"Even in cases where third sector bodies have done all of the legwork to set up new frameworks – for example, the excellent competence work led by [Construction Industry Council chief executive] Graham Watts – the construction industry is not taking the steps which only they can take to train their own employees and drive the need for competence throughout the supply chain."

She feels that "some of the initial reluctance was undoubtedly driven by a hope that new regulation would not happen at all".

"No one was prepared to act," Hackitt says, bluntly. "Then came the excuses – we can't change until we see the detail of what is required, we can't do the work to put things right because we can't get PI (professional indemnity) cover – and so on.

"It is so the case that the level of fragmentation in the industry is a barrier to change – everyone waits for someone else to take the lead." However, Hackitt senses the mood may have changed. Dame Judith
 Hackitt chairs the
 Industry Safety
 Steering Group

"Things do now appear to be speeding up as the Building Safety Bill gets closer to Royal Assent," she feels. "The construction industry is waking up to the reality that this is really going to happen.

"I am delighted to hear only this week that more than 300 organisations have now signed up to the Building a Safer Future charter and a similar number to the Code for Construction Product Information. I think this is the start of a real build-up of momentum – let's hope so!"

Shocking and shameful

Rumbling on in the background, as a frequent reminder of the construction follies that led to the Grenfell fire, Hackitt's report and the Building Safety Bill, is the ongoing inquiry into the tragedy itself. She has been shocked by what the proceedings have revealed.

"The evidence being uncovered by the inquiry is shocking and also shameful," Hackitt says. "I don't know how some of the people live with themselves on the basis of what they have admitted to. ►

ЫХ

"Sadly, what it tells me about the industry's culture is that my diagnosis four years ago was right. There is a lack of ownership and responsibility, the system is gamed, and corners are cut wherever possible.

"But I think some of the evidence points to practices that were – and may still be – worse than I thought."

The Building Safety Bill has undergone many amendments since it was first presented to parliament, but Hackitt says that, overall, she is "satisfied with the shape and content".

"It has stayed pretty close to the 53 recommendations I originally made," she says.

"I am also pleased to see the recent developments which address the issue of 'Who pays?' for remediation of defective work on existing buildings. I have always believed that it was wrong for those who bought in good faith to have to pay for remediation and it should not be for the taxpayer to fund the remediation of shoddy work either."

Responsibility for safety

One amendment that raised eyebrows at the end of March was the removal of the specific role of building safety manager from the bill.

However, Hackitt says: "I think people should read the amendment carefully before getting too excited. The specific role may have been removed and replaced by a more flexible approach but the requirement to appoint a responsible person with responsibility for building safety management is still there. Individuals will still need to be trained to be competent to carry out the function."

On the question of whether the bill will drive the culture change in construction that she has called for, Hackitt is circumspect. ►

Dame Judith Hackitt on...

...the Grenfell Tower Inquiry



The evidence being uncovered by the inquiry is shocking and also shameful. I don't know how some of the people live with themselves on the basis of what they have admitted to.

...industry culture

...remediating existing buildings



I have always believed it was wrong for those who bought in good faith to have to pay for remediation and it should not be for the taxpayer to fund the remediation of shoddy work either.

...building safety managers



It is so the case that the level of fragmentation in the industry is a barrier to change – everyone waits for someone else to take the lead.



The role may have been removed but the requirement to appoint a person with responsibility for building safety management is still there.

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"Legislation will change behaviour and make people do the right thing, but legislation will not change the culture on its own," she says.

"That's why the Building a Safer Future charter is so important, and it is why we need leaders and professionals in the industry to recognise the need to rebuild the public trust and confidence which has been lost.

"I think that is really very simple. Stand up and be counted for doing the right thing – that's what leaders should do. If I were in the shoes of construction professionals, I would want to make it as clear as possible that I distance myself completely from the appalling practices being laid bare every day in the Grenfell Tower Inquiry."

New regulatory bodies

Looking ahead to the rest of year and into 2023, Hackitt says she will be working closely with the industry's new regulatory bodies – the Building Safety Regulator and the National Regulator for Construction Products – to support their transition process from shadow into operational organisations. "It was always the intention that ISSG would hand over its activities to the new regulators once they were fully up and running," she says. ▲ Dame Judith Hackitt: "Legislation will not change the culture on its own"

Curriculum vitae: Dame Judith Hackitt DBE

• Current roles: chair, Industry Safety Steering Group; government adviser, Building Safety Regulator; non-executive director, HS2; chair, Make UK.

• Appointed chair, Independent Review of Building Regulations and Fire Safety, following the Grenfell Tower fire in 2017; published its final report, *Building a Safer Future*, in 2018.

• Chair, Health and Safety Executive, 2008-2016.

• Worked for Exxon Chemicals for 15 years, the Chemical Industries Association and the European Chemical Industries Council.

• Graduated from Imperial College, London, in Chemical Engineering.

 Honorary fellow of CIOB, fellow of the Royal Academy of Engineering, fellow of the Institution of Chemical Engineers.

• Appointed Dame Commander of the Order of the British Empire (DBE) in 2016.

"One additional specific area of focus for us over the next year will be on the finance and insurance sectors," Hackitt adds. "They need to recognise the important role they have to play in creating the right culture by being able to differentiate between those who are doing the right thing and those who aren't.

"At the moment, their approach is too much in the space of being overly cautious across the board. There is a real opportunity for them to be part of accelerating the shift to the right culture."

For more information on the CIOB Safer Buildings conference, go to: https://saferbuildings.ciob.org.



architectural acoustic finishes

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Construction transformed?

Four years of innovation and £420m of private and public investment: has the Transforming Construction Challenge transformed construction? **Justin Stanton** talks to some of those involved

Construction: a more efficient and greener future. This is the journey of the Transforming Construction Challenge, the public-private initiative founded in the summer of 2018. Its four-year mission: to accelerate the shift in construction towards manufacturing and digital processes and a value outcome approach; to achieve what no industry change initiative has achieved before!

Run under the auspices of UK Research and Innovation (UKRI), the challenge saw £170m invested from the public purse, matched by £250m from the construction industry itself. The investments were based on three central challenges: moving to a manufacturing approach; embracing digital technologies; and shifting focus to maximising whole-life value of assets. The targets were:

- projects delivered 50% faster;
- whole-life costs reduced by 33%;
- lifetime emissions slashed by half; and
- productivity raised by 15%.
 As part of the challenge,

more than 200 organisations – clients, contractors, specialists, manufacturers, start-ups and academia – worked on nearly 50 distinct construction projects.



As part of the challenge more than 200 organisations worked on nearly 50 construction projects Among those projects were the likes of: Landsec's Forge office development in Southwark, south London, built using a platform design for manufacture and assembly (PDfMA) system (*CM* March 2020), and the Laing O'Rourke-led team's use of augmented reality and virtual reality to drive improvements in quality assurance on the Hinkley Point C project (*CM* May 2021).

The challenge also enabled the publication of the Construction Playbook and the Transforming Infrastructure Performance (TIP) Roadmap to 2030 – the latter included the refreshing of the ►

£170m invested in the Transforming Construction Challenge from the public purse was matched by £250m from the industry

250



Keith Waller, programme director Construction Innovation Hub



What is Transforming Construction's greatest achievement? The collaborative ethos that has been developed and everyone's willingness to deliver innovative, valuebased solutions to the challenges we face as we work to transform the sector.

We've developed technical solutions that meet the key ambitions of the challenge, be they supporting digital, value or manufacturing. We've helped create the right enabling environment – policy, standards, regulations – that allow innovations to be deployed. We've worked closely with government – the *Construction Playbook*, procurement reform, *TIP Roadmap* and others – to enable clients and policymakers to be able to adopt such solutions as they are developed.

We have demonstrated how these solutions support ambitions for net zero, productive growth, levelling up, safety and more – delivering real value, better services, better outcomes.

Our three enablers are: a solution that meets a need; a client willing to ask for it; and a market ready and able to deliver it.

What should the industry do next?

We still don't have the depth of capability and capacity in the market that we need. But this is growing and will continue to do so if we maintain the collaborative, innovative spirit we've seen.

If clients choose value, not cheapness, we can avoid a transactional race to the bottom. Government and clients need to show leadership, build confidence and behave consistently. They need to follow the ambition of the *Playbook*, *TIP* and the strategic objectives of the challenge.

We must continue to develop value-based solutions to the challenges we face, embed them at scale and build capability and capacity in both clients and industry.

Sam Stacey, challenge director Transforming Construction



What is Transforming Construction's greatest achievement? I think our greatest achievement is the systems change approach that we have taken to transforming construction.

By understanding the need to define value and the platform approach, prove platform methods and shift procurement, we've been able to get all parts of the system to work together to achieve increasingly impressive results.

We've laid the foundations for genuine change through every step in the construction process – from design, through manufacturing and site, to use – and for a range of building types. This will unlock powerful forces of innovation that until now had been held back by fragmentation.

Which project or output surprised you and why? Something I didn't expect to see, and has been incredibly effective, is the HIPER Pile project. HIPER Pile has transformed our thinking about foundations. Keltbray, Converge, DB Group and Arup have turned passive piles that only bear load into a system that delivers greater value to a building throughout its life cycle.

HIPER Pile uses a hollow impression-pile design that increases skin friction, plus lightweight cement-free concrete, to provide the same capacity with less digging. Smart sensors are incorporated to monitor performance, and the hollow cores are used to integrate heat-exchange pipes to provide the building with heating and cooling.

