Modular hits the heights
How Europe’s tallest offsite tower is taking shape fast in Wembley
The Towers of Piazza Drago in Jesolo used Fassatherm ETICS with EPS 120 wall panels, A50 adhesive and RTA acrylic finish coat for perfect thermal insulation with a weather and mould proof seal.
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Cover image: Morley von Sternberg

Take the test on this issue’s CPD subject of PIR insulation panels and additional topics at www.constructionmanagermagazine.com/cpd
News

Construction urged to act on quality to safeguard against structural failures

Scottish minister challenges industry in wake of Edinburgh schools safety debacle

Alarm is growing over the lack of robust quality control procedures in construction in the wake of the damning inquiry into the Edinburgh schools collapse. On 17 March Kevin Stewart, minister for local government and housing in the Scottish Parliament, convened a summit of professional bodies – including CIOB and Institution of Structural Engineers – and construction experts at which he expressed his grave concern over the issue and challenged them to sort it out.

The summit comes as the engineering watchdog for structural safety is also sounding the alarm that poor quality control is threatening the safety of public buildings. The Standing Committee on Structural Safety (SCOSS), a group comprising the Institution of Structural Engineers, the Institution of Civil Engineers and the Health and Safety Executive, is calling for the industry and clients to come together to tackle it urgently.

The City of Edinburgh Council commissioned the inquiry following the collapse of part of the outer skin of a cavity wall at Oxgangs Primary School in January 2016, and the subsequent strengthening required to 16 other Edinburgh schools built as part of the same Public Private Partnership contract. Defects included the poor quality of bricklaying, inadequate supervision of the bricklaying, and deficiencies in quality assurance processes on site. The inquiry’s author, Professor John Cole, an experienced architect from Northern Ireland, said it was only luck and timing which prevented death or injury when nine tonnes of masonry fell on an area where children could easily have been standing or passing through.

“One does not require much imagination to think of what the consequences might have been if it had happened an hour or so later, he said when his 250-page report was published in February 2017. Cole presented his findings at the Edinburgh summit which focused on four key topics:

- How do we achieve quality assurance in construction?
- Is there a need for independent assurance?
- Do certain elements of construction need independent assurance on the grounds of health and safety implications?
- What is the role of Building Control?

Alastair Soane, director of structural safety for SCOSS said: “There is no reason why this problem is just connected to Edinburgh schools, a discussion has got to take place across the industry.”

Edinburgh schools collapse: the defects

Defects found in the first school were:

- wall cavities not uniform; variable cavity widths;
- lack of minimum 50mm embedment of ties in the mortar joints; and lack of consistent levels between the inner blockwork leaf and the outer brickwork leaf. Investigations of the other schools using intrusive techniques found similar defects coupled with an absence of wind posts, lack of head restraints to steel frames, and in some cases a lack of specified bed joint reinforcement.

Part of the evidence provided to the inquiry was information that the inner blockwork leaves of cavity walls had been built prior to the construction of the outer leaves. The size of the problem was such that approximately 440 heavy steel wind posts were required to be retro-installed across the 17 schools. To bring the walls back to the intended strength remedial works were undertaken by retro-fitting ties through both leaves using specialist subcontractors. A significant number of head and corner restraints also had to be retrofitted. Quite separately a significant number of breaches of fire-stopping were revealed across all 17 projects ranging from minor gaps around pipes and cables to some larger holes or gaps in what were described as fire compartmentation. Most of the reported breaches occurred in the roof spaces of the schools.

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"There is no reason why this problem is just connected to Edinburgh schools, a discussion has got to take place across the industry.”

Alastair Soane, SCOSS

Speaking after the ministerial summit, CIOB president Paul Nash, who attended it, said: “The fact that the minister has convened this round table so soon after the publication of Professor Cole’s report is a measure of the importance being attached to its findings by the Scottish Government.

“The minister’s message was clear. We have to learn from what happened on these projects and act to ensure that it doesn’t happen again. That means looking at how we train our
people from trade level up and how we ensure that the required standards of quality are achieved on site every time. I think there are some fundamental questions that the report raises that demand a response from the industry and those of us who represent it.”

Meanwhile, Edinburgh council is continuing to inspect all public buildings in the city and is working on an action plan to be published in June which will provide a detailed plan of how the council intends to avoid a repeat of the schools debacle in the future.

It is understood that the minister for local government has written to all the local authorities requesting that they give public building inspections priority.

Neil Baxter, secretary and treasurer of the Royal Incorporation of Architects in Scotland (RIAS), which provided evidence to the inquiry, said: “We are absolutely certain that something the UK government and those in England should be concerned about.”

The only conclusion that one can draw is the lack of independent scrutiny that resulted were it not for “a matter of timing and luck”.

Poor-quality bricklaying, inadequate supervision and “fundamental and widespread failures of the quality assurance processes” all contributed to the eventual failure.

In fact, so serious is this case that SCOS (Standing Committee on Structural Safety) has published an alert to highlight the structural safety implications of the report.

“‘As professionals we have a duty to society’

CIoB president Paul Nash says industry cannot afford to ignore the issues raised in the Edinburgh schools report.”

Professor John Coles’ report into the building defects that led to emergency closure of 17 schools in Edinburgh in 2016 makes sobering reading for anyone who cares about our industry and the reputation of those who work in it. The report lays bare the failings of those responsible for the construction of these buildings as well as the potential consequences that could have resulted were it not for “a matter of timing and luck”.

Poor-quality bricklaying, inadequate supervision and “fundamental and widespread failures of the quality assurance processes” all contributed to the eventual failure.

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“We have to look beyond the procurement process and understand the behaviours that led to an acceptance of poor workmanship.”

So how could those responsible have got it so wrong?

In its submission to the investigation, the Royal Incorporation of Architects in Scotland (RIAS) highlighted the use of design and build and what they believe is the lack of independent scrutiny that results from using this form of procurement. In my experience, design and build itself is not synonymous with a lack of quality or quality control. It is probably the most common form of procurement used today and defects on this scale are rare.

I think that we have to look beyond the procurement process and understand the behaviours that led to an acceptance of poor workmanship on these sites. This was not a single defect affecting one building, this was multiple defects that occurred on a number of projects, procured and constructed as part of a single programme of works. The only conclusion that one can draw from this is that the failing was a systemic one, which is a point that bears closer examination.

Much of the industry reporting of this case has focused on the failings at trade and supervisory level. But there are many unanswered questions about the role of those responsible for commissioning, directing and managing these projects