What should the

industry do next? Industry really needs to build on the foundations laid by the challenge – by committing to platform systems, data-driven processes and net zero innovations at scale. This is a once-in-a-generation opportunity.

We can achieve a UK construction system that delivers value for everyone concerned – from the supply chain to clients and the people using buildings and infrastructure.

The Transforming Construction techniques will rid us of much of the waste endemic to construction today – wasted labour hours, wasted energy and wasted materials. This will mean lower costs, lower emissions and faster delivery. The challenge played an important role in the development of greater and better-quality collaboration across

government's BIM mandate, notably renamed to focus on information management.

the industry

Two months ago, judgement was passed on the challenge's output and impact: the evaluation, by BMG and Frontier Economics, found that the challenge "played an important role in the development of greater and better-quality collaboration across the industry".

The evaluation found the challenge was instrumental in increasing research and development funding among firms engaged in it. It identified a number of early signs of improvement in terms of build time, construction costs and labour hours as a result of the challenge's influence.

CM gathered reflections from challenge director Sam Stacey and Construction Innovation Hub programme director Keith Waller, plus representatives from challenge participants at opposite ends of the scale, Mace and Forster Roofing, a Scottish SME roofing specialist.

Forster Roofing's system combines digital tools and manufacturing systems

Advancing roofing technology

Bruce Raffell, commercial director at Forster Roofing, tells **CM** how the SME's Advanced Roof Tiling System works



Forster Roofing is an SME that focuses on roofing and solar panel services in Scotland. It was involved in the Advanced

Industrialised Methods for the Construction of Homes (AIMCH) project with Stewart Milne, Barratt Homes and L&Q Housing Trust.

Their vision was to deliver 120,000 homes for the same or less cost than traditional methods, and built 30% quicker by embracing improved digital systems and offsite construction methods.

Forster, in partnership with the Manufacturing Technology Centre, developed its Advanced Roof Tiling System, which has the potential to reduce installation times by around 30%, in turn increasing productivity by around 50%. This is achieved by reducing the complexities of the tiling process using a combination of digital tools and manufacturing systems. Forster also tested augmented reality technologies to streamline the process of identification of materials.

As a SME, what was it like for Forster Roofing to be involved in a major industry initiative? Being part of the AIMCH project really has been transformational for our business. We have been able to bring an innovative idea we had back in 2017 – our Advanced Roof Tiling System – to life, which wouldn't have been possible if we had not been part of this project.

We have had the opportunity to work alongside some of the major players in the new-build housing industry across the UK and gain access to ground-breaking R&D expertise to develop our idea.

What's the most important output from your project so far?

Through working with the partners, we have been able to use the mathematical factory model tool developed by the project to develop a footprint for our prototype factory, which we are looking to relocate to by this summer. We have also placed the order for our first prototype manufacturing cell, which is now in production, as we move into the world of manufacturing for the first time.

Development of our future enterprise resource planning (ERP) system is at its closing stages. We also managed to increase the scope of the project with the introduction of a proof-of-concept augmented reality solution for roof tiling and solar PV installation that we hope to industrialise in the future.





Mission control at Mace

Beth Houlgrave, senior innovation manager at Mace, talks to CM about its 'Production Control Room'



The team of Mace, 3D Repo, Imperial College London, Mission Room, UCL Bartlett School of Construction & Project

Management and eviFile recognised the key issue for mega-projects: that the complex teams involved don't always have access to the same detailed data at the same time, and thus, under time and cost pressures, decisions are made without the latest data – leading to inefficiencies, delays, rework and potentially significant cost overruns.

The solution: a production control room, inspired by NASA's mission control centre, that provides construction teams with detailed, accurate data at the touch of a screen, so they can conduct a full digital rehearsal of a project and know exactly where they need to be, when and with what materials and resources.

The mission control blends 3D BIM modelling with the 4D programmes and onsite time-lapse cameras to track the stages of the project's life cycle from design coordination to construction and delivery. The large touchscreens, developed by Mission Room, provide an interactive window into the backend software developed by 3DRepo and eviFile.

It delivers data-driven dashboards on project scheduling, work assignments and progress against time and budget. Issues on site can be logged and appear on the dashboard in real time. And it integrates with other systems, including drawing on live traffic and weather data that could impact on project delivery.

Among the benefits are 50% more information and daily briefings reduced by 2.5 hours per week, resulting in a 40% reduction of time spent for planners alone.

What's the most important output from your project so far?

As a large project with more than 15 core contributors across the partners, there have been 25 different components explored, developed and combined to demonstrate a wide range of control room applications. We have deployed four control rooms: two on a construction project, one on a consultancy project, and one HQ control room for managing the Mace portfolio.

Looking back, the most important output was the establishment of the data model that enabled integrations between different software systems. This became the magic that proved we could get systems 'talking' to one another for greater insights and, most importantly, repeat it on other projects.

What's the key learning that you've taken from your project?

The key learning from our project would be:

 Managing change with your human end users will be the biggest uphill struggle – you have to create quick-win benefits that they can see and feel quickly to maintain engagement. And don't underestimate the amount of time training people in new tools will take.

This key end-user engagement will also influence the quality of your data. Helping people understand the importance of completing their data inputs correctly pays off, and it doesn't hurt if they see benefit from the output results too.

• Find the gatekeepers for your project/company data as soon as possible.

• Share results faster – something you internally deem a 'first draft' may be quite impressive to someone else and can catalyse support and extra resource.

• In-person is always better than online for collaboration.

Mace's production control room was inspired by NASA's mission control centre



Among the benefits are daily briefings reduced by 2.5 hours per week Beth Houlgrave, Mace



How better data can benefit residents

Housing associations trying to set up a 'golden thread' of asset information are beginning to think differently about how they interact with customers. **Denise Chevin** finds out more from Chris Lees, chief executive of tech consultant Dataclan and a member of the BRAC Golden Thread Working Group



he need to develop digital repositories of information about their housing stock is having

a galvanising effect on housing providers. It has encouraged the more forward-thinking to explore how sharing data across asset management, housing management and development can benefit their residents while also streamlining their operations.

At the centre of this drive is data standards specialist Chris Lees, who is working with several housing providers to develop systems that link together information from different departments.

Lees has been collaborating with other data standards through buildingSMART and the UK BIM Alliance. He began working in housing with projects for the Housing Associations' Charitable Trust (HACT).

"I noticed that the various departments in housing tend to work in silos," he explains. "But people have started to say: instead of thinking about housing management and assets, let's think about the customer. Any housing provider will tell you, if you're looking at customer satisfaction, the number one problem that customers will report is repairs. So that brings together the asset world and the housing management."

The demands of the Building Safety Bill for a golden thread of information, and housing providers' own desire to ensure the safety of residents in the aftermath of Grenfell, is driving the desire to use data better.

Golden Thread Working Group

Lees is a member of the Golden Thread Working Group of the Building Regulations Advisory Committee (BRAC), which is establishing protocols for the golden thread. But he stresses we don't know yet precisely what the full and final details will be.

"Putting aside for a minute what the legislation says, the problem we're trying to solve is to keep people safe and to do that we need to be able to rely on the information that





You have got to get those data models right. And you've got to make sure that the systems you're using are using those data models Chris Lees, Dataclan we have about the building," he says. "In many cases, we either don't have that or it's impossibly hard to find."

Lees points to the "crazy" situation where project building information is handed over in boxes full of files to the client, which then commissions a surveyor to tell them what's in the building: an enormously expensive and evasive process.

He stresses the importance of handing over design and construction information to the client in a digital and structured format, using the standards prescribed in the BIM standard ISO 19650: OSCRE, IFC or COBie. That also means setting out these essentials in employer's requirements.

Lees notes: "I have demonstrated that actually IFC and OSCRE standards are interoperable – so if the construction team is using IFC and the client is using OSCRE, that's fine."

If housing providers are to harness their data to boost safety and join up 'customer functions' with 'asset type functions', then standardising data internally is also important.

Fire safety flagged up

Lees paints a future scenario of how asset and customer data can combine to boost safety: "If a customer rings up to report a door is not closing, the customer service agent should be able pull up details about that person's home in 3D. Through a simple triage process, they can establish which fire door the customer is referring to and establish if it's a critical part of their fire safety system."



Collating all this information is starting to happen on new build, but Lees knows this will take longer for existing housing. With organisations he is currently working with, including Hyde and BIM4Housing Associations, this means building structures for data.

"You have got to get those data models right," he asserts. "And you've got to make sure that the systems you're using are using those data models. And then get machines to the heavy lifting and make sense of such large amounts of data."

He adds: "This is the big cultural shift. There's a mindset that thinks information management is about allowing people to find the data they want. But that's only a part of ▲ Housing associations are starting to collate information on new build the solution. When customers log a repair, we need to know if it's part of a fire compartment, who installed it, when it was last inspected, and we know where the certificate is for its commissioning."

Machine learning

If AI is to be part of the solution, again it's about getting data in a standardised format so that it can be read by a machine, says Lees.

As part of this transition, he says housing associations need to upgrade their software, developing their own systems with suppliers, or, increasingly, adapt application platforms like Microsoft Dynamics to their needs. Cyferd, a 'low-code/ no-code' platform, is partnering with one of his housing association clients.

The social housing sector is still in the early stages of its digital information journey, Lees believes.

"A lot of the medium-to-large housing providers are addressing the safety challenge very effectively. People know that they've got a tonne of work to do. There is some anxiety about getting it all done fast enough.

"I worry for the smaller housing providers, who still may have high-rise in their portfolio, who are not going to have the resources to buy and customise solutions like Dynamics 365. They will be relying on suppliers, some of whom are making extraordinary claims, such as their software is 'compliant with the golden thread for building safety'. But as we know, this has not even been defined yet."



he Queen Elizabeth Hospital (QEH) King's Lynn in Norfolk is undergoing a modernisation programme and digital construction is set to be at the heart of that.

QEH was built as a RAAC (reinforced autoclaved aerated concrete) hospital in 1980. Today, 79% of the hospital buildings have RAAC planks which require ongoing monitoring and emergency repairs. In 2021, the organisation was awarded £20.6m in emergency funding, enabling it to install 'failsafe' roof supports, to reduce the risk of RAAC plank failures, and to undertake other modernisation projects. These include a new state-of-the-art endoscopy unit.

The two-storey, 3,913 sq m development will modernise facilities and enable all endoscopies to take place in one building. The new unit will also free up space in the main hospital so the organisation can start installing the roof supports across the first floor.

"The endoscopy unit's development is critical to the overall programme delivery and therefore speed and simplicity are key," explains Garry Fannon, director with the trust's multi-disciplinary consultant Exi Group.

"We took time to understand the challenges of the current physical

 CGI of the modular endoscopy unit at QEH
 Ward layouts in the federated BIM model

MEP clash resolution in Navisworks estate and the time restraint inherent in the project. For these reasons, we decided a modular solution was the best option. Over 90% of the unit will use modern methods of construction (MMC)."

Exi is also working with the trust to develop its digital capability.

"The organisation recognises that its digital maturity is an area requiring investment and sees the new endoscopy unit as a vehicle to test and trial new innovations and technology," Fannon says.

"Digital working will complement the MMC approach. The project will be in line with the digital aspirations set out in the government's 2019 health infrastructure plan (HIP)



BIM allows the modular contractor to achieve design approval a lot quicker

Garry Fannon, Exi Group

and the 'digital blueprint' published in 2020 to steer the design and construction of hospitals."

The project is following the UK BIM Framework.

"Exi digital management wrote the project's exchange information requirements (EIR) and asset information requirements (AIR) on behalf of the trust," explains Fannon. "The design team of main contractor MTX delivered models with asset data in line with these requirements."

Clash detection process

"MTX's design team also worked with digital consultant BIMBox on the BIM coordination, to increase efficiency and accuracy and reduce risk in the design process," Fannon continues. "The clash detection process captured and resolved all major design issues before enquiry documents were sent out to the modular supply chain. The HVAC design team were able to coordinate the network of services into small cellular rooms first time."

The BIM process helped modular supplier Kingston to generate the modular design, Fannon explains.

"One of the challenges for a modular contractor is coordinating the design before they go into manufacture," he says. "Delivering a coordinated design that has been through a BIM process allows the modular contractor to achieve design approval a lot quicker and thus start manufacturing sooner." Installation of the 53 modular units, each typically 3.6m wide and 15.5m long, began in February 2022. To monitor quality, MTX used

360 photography platform Multivista, offering the contractor and the QEH team a full audit of the construction process.

"Multivista visits the site every two weeks and takes images at the same point," says Fannon. "The platform allows the user to look historically at each room and interact with the imagery."

The new unit will include smart technology, which has been designed with the clinical teams and will be installed on site. This includes interactive information screens, supplied by Clevertouch, and smart room sensors which capture information affecting the patient experience, such as light and temperature levels, and how frequently a room is used.

The project is due to complete by the end of June 2022.

Fannon says: "This 'digital flagship' is the result of a collaborative





Project team

Endoscopy Unit, Queen Elizabeth Hospital. King's Lynn Client: Queen Elizabeth Hospital King's Lynn NHS Foundation Trust Value: £13m Client team: Exi Group (project management, design, digital management) Programme: 11 months Contract: JCT with amendments Contractor: MTX Contractor design team: IBI (architect); DSSR (MEP); Rossi Long (structural engineer); BIMBox (BIM coordination) Modular supplier: Kingston



Over 90% of the unit will use modern methods of construction (MMC)

▲ The Kingston modules are craned into position on site

process involving QEH's digital team, clinical staff and supply chain partners. The outcomes will support QEH's ambition to improve their digital maturity and estate management strategy."

Exi Group is also developing an estate-wide digital-first approach strategy with QEH that will deliver a more efficient facilities management service. "This will allow the QEH estates team to move away from their analogue estate and allow computer-aided FM to be trialled," says Fannon.

Meanwhile, QEH is bidding to be one of the eight new hospital schemes announced by the government last year. The plans are for a single-phase new build or a part new build and part refurbishment. If approved, the digital learning from the endoscopy unit will be invaluable for the new hospital project.





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Digital Construction Week is back

Europe's leading innovation and technology event for the built environment returns to ExCeL London on 18-19 May 2022



ver two days this May, Digital Construction Week (DCW) will return to offer insight and inspiration that will help the construction industry build better. The show is a must-attend for anyone who wants to get up to date with the latest innovations revolutionising the built environment. Visitors will meet over 150 big-name brands and cutting-edge start-ups showcasing the latest tech, tools and solutions for digital construction. Plus, they'll hear from the industry's brightest minds and get up to speed with key trends in the free-to-attend education programme featuring 300+ expert speakers. ▲ Hexagon will again show Boston Dynamics' agile robot Spot And this year the show is putting the spotlight on one of the industry's most pressing issues – net zero strategy and the move to decarbonise the built environment – with the introduction of a brand-new theatre.

New Net Zero Stage

DCW co-founder Ollie Hughes explains: "We're excited to introduce the Net Zero Stage sponsored by Autodesk at DCW this year. We're working in partnership with independent industry group Zero to produce a two-day programme packed with exciting and informative sessions."

James Bowles from Zero comments: "Construction of our built environment accounts for an estimated 12% of all CO₂e emissions. We need to change this. We need to scale low carbon materials and methods of construction. We need to quickly embrace new ways of working and drive adoption of technologies that reduce emissions. We need to use digital tools to make carbon visible and accountable to project teams. We need to reduce the emissions released from material extraction, transportation, processing, and all construction activities.

"Zero is a growing industry group that wants to support the drive to low carbon construction. We're excited to partner with DCW to deliver a series of presentations and panels in at this year's show.



The Net Zero Stage will include presentations from leading organisations, exemplar projects and exciting new technologies. We're working hard to create original content and see things differently."

Hughes continues: "Sessions on the Net Zero Stage will focus on how digital tools, methods and skills are improving the performance of projects and leading to lower emissions. And how maximising DfMA at renewably powered facilities can move us towards net zero emissions. They'll also explore material selection, construction plant, equipment, labour and transport, and the role of technology and digitalisation in these areas."

Expert-led education programme

As well as the Net Zero Stage, DCW features eight other theatres that focus on some of the key areas shaping digital construction, including information management using BIM, geospatial, visualisation, digital transformation and more. The programme is packed with 160+ hours of free-to-attend content delivered by expert speakers from across the built environment.

The Main Stage hosts high-profile presenters and curated panel discussions covering the industry's most pressing issues. This year the programme includes speakers from Bryden Wood, Construction Innovation Hub, the Government & Industry Interoperability Group (GIIG) and Turner & Townsend, with more details to be revealed soon.

The People & Change Theatre, which focuses on the human side of business transformation, will also return to the show for a second year. Sessions will cover topics including behavioural change, how to embrace new ways of working, using tech to engage and communicate with staff, strategies for inclusivity, diversity, collaboration and wellbeing in the workplace.

DCW is also partnering with the Construction Innovation Hub, the Government & Industry Interoperability Group (GIIG), the UK BIM Framework, the UK BIM Alliance and Building Smart to bring visitors



Panel discussions will address the industry's most pressing issues

In association with



It's more important than ever that the industry gets together to connect, collaborate and innovate Ollie Hughes, Digital Construction Week

New products and emerging technologies will be on display two brand new theatres offering the latest thinking in information management. More details will be announced soon.

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CONSTRUCTION

Cutting-edge innovations

It's not just in the theatres where the latest industry innovation will be in the spotlight. The exhibition at DCW will showcase the cutting-edge products that are driving change in the built environment. Visitors will see first-hand the solutions revolutionising construction using emerging technologies including digital twins, augmented reality, information management, automation and AI, DfMA, robotics and more.

The list of inspiring brands that will be in attendance includes Alice Technologies, Autodesk, Bluebeam, Deltek UK, Mission Room, OpenSpace, PlanRadar, Procore, Revizto, Scaled Robotics, Unity Technologies and many more. Visitors will enjoy exciting reveals and hands-on demonstrations, with Hexagon back at DCW once again with Boston Dynamics' agile mobile robot Spot and a series of exclusive launches.

Hughes concludes: "It's more important than ever that the industry gets together to connect, collaborate and innovate. We're working hard to curate a stand-out event that acts as a platform for change by connecting decision-makers with those developing transformative technologies for digital construction. We hope you can join us this May and be part of the future of the built environment."

Digital Construction Week takes place at ExCeL London from 18-19 May 2022. For more information and to register for a free trade ticket, please visit www. digitalconstructionweek.com.

Scaling digital solutions for any organisation

Keeping up with fast-evolving technology in construction by installing new software systems needn't be expensive, even for SMEs, says James Chambers

he events of the last two vears have done much to push technology forward in the construction sector. Organisations are actively investing in digital tools and, more crucially, skills. And, whatever the strategic goals of the business, there are solutions that can make a difference.

No matter the size of the organisation and its stage on the digital journey, some key tasks must be tackled right at the start, namely building your understanding about digital tools and internal skill sets, and carrying out a market assessment of what is available. Only then can you think about implementation within your organisation.

Any size of business can join in

Construction SMEs are facing significant pressure, especially with the current issues around material shortages and extreme price volatility. But implementing new software does not have to involve huge expense. Small, simple tools can deliver significant improvements.

The first step is for clients to look at their overall strategy. What are they trying to achieve as an organisation and how can technology help them to reach their desired outcomes? Being clear about this means that they are

more likely to implement the right solution, avoiding unnecessary cost and project complications.



At this point they can consider the scale question. Has a technological solution been found that works now and can be adjusted as the business grows? Sometimes the only way to know this is to work with a technology provider who will partner with the business and is able to adjust their solution to fit the culture and needs of the business.

This partner must be able to take businesses from initial quick wins to demonstrate early Return on Investment (ROI) before helping the organisation to become more advanced over time as a level of digital maturity is achieved.

Implementing new software does not have to involve huge expense. Small, simple tools can deliver significant improvements

Managing the journey

Organisations must also know how to engage with their people and their supply chains. Without buy-in from the full project team, it is difficult to achieve the expected benefits.

For example, public sector organisations and large asset owners can use procurement to drive the behaviours and technology solutions that they want to see. A robust communication plan targeting both the internal team and supply chain team can ensure that this results in positive adoption rates.

It is also important for organisations to understand best practice for when a solution has been implemented. There is a huge focus on data management, both in terms of accessibility within organisations and in its ability to be shared along the 'golden thread' (from design through to construction, handover and O&M). Organisations which think about creating standards around the technology or solutions at the start of the process will often find accelerated rates of adoption, a greater return on investment and other additional value.

Software is perfectly placed to build audit trails, spot and manage risks, ensure compliance and ultimately drive project learnings to make projects more efficient, better quality and achieve better value. Working with the software provider to set relevant KPIs and translate important workflows is a must.

Whatever the strategic goals of the business, there is software that can make a difference. Start small, with simple tools and it will not be long before significant improvements are achieved and companies can start on their journey towards digitisation. James Chambers is regional director, UK and Ireland, Bluebeam.



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Managing occupational health risks in archaeology

Archaeology is a physical job with the potential to cause occupational health problems. New tools and techniques can reduce the risk of harm and boost productivity. This CPD explains more

 Activities that can lead to physical health problems include bending and crouching





ommercial archaeology is a relatively new discipline in the UK. Though commercial digs at development sites took place in the 1970s and 1980s, big changes came in 1990 with the introduction of *Planning Policy Guidance Note 16: Archaeology and Planning (PPG16). PPG16* said that developers, rather than the state, had to pay for archaeological investigations associated with developments that required planning permission.

Since then, the scale and scope of archaeological investigations linked to construction projects has grown, particularly in relationship to major infrastructure programmes. Headline projects include Crossrail, Aberdeen Western Peripheral Route, London Olympics Park, A14 Cambridge to Huntingdon Improvements and Tideway.

Just like any other specialist contract on a construction site, archaeological works are governed by the Health and Safety at Work Act 1974 (HSWA) which places a duty on all employers "to ensure, so far as is reasonably practicable, the health, safety and welfare at work" of all their employees, and persons working on their premises. However, basic safety considerations are often given far more attention than health ones.

What are the risks?

Musculoskeletal disorders (MSDs) are among the most common health problems among construction workers, accounting for 54% of ill health. They are also the biggest risk for archaeological workers.

Manual handling on archaeological digs can lead to immediate damage to tendons and muscles, or to longer-term MSDs which can prevent work. Activities that can lead to physical health problems include bending and crouching, stretching and reaching, heavy lifting of equipment and environmental samples and pushing wheelbarrows full of earth.

A skeleton

excavated at St James's Gardens

in September 2020

Repetitive use of

small hand tools

can lead to upper

limb disorders

Repetitive work and working in awkward positions can lead to problems that affect the arms, fingers, shoulders and necks. The construction manager should work with the archaeological contractor to make activities as streamlined and ergonomically friendly as possible



In addition to health risks, slips, trips and falls can be prevalent on archaeological digs, since people are often moving around site to find tools and equipment.

What action should be taken?

The first step is to carry out a risk assessment to work out what the occupational health risks are. The construction manager should then work with the archaeological contractor to make the activities as streamlined and ergonomically friendly as possible.

For instance, on a large site, such as the HS2 enabling works in Area South (see case study, p36), ►



Over 40,000 bodies were exhumed at St James's Gardens, a burial ground between 1789 and 1853

40,000

consider establishing multiple workstations so that archaeologists have easy access to small tools, finds bags and other items.

Traditional wheelbarrows can be replaced with motorised ones, such as an electric 1 tonne wheelbarrow with front-loading capacity. As well as reducing manual handling risks, this increases productivity as workers have more time to spend on other tasks.

For reducing the ground levels and managing spoil, small electric 360 tracked excavators could replace the traditional method of hand-digging. Again, this has a significant impact on productivity rates as well as reducing the risk of physical harm.

Where hand tools are needed, source tools that match people's height and strength. For instance, there are different weights and lengths of shovels or mattocks.

One of the most important activities on an archaeological dig is securing finds, soil samples and tools at the end of the day.

On a large site, consider establishing multiple workstations so that archaeologists have easy access to small tools, finds bags and other items

An archaeologist examines a coffin plate at St James's burial ground



Case study: Europe's biggest archaeological exhumation

Over 200 people, working in specialist teams processed burials at St James's Gardens



A Professor Alice Roberts on site at St James's Gardens

The HS2 enabling works programme in Area South covered 25.8km of the route from Euston Station to the Colne Valley, and includes Euston Station and tunnels, Victoria Road Box, Northolt Tunnels and Old Oak Common Station.

At Euston, the works included the biggest archaeological exhumation programme in Europe, involving the exhumation of over 40,000 bodies at St James's Gardens, which was a burial ground between 1789 and 1853.

During the archaeological excavation at St James's Gardens, activities centred on two key work sites. The primary site was the dig area itself. Covering 11,000 sq m, the excavation was staffed by over 200 individuals, including osteologists, archaeologists, engineers and surveyors. These were supported by exhumation operatives, scaffolders, plant operators and banksmen. The secondary work site was the bespoke archaeological labs which accommodated a team of osteology specialists, trainees and archaeological finds specialists who assessed and managed human remains and associated artefacts as they were recorded and removed from site.

Provision of small electric plant and supporting teams to manage spoil increased morale and productivity by a factor of five as well as reducing occupational health and musculoskeletal issues. Bespoke labs allowed iterative data flow to site to inform the excavation research agenda and saved £400,000 of post-excavation costs.

Costain Skanska JV was the main contractor, the archaeologist was MOLA Headland Infrastructure (MHI) and TCS Exhumation Services was the exhumation specialist.


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Electric wheelbarrows can be used to transport bulk soil samples and archaeological finds off site at the end of each shift

Again, thinking about logistics and assisted modes of transportation can help. Electric wheelbarrows can be used to transport bulk soil samples and archaeological finds off site at the end of each shift. Lockable tool chests located close to the dig help reduce the distances that tools must be carried and mean that they are easy to locate on the following shift.

In the laboratories

Archaeological excavation is just the first step in a series of archaeological activities that are needed to get the full academic and public benefit from a dig. Archaeological finds must be cleaned, catalogued, conserved, assessed and analysed in an archaeological lab.

Here again, by looking at the processes and ergonomics involved, it is possible to improve working conditions and reduce occupational health risks during post-excavation activities. Standard ergonomic data can be used to help make equipment more accommodating to people of differing heights.

Actions could include: designing shelving heights to suit the heights of users; installing washing stations with adjustable heights; ergonomic tooling for osteological finds processing; anti-fatigue matting for those carrying out standing work activities; natural lighting and decoration to boost wellbeing and productivity.

In summary

Archaeological fieldwork activities are labour-intensive. Particularly for larger-scale archaeological programmes of work, there should be early consideration of the location of welfare and the type of welfare, keeping in mind that ▲ Manual handling on digs can lead to damage to tendons and muscles

To test yourself

on the questions

on the right, visit

cpd-modules.

www.construction

management.co.uk/

the archaeological workforce may be 50% female.

Think carefully about walking routes and storage for archaeological finds and bulk samples. Providing bespoke areas for research and lab work can reduce occupational health risks and enhance public benefit and academic outputs earlier in the process and reduce post-excavation costs.

learning legacy paper written by Caroline Raynor, head of industry innovation, formerly project manager and lead archaeologist, Costain. You can read it at https://learninglegacy.hs2.org.uk.

CPD Questions

1. What Planning Policy Guidance covers archaeology? a) PPG 116 b) PPG 16 c) PPG 15 d) PPG 6

2. What percentage of ill health in construction is down to musculoskeletal disorders?
a) 45% b) 66% c) 54% d) 44%

3. What professional would not be involved in an archaeological dig?
 a) Archaeologist
 b) Osteologist
 c) Osteopathist
 d) Surveyor

4. How many bodies were exhumed from St James's Gardens? a) 4,000 b) 40,000 c) 400 d) 400,000

5. By what factor did productivity increase at the St James's site? a) 3 b) 2 c) 10 d) 5

Further reading

• High Speed Rail (London – West Midlands) Act 2017 – Schedule 20 Burial grounds

• Raynor, C, August 2019, Safe by Design, Institute of Occupational Safety and Health

• Bicknell, J, Foster, A, Raynor, C, 2018, *Preserving the Past*, Chartered Institute for Ergonomics and Human Factors



12 JULY 2022 THE BREWERY LONDON

CELEBRATING INNOVATION & TECH IN THE BUILT ENVIRON/MENT

SPONSORED BY





IOB representatives in the greater Toronto area have joined a Canadian government scheme called ACCES (Accessible Community Counselling and Employment Service) to help newcomers to the country gain accreditation as construction professionals and match them with skills-hungry employers.

Candidates in their hundreds as well as the province's top employers have expressed interest in the initiative, which helps establish people in their careers, ease Ontario's skills shortage and grow CIOB membership all at the same time. The organiser, Hamza Momade MCIOB, told *CM* more about the details.

CM: What is the ACCES Engineering Connections programme?

HM: It's sponsored by the Canadian government to help new arrivals gain accreditation in a variety of professions so they can start working in their field as quickly as possible. Participants attend academic sessions for six weeks. In the construction stream, that includes workshops on local engineering codes, health, safety and project management principles. It meets the criteria for 35 hours of project management

 Newcomers to Toronto are matched with employers
 Hamza Momade is the organiser of CIOB's involvement with ACCES



Employers get to meet skilled candidates who are ready to work – a plus for them because Canada is experiencing a major skills shortage in construction Hamza Momade MCIOB training, which allows participants to sit a professional examination after completing the course.

Every session ends with a networking event that CIOB is now a part of, which allows course graduates to meet industry leaders. CIOB helps potential members embark on the journey to chartered status.

CIOB fills a gap for ACCES because most of the professional certifications in Canada require two to three years' local experience, whereas MCIOB can be started and completed before landing in Canada, and it's a global qualification.

CM: How many potential candidates are there?

HM: Every six-week session includes 25 to 40 participants who can potentially become chartered CIOB members. To get on the ACCES programme, you must have a minimum of a master's degree and two years' work experience.

Participants come from all over the world, including India, Pakistan, Jordan, Syria, Yemen, Jamaica, Hong Kong, Venezuela and Brazil.

It is a win-win outcome because it allows candidates to join a global community, adds credibility to their skills, and opens the door for job opportunities. For CIOB, it boosts membership and awareness. Employers get to meet skilled candidates who are ready to work – a plus for them because Canada is experiencing a major skills shortage in construction.

CM: How have you promoted the programme?

HM: CIOB's partnership with ACCES was set up last year by myself and the CIOB hub team at Toronto. I completed the engineering

programme as a newcomer in Toronto two years ago and saw a great opportunity for CIOB.

In the last quarter of 2021 we held two webinars to tell people about the programme, with one in October attended by 183 participants.

Marcus Gillam, owner of Gillam Group, a top 100 Canadian construction company, has spoken at our events, as have candidates who've been through the programme, and Helen Patel, CIOB's representative, who explained the value of CIOB chartered designations and the steps to them. We'll hold two of these a year.

CM: Are construction companies getting involved?

HM: Yes. We've had strong interest and participation from industry leaders. Recent participants include from Gillam Group, a top 100 construction firm, Toronto's transit agency Metrolinx, Turner & Townsend, Gordon + Gordon, Altus Group, Fairmark Contracting and others.

CM: How many people have obtained CIOB membership through this route so far?

HM: Since the partnership began we've had one person attain chartered designation, Ojeiu Ohiosimuan (Ojay), originally from Nigeria, who was hired by a civil construction company within a month of gaining CIOB membership.

Five more are completing their professional review programme. CIOB hub in Toronto has received lots of enquiries, and my LinkedIn is flooded with queries from candidates.

I'm happy to see that this initiative is working so well, but there is a lot more work to do.

How ACCES has helped construction professionals



Hajar Elidrissi Hajar Elidrissi, 28, from Morocco, arrived in Canada with a master's in civil engineering and more than five years' experience in maritime, industrial maintenance, heavy civil and residential projects.

Finding a position that aligned with her technical background without local experience would have been a challenge, but ACCES helped and within three months of arriving in Canada she landed a role on a major residential development in the city of Kitchener, Ontario.



Obadah Aldalaty Obadah Aldalaty, 41, from Syria, has a bachelor's degree in civil engineering and construction management. He worked for 16 years on high-end commercial and residential projects all over the Gulf region, the wider Middle East, North Africa, Turkey and Europe.

He moved to Toronto in January 2021 and enrolled in the ACCES programme, where CIOB members helped him expand his professional network.

In April 2021, he joined Crosslinx Transit Solutions as senior project coordinator for civil and structural work on two stations of the Eglinton Crosstown LRT in Toronto, one of Ontario's biggest transit projects.



Ojeiu 'Ojay' Ohiosimuan Ojeiu 'Ojay' Ohiosimuan, 40, from Nigeria, is a certified project manager with a master's in civil engineering and construction management.

He moved to Canada in 2021 with more than 10 years' project experience, but had trouble establishing his credentials in Canada.

Through ACCES he met CIOB members who guided him through the process of accreditation, and within a month of receiving his chartered designation he was hired as a project manager by a civil construction company in Ontario.



Chrissie Parkes Holmes and Hills



'Another company has taken our scaffolding'

This month's contract clinic question asks what the options are for a company which had scaffolding stripped from a site. **Chrissie Parkes** replies

THE QUESTION

We erected scaffolding for a residential solar installation project. The client then decided they needed more scaffolding, but instead of asking us, they instructed another company. However, when we went to strip our scaffolding, it had already gone! The solar company will not tell us who removed our scaffolding. What can we do?

THE ANSWER

Sadly, this is quite common. There are several courses of action you can take. Firstly, let's discuss your legal position.



Remember, the employer is accountable to you for your scaffolding. So that should be your first conversation

How does the law view what's happened?

When you loan your scaffolding to a company for hire, this creates a legal relationship known as 'bailment'. In this relationship, you are known as the 'bailor' and the company hiring your scaffolding – your client or 'employer' – is known as the 'bailee'. Both the bailee and bailor have certain obligations to each other but most relevant to your problem are the bailee's duties to you (the bailor). These are:

• To take reasonable care of the goods;

 Not to convert goods (take, sell, give away or withhold goods without lawful justification);
 To protect goods from theft,

loss or damage.

The employer (as bailee) is therefore clearly in breach of the above obligations, having allowed your scaffolding to go missing. The law recognises that the bailee cannot do as they wish with your scaffolding. They certainly cannot do anything outside the remit of what was agreed upon hire.

So, what can you do now?

Firstly, was a written contract in place? If so, does that contract deal with the bailee's failure to fulfil the obligations mentioned above?

If there are no relevant contractual terms, we would look to legislation and common law. Together these imply a strict liability (reducing the need to prove intention) on the bailee for any unauthorised use of goods, failure to return goods and refusal to return goods as agreed.

The main remedies for 'wrongful interference with goods' are in the Torts (Interference with Goods) Act 1977. But before deciding what action to take, we would first need to try to find out what has happened to your scaffolding by contacting the employer, as this will guide your next steps.

For example, if the employer refuses to let you know where your scaffolding is, you could apply for an injunction ordering the employer to provide information about the location of your property.

Or, if the employer knows the whereabouts of your scaffolding but refuses to return it, you can apply for an order requiring the employer to return your scaffolding to you.

Should you learn that your scaffolding is lost or damaged, you could pursue a claim against the employer for the replacement of your scaffolding.

Even if your scaffolding is eventually returned to you but is damaged, you would have a claim in damages against the employer for failure to take reasonable care of the goods, and failure to protect your goods from theft, loss or damage.

You could have a further claim for the financial loss caused to you by not having access to your scaffolding. Without your scaffolding, you may be unable to continue your business either entirely or at its full capacity and as such the financial consequences can be huge. Therefore, you could pursue a claim for the lost opportunity to make profits, due to the employer's breach of his obligations as bailee.

Remember, the employer is accountable to you for your scaffolding. So that should be your first conversation. What happens next depends on what the employer says about the whereabouts of your scaffolding; that's if they know where it is. • Chrissie Parkes is a solicitor at Holmes and Hills.

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What made you go into construction?

When I was 16, I had to find somewhere to do two weeks of work experience. Via an uncle who was a civil engineer I did a placement at Caterpillar's assembly facility in Leicestershire. I really enjoyed working within a tight team, helping to solve problems and getting my best trousers dirty! This experience guided me into A-levels and then a degree in civil engineering, which included a year out on site. That year out was my first real taste of construction, and I was lucky enough to get the opportunity to work on highways, a water treatment works and a city-centre redevelopment.

Which project you worked on are you most proud of?

There have been many projects that I've been proud to work on, however the current scheme at SEGRO Logistics Park Northampton (SLPN) is at the top. It's a nationally significant infrastructure project (NSIP) approved by the secretary of state through a development consent order (DCO).

The project involves the creation of a strategic rail freight interchange (SRFI), infrastructure for 5m sq ft of logistics space and construction on the surrounding National Highways and local road networks. The scheme is like several projects rolled into one.

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

Ask questions, listen and have a really inquisitive attitude. Ask "Why does this happen?", "Why is it done this way?" and take valuable experience from people at all levels. You are never too old or important to learn. Also, I think it's important to understand that the roles within construction are varied but related, so progression This much I know Richard Bark Project manager, Winvic Construction

'You are never too important to learn'

Richard Bark would like to spread the word that construction careers are varied and challenging – and all experience is valuable



Roles within construction are varied but related, so progression sideways into another area is almost as common as going up the ladder Richard Bark, Winvic Construction sideways into another area is almost as common as going up the ladder. All experience is valuable as you grow and understand your skills.

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

Construction careers are varied and challenging. It's perhaps more about getting the word out – to young people and their parents – about what different roles really entail. Contractors have a responsibility with this and Winvic does many things, from getting staff to write blogs about their roles and projects to opening a Sustainability and Innovation Hub, as well as the Future of Construction training centre with client IM Properties at Mercia Park. Both facilities are being used to inspire the next generation.

What has changed the most about construction since you've been working in it?

The change that really stands out to me is the diversity of the people who work within it. It's great to see people from every background coming together and bringing new ideas into the construction industry.

Also, a lot of new technology has been implemented during my time, with digital modelling, monitoring and machine control now commonplace. This is now helping with the immediate, urgent need to drive sustainability and ensure design and construction methods are considered first.

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

"Is there a better way?" If you don't concentrate on challenging, questioning and learning, you'll never improve yourself or the outcomes of a project.



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Job spotlight **Kelsey Binding** Crane operator apprentice, Ainscough Crane Hire

Aiming high

With a supportive team and work on projects of all shapes and sizes, Kelsey Binding is building her skill set towards an eventual goal of specialising in mobile heavy cranes

Describe a typical day in your job?

No day is typical as I am usually on site at projects of all shapes and sizes, signalling the crane operators, making sure everything runs as smoothly as possible. Giving the operator a perspective of the surroundings on the ground and instructions to land and sling loads is crucial in ensuring safety and efficiency. Whether it's hand signing or radio signalling to the crane operators, my day consists of constant communication.

What do you love about it?

My favourite part of the role is the relationship I have with colleagues at my depot. Being in such a male-dominated line of work, it's not guaranteed you will find yourself grouped with such an encouraging and supportive team, and I feel like I hit the jackpot with mine. As much as I enjoy and am fascinated by my day-to-day responsibilities, it's the team and their championing that really make the job.

What skills do you need to do your job? How do you keep them updated?

Strong communication skills are essential due to the nature of my job, which involves a lot of signalling and supporting. Working with such heavy machinery, you've got to constantly be aware of your surroundings and directions.

Things rarely go wrong, but when they do they have the potential to be fatal, so it's my job to mitigate any chances of that. As I've only been on the apprenticeship at Ainscough Crane Hire for almost a year, I believe I'm still building on my skill set as opposed to updating it, but I am looking to acquire my Mobile Crane Ticket in April.

Whether it's hand signing or radio signalling to the crane operators, my day consists of constant communication Kelsey Binding, **Ainscough Crane Hire**



What's the most challenging/ interesting task you've had to do?

It can sometimes be challenging as a woman in my field when we are working with teams outside our own. My team at Ainscough Crane Hire pushes me to learn and practise, so it can be a challenge when, unfortunately, there are occasions people aren't confident that I know what I'm doing. However, my team and I are always happy when I show what I'm capable of!

Where do you want to take your career?

Since starting at Ainscough, I've been lucky enough to work in the heavy cranes team, working with cranes with loads that weighed up to 100 tonnes. It's these jobs which really excite and interest me, and it's definitely an area I would like to pursue in the long run. My goal is to achieve my crane ticket when I approach two years of experience, and in 10 years' time I hope to be specialising in operating mobile heavy cranes, and maybe even setting a world record!



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CIOB Community



Festival sets students up for career in construction

CIOB's virtual Student Festival gave the next generation of construction professionals a range of inspirational talks and guidance on careers

Potential construction professionals

were given two days of advice and inspiration on careers in the industry at the CIOB Student Festival 2022.

Keynote speakers at the virtual event in March were CIOB president Mike Foy, who discussed construction careers, and vicepresident Sandi Rhys Jones, who

Save the date – **Members' Forum**

Virtual forum and CIOB AGM coming up in June

talked about motivation, innovation and self-preservation.

Other inspiring talks were given by: Peter SP Wong of RMIT Melbourne, on virtual reality in education training; Neelam Kaul, careers consultant at Henley Business School, who explained how to ace an interview; and CMYA winner Marc Burton.

CIOB's Members' Forum will again

take place virtually this year, from

on key CIOB projects and important

industry themes, with a focus on

Members' Forum will as usual

include the CIOB AGM. This will

building quality and safety.

The agenda will include updates

28 to 30 June 2022.



Kevnote speaker: president Mike Foy

take place on Wednesday 29 June - look out for an email from CIOB with a link to a poll to determine the outcome of the AGM.

For the second time, CIOB will also run a second Members' Forum, to be held during the week commencing 28 November 2022. All being well, it is hoped

For 2023 the organisers are looking for contributors who can offer advice on learning essentials - such as dissertation tips, how to land a job, student wellbeing and networking

Dr Tim Lees, associate professor at Reading University, talked on making the transition from study to work, while Anjali Pindoria of Avi Contracts really delivered when it came to demystifying EDI. Whitney Bevan from Robert Gordon University gave advice on writing dissertations.

Employers offering advice were Jack Brayford from Kier Group and Zaid Marmash from COBOD, while the CIOB Tomorrow's Leaders panel passed on early career tips.

Plans for the 2023 Student Festival are already under way. The organisers are looking for contributors who can bring thought leadership and insight into careers in construction from across the globe, as well as anyone able to offer tips and advice to students on learning essentials - such as dissertation tips, how to land a job, student wellbeing and networking. To support the Student Festival in 2023, as a guest speaker or a supporter, please contact Hassana Ahmed: hahmed@ciob.org.uk.

> that this will be a face-to-face event with delegates.

> The meetings will be based in Sydney, Australia, taking Members' Forum to Oceania for the very first time.

As the agenda is confirmed, more information will be shared at membersforum.ciob.org.

Double winners at Manchester property awards

Awards for 2020 and 2021 presented by Mike Foy

Suffolk gallery trip dubbed a 'real treat' by CIOB CEO

CIOB's Caroline Gumble visited the restoration works at Gainsborough's House in Sudbury, where a new wing is being added which is set to make it the largest gallery in the county

CIOB members Paul O'Connell

MCIOB and Steve Wood FCIOB, of Thomas Sinden, hosted a behindthe-scenes tour for CIOB chief executive Caroline Gumble of the restoration works at Gainsborough's House in Sudbury, Suffolk.

Gainsborough's House is the birthplace of 18th century painter Thomas Gainsborough and has been operating as a museum since 1961. Restoration work began in 2019 to turn the Grade I-listed Georgian townhouse into a national centre for art.

The historic buildings will be refurbished and redisplayed with a new three-storey wing constructed that will create the largest gallery in Suffolk. The doors will open to the public this spring.

Gumble said the day was "a real treat", calling the hand-made reticulated brickwork facades, made by local company Bulmer Brick and Tile, "extraordinary craftsmanship".

A new roof has been constructed for the gallery using hand-crafted copper – and will include a camera obscura. Internally the new gallery will form two main spaces for public exhibitions. One, the Gainsborough Gallery, will have silk wall linings manufactured by Humphries Weaving, another local company.

The main construction challenges were limited access and storage, and restricted room to manoeuvre, as the site is close to houses and businesses. The logistics required



very careful planning and a lot of work to liaise with local residents and businesses.

During her visit Gumble presented awards to site supervisor Frank Maloney and site manager Glen Neal for the best site audit scores across Thomas Sinden sites for 2021. ▲ The new threestorey wing will create the largest gallery in Suffolk

▲ The original Georgian facade of Gainsborough's House



▲The Oglesby Centre at Hallé St Peter's, Manchester

CIOB president Mike Foy presented awards to two winners at the Greater Manchester Chamber Property and Construction Awards in March.

The dinner was a double celebration as it crowned the winners of both the 2020 and 2021 awards.

The Oglesby Centre at Hallé St Peter's was named the winning building for 2020 and the winner for 2021 was RHS Garden Bridgewater.

The Oglesby Centre, an extension of Hallé St Peter's, is a high-quality, high-performing building yet sympathetic to the Grade II-listed former church.

RHS Garden Bridgewater is the fifth RHS garden and one of the largest gardening projects undertaken in Europe in recent years. The new world-class visitor centre, known as the Welcome Building, provides a gateway to the gardens.

Other CIOB guests at the event included: Tom Francis MCIOB, managing director, Ankura, and CIOB Manchester Hub chair; David Maiden MCIOB, project director of AECOM; Tony Grindrod FCIOB, contracts manager at Vinci Construction; Adrian Rooney, managing director of CBC J Greenwood (Builders); Neil Houlihan, CEO and founder of Project Recce; Charlotte Hamman MCIOB, head of built environment at Wienerberger and CIOB Manchester Hub committee member; and Hazel Yorke, CIOB business development manager, North & North Wales.

Bright times ahead for construction students

This year's Bright Futures Student Challenge gave a taster of the industry's talent of the future



The annual CIOB Tomorrow's Leaders London and South Bright Futures Student Challenge (BFSC) once again proved that there is a wealth of talent ready and waiting to come into the construction Industry.

Teams from universities and colleges in London and the south, all studying construction-based courses, came together in March to showcase their skills and knowledge to try to win the title of BFSC 2022 Champions.

The competition, which was sponsored by VolkerFitzpatrick, was based around its £29m The Apex project for client Reef Group – one of six mixed-use new builds forming the Tribeca development in the heart of King's Cross. ▲ The winning University of West London team, with judge Stuart Deverill

Outstanding
 Student Chris
 Willetts of the
 University of
 Brighton, with judge
 Stuart Deverill



Teams from universities and colleges in London and the south came together to showcase their skills and knowledge The teams were invited on a site tour then had to give a 10-minute presentation to a panel of judges on a question about the project.

After two rounds of presentations the team from University of West London – Eliass Arfal, Lewis Cain, Alex March and Lewis Mayley – were announced as the winners. The Royal School of Military Engineering team – Shaun Bladen, Nathan Cowley, Greg McCormack and Charlie Pengilley – came in a close second.

Two students went away with the knowledge that they stood out from the crowd. Chris Willetts (University of Brighton) was recognised as Outstanding Student of the day and was presented with a trophy, certificate, voucher and an opportunity for a week of work experience with VolkerFitzpatrick. Lewis Cain (University of West London) was recognised as Highly Commended and will also have the opportunity to accept work experience with VolkerFitzpatrick.

The judges were: Malcolm Clarke, managing director, Baxall; Jo Elder, director, We are Spaces; Karl Crisp, senior operations manager, Willmott Dixon; Joshua Waterman, associate director, Turner and Townsend. Four judges were from VolkerFitpatrick: Rakesh Chavda, senior project manager (The Apex); Anthony Clarke, operations manager; Stuart Deverill, managing director, Building Division; John O'Grady, divisional commercial director.



Dion Dublin talks at the hub dinner

Fundraising and a famous footballer make Newcastle awards dinner a win

CIOB Newcastle Hub's Annual Dinner with guest Dion Dublin raised £5,000 for charity

Over 160 construction professionals

attended the CIOB Newcastle Hub Annual Dinner in March.

The evening was hosted by Graeme Forster, with speeches by CIOB president Mike Foy and Newcastle Hub chair Tony Bellamy MCIOB. Victoria Lane MCIOB presented Hartlepool College students with their trophy for winning the 2021 Student Challenge.

Former pro footballer Dion Dublin took to the stage with his compere Jerry Earl and regaled guests with stories from his colourful football career, including Cambridge United, Manchester United and Coventry City. Dublin also discussed his work encouraging the younger generation of footballers to invest in property.

Platinum sponsor was CDM Recruitment and gold sponsors were Tilbury Douglas and Black and White Engineering. The chosen charity for the evening was Metro Radio's Cash for Kids, with over £5,000 raised on the night.

WIT wins CIOB's Student Challenge Ireland 2022

Waterford Institute of Technology sees off Letterkenny IT and GMIT

Get construction in school: CMYA winner backs built environment GCSE

Marc Burton of Garenne is encouraging members and companies to get behind a move towards introducing the built environment as a GCSE subject

Marc Burton FCIOB, a past winner

of CMYA, is urging CIOB chartered building companies (CBCs) and members to support the promotion of the built environment as a GCSE subject.

The House of Lords built environment committee recently backed calls for the built environment to become a GCSE subject – something that Burton, as chief executive of Channel Island operations with Garenne, was instrumental in creating in Jersey.

He worked with the Jersey Construction Council (JeCC) for 10 years to get construction on the curriculum, as well as with the Class of Your Own initiative Design Engineer Construct! (DEC).

In 2017, Garenne and Sir Robert McAlpine introduced DEC to one of the secondary schools on the island. It is now recognised as both a GCSE and A-level equivalent and is now in its fourth year on the full-time curriculum in several schools and a further education college.

DEC is the first-ever vocational course to get on the Government of Jersey (GoJ) curriculum, with Levels 1 and 2 recognised as equivalent to a GCSE and Level 3, equivalent to an A-Level with full UCAS points.

There are over 400 students studying DEC across five of the nine secondary schools in Jersey plus the island's FE college.



A Past CMYA winner Marc Burton

Marc Burton worked with the Jersey Construction Council for 10 years to get construction on the curriculum

Burton, who is chair of the CIOB Jersey Hub and managing director of a CBC and CIOB training partner, is keen to encourage other CIOB members and CBCs to support the DEC initiative. • For more details on DEC and Class of your Own visit: designengineerconstruct.com.



The winning Waterford team celebrate their victory

Waterford Institute of Technology was crowned the winner of this year's CIOB Student Challenge Ireland 2022, which took place as a virtual event in March. The silver winner was Letterkenny IT, with GMIT the bronze winner.

The members of the winning team – Gary O'Neill, Conor Power, Svetlana Zavadska and Jordan Kinch – were supported by their lecturer Brian Graham FCIOB.

"This is a fantastic competition for students to participate in and reinforces two of the most important skills required to be a successful construction manager: teamwork and communications," said Graham.

The three top-scoring colleges saw off student teams from Dundalk IT, TUS Midwest and MTU.

The teams of four were provided with a brief on the morning of the competition which required them to tender for the 'design and build' of a scheme of 20 family houses in an urban setting in the Midlands.

They had four hours to work on a report and presentation, highlighting what they believed to be the most important issues and how they would proceed with the work. Each team then had 15 minutes to present their work to the judges, followed by a Q&A.

The panel of judges consisted of head judge John Sweeney MCIOB, Roger Gillespie FCIOB, Hugh Dodd MCIOB, Katherine Dobbin and Dermot Russell FCIOB.

The winners were announced by Ivan McCarthy FCIOB, CIOB Trustee.

Sweeney, a member of the CIOB Dublin Hub Committee, said "The CIOB Student Challenge is a very competitive event, considering the timeframe in which the task must be completed, along with the added challenge of not knowing the content of the brief until just 15 minutes before the start of the competition."

He added: "This provided students with a real insight in to what will be expected of them when they commence their own careers in construction management. The judges were extremely impressed by the standard of the presentations provided by all teams."

CIOB Ireland thanked the colleges, judges and sponsors, the Construction Industry Federation and Lafferty, for their backing.



The Chartered Institute of Building

Safer Buildings UK Conference

26 May 2022 De Vere Grand Connaught Rooms, London Don't miss out on CIOB's Safer Buildings UK conference, to raise awareness of the culture change that is needed to ensure that the buildings we create and manage are safe for those who occupy them.

Find out how progress is being made on the Building Safety Programme and Building Safety Bill, as well as the work that is ongoing to raise levels of competency across the industry and increase resident engagement.

Meet **Lord Stephen Greenhalgh**, Minister of State (for Building Safety and Fire), **Dame Judith Hackitt DBE**, author of the Independent Review of Building Regulations and Fire Safety, and **Peter Baker**, Chief Inspector of Buildings at HSE, and engage with our expert panel through a series of roundtables and a live Q&A session.

SECURE YOUR PLACE TODAY

http://ciob.me/saferbuildingsuk

One to watch

Luke Rushton-Marsh Site manager, Willmott Dixon Interiors



Why did you choose construction? What else might you have done? I stared working as a labourer on a building site during the summer holidays between leaving school and starting college. I was going to college to become a police officer but just fell in love with the construction industry and the general site atmosphere. I dropped out of my college course and never looked back.

What are your career ambitions? My career ambitions are to become a director of a large construction company.

What do you love about the industry? What would you change? My favourite parts of the construction industry are the sense of pride you get during and on completion of a project, making your mark on history and the people that you meet. Some of my best friends I've met through construction and not a day goes by that we don't have good banter.

How do you spend your spare time? I spend my spare time playing golf and spending time with my two children aged five years and eight weeks old.

CIOB Chartered Membership Programme rewards top scorers

Three leading candidates received a prize and certificate for vocational project-based work

Three new CIOB members who

achieved membership throughout the Chartered Membership Programme (CMP) route have had their efforts recognised recently at an awards ceremony for the candidates with the highest scores.

In 2021, 392 candidates took the CMP exam. The awards went to the following outstanding candidates: **Gold Award – Daniel Grocott**, who scored a combined mark of 110 out of 120.

Silver Award – Andre Camilleri, who scored a combined mark of 106 out of 120.

Bronze Award – Kieran Lonergan, who scored a combined mark of 105 out of 120.

Each of the successful candidates received a prize (a glass engraved paperweight) and congratulatory certificate.

CIOB recognises success among its CMP candidates every year, rewarding the top scoring candidates from the June and November exams. Their outstanding grades are the result of dedication and hard work while still in a day job.



Daniel Grocott scored the highest in the CMP exam

The CMP route to MCIOB is for individuals with significant management experience who lack formal qualifications at honours degree level. It allows candidates to demonstrate their competence, skills and knowledge through a vocational project-based programme.

It takes one academic year to complete and candidates register with an approved provider who mentors and prepares them to sit an open-book exam based on a project scenario at the end of the course, in either June or November.

Successful candidates can then progress to the professional review to become a chartered professional.

Surveying firm doubles up with TP and CBC status

ICW Technical Services aims to assist employees' personal development ICW Technical Services, the surveying division of ICW Group, a UK provider of building warranties and building control services, has achieved chartered building consultancy (CBC) status.

ICW has also recently joined the CIOB Training Partnerships scheme to support its long-term learning and development strategy, where it aims to assist all employees in achieving professional development goals.

ICW has over 140 staff across the UK and a number are already progressing to chartered membership. Several staff members have completed courses through the CIOB Academy.



A Part-vaulted ceilings and glazed doors bring light into the kitchen

New Roman

Heritage issues and an archaeologically sensitive site were some of the challenges facing **Liam Dower MCIOB** on a St Albans property extension

St Albans is a city steeped in history.

The cathedral dates back 1700 years and is situated among the remains of the Roman city of Verulamium.

Dower Developments engaged us to transform a dilapidated period two-bedroom cottage, in the heart of the Cathedral Quarter, into a 180 sq m, four-bedroom property with a unique living arrangement.

Construction work in this conservation area – known for its wealth of below-ground heritage and archaeology, with internationally significant sites – is not for the faint hearted. Works on a site that includes or has the potential to include heritage assets need to include a Heritage Statement with Impact Assessment. In such a high-profile area, project management was key. Timed deliveries outside peak traffic times had to be factored into the construction management plan and meticulous care taken to avoid damage to the surrounding environment.

The project included a basement construction, a double-storey extension, whole-house refurbishment and landscaping. The confined and sensitive nature of the site meant we had to deploy specialists and more traditional methods of construction, while the development was monitored for items of archaeological interest. Hand-digging in correlation with conveyor belts removed excess earth.

The basement was constructed through a strategic arrangement

of underpinning to the existing foundations. The formation level of the basement was around 3.8m. The lateral pressures at this depth needed to be accommodated in staged excavation to maintain the integrity of the surrounding environment.

This was achieved through temporary works design consisting of horizontal props at various key locations which were altered and modified as the basement expanded.

A large degree of structural steel was installed to support the upper floors and a major challenge was calculating the positioning of large steels into a small space. With precise planning, a series of structural steels were manoeuvred into position in the basement ceiling void to support the internal walls. Over six months, 80 sq m of additional light-filled living space was created on the lower ground floor with 2.7m ceiling heights.

Following the formation of the basement shell, the fit-out works commenced with the installation of mechanical ventilation and pumping of wastewater to ensure the space accommodated a diverse range of uses, from showering in the wet room to watching TV in the media room.

Ten months later, the residence is a beautifully appointed family home over three light-filled floors, with a detached home office in the garden. • St Albans Basement is a chartered building company (CBC), owned and managed by Liam Dower.





Liam Dower CV

 After leaving Loughborough University with a degree in Construction Engineering Management, Dower joined the Laing O'Rourke graduate management programme.

 Having gained significant insight into large-scale construction projects and crucial experience in project management, Dower went on to establish St **Albans Basement** to provide a specialist basement construction service. He has worked on residential projects large and small, in conservation areas, on listed buildings and tricky inner-city sites.

 He is a chartered builder.

The doublestorey extension incorporates a basement beneath



In association with

Lessons in resilience

Grace Herring of Sir Robert McAlpine's Special Projects team tells the story of the St Marylebone Parish Church project showcased at this year's CIOB Conservation Conference



Special Projects' scaffold allowed the church to remain in use during ceiling works

St Marylebone Parish Church is

Grade I listed and is the fourth parish church to sit at the heart of the Marylebone community in 900 years. Designed by Thomas Hardwick Jr in an era of elegance and opulence, the building, constructed in 1817, narrowly survived the Second World War, suffering significant damage during the Blitz.

St Marylebone Changing Lives, which was made possible in part by the National Lottery Heritage Fund, is one of central London's largest and most significant community projects, with a huge cultural significance to its local community.

Sir Robert McAlpine (SRM) Special Projects' role as main contractor, alongside the consultant team of Caroe Architecture and Alan Baxter Associates, has been to work with the project team to remove this building from the Historic England 'Heritage at Risk' register.

Throughout its history, the church has been a focal point for the community in central London. Today it continues to be home to vital services and initiatives for health, music, community and education.

As well as being a place of Christian worship, it works with organisations such as Age UK, Westminster Adult Services, the Alzheimer's Society, Westminster Arts, the Church Army, the West London Mission, the NHS (the church crypt houses the Marylebone Health Centre, which supports 10,000 NHS



patients, and the St Marylebone Healing and Counselling Centre).

The project is a bastion of resilience. I was delighted to present to the female-identifying stakeholders of the parish church on International Women's Day, and was so heartened by the sheer number of people it engages with, and how many different things it represents to them all.

Being adaptable to change and discovery is being resilient. St Marylebone Parish Church received a grant of £460,000 from Historic England's Major Works Fund Grant Scheme for urgent repair work to the magnificent 19th century fibrous plaster ceiling.

A regular inspection revealed that it was at serious risk. The Special Projects team, supported by ornamental plaster specialist Hayles and Howe, and led by Caroe Architecture, with the support of project director Focus Consultants and quantity surveyor Synergy LLP, mobilised quickly.

The project required access from above and below, and SRM Special Projects developed, in conjunction with specialists, a suspended flying birdcage scaffold, This provided fulllevel access to the underside of the ceiling while having minimal impact on the nave of the church. In the roof void, access to the ceiling was achieved through the installation of a lanyard fall arrest system. Aside from periods of erection and dismantle, the church has remained in use.

The Changing Lives project seeks to serve its community, and represents the resilience of the community – local and national. It preserves the traditions of the past while repurposing for future use. • Grace Herring is proposals manager – Special Projects at Sir Robert McAlpine.

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Diary dates

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

The Future of Transport within Construction

3 May, 6-7pm, online The way we travel is predicted to change over the next decade with a drive to decarbonisation. This presentation will explore the trends that will affect how we travel and the infrastructure requirements needed.

CIOB Exeter Hub invites you to this virtual event, which will be hosted by Adam Crichton. The presenters will be Rob McDonald (director of Future Mobility and Smart Cities) and Steve Keen (associate, Stantec). Contact: estreames@ciob.org.uk

Telling Stories and Shattering Myths webinar

СОВ

5 May, 4-5.30pm, online Where does archaeology fit into the construction process? This event aims to consider the perspective from both industries.

The webinar will focus on: • Where archaeology fits into the planning process;

• The connections across the disciplines; Interpersonal development; Process requirements, planning

guidance, risk management; When to talk to an archaeologist to avoid impact;

• Early engagement to promote benefits.

Speakers are Jonathan Payne, MD of Mascot Construction; Dr John O'Keefe, CEO of the Discovery Programme; and Peter Hinton, CEO of the Chartered Institute for Archaeologists (CIFA).

The webinar, held on Teams, will be followed by a Q&A session. Contact: jfitzsimmons@ ciob.org.uk

Building Safety Bill vs Safer Buildings in Wales 10 May, 12-1pm

The Building Safety Bill is the government's response to the recommendations coming out of the Hackitt Report, following the 2017 Grenfell Tower fire.

The bill will overhaul regulations and change the ways in which buildings should be designed, constructed, managed and maintained, to ensure that they are safe to use.

Max Meadows, director at Project Four Safety Solutions, will discuss how this differs from the Safer Buildings in Wales white paper, with a Q&A session at the end. Contact: lclarke@ciob.org.uk

Restoration of Boxley Abbey site visit

11 May, 3-5pm

This site visit is run by members of the Society for the Protection of Ancient Buildings (SPAB).

St Andrews gatehouse chapel in Sandling, Kent, sits less than a quarter of a mile west of Boxley Abbey, a Cistercian monastic site.

The building has had a long and winding history as a former chapel, a 20th century post office, a Victorian home, the site of a gingerbeer making business and the home of a relic - the finger of St Andrew.

It is believed that the chapel, the oldest part of the building, was constructed in 1484. It has been added to and extended over the years, leaving the SPAB a puzzle to unpick as it repairs this building, untouched since the 1960s. Contact: blawrence@ciob.org.uk

HS2 Curzon Street Viaducts site visit, Birmingham

17 May, 5-6.30pm Part of HS2's Curzon Street site will become the home to two

viaducts which will carry the new HS2 trains to Birmingham's new purpose-built Curzon Street Station. Main works contractor BBV is currently carrying out piling works on site in preparation for the construction of the viaduct's piers.

Join us to take a look at the site and hear from the project team about the work under way, future plans and challenges. Contact: gfloyd@ciob.org.uk

Belfast Annual Dinner

20 May, 7-11.30pm, **Crowne Plaza Belfast** CIOB Belfast's Annual Dinner is delighted to welcome back the popular UTV Live sports editor and presenter, Adrian Logan (Logie) who will act as compere and provide some lively entertainment.

This will include a live interview with our after-dinner speakers: Wilma Erskine, former secretary manager of Royal Portrush and driving force behind the Irish Open; and Chris Henry, former Irish rugby union player.

Fees: Individual £70, table of eight £560, table of 10 £650, table of 12 £720 (including VAT). Contact: jfitzsimmons@ ciob.org.uk

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

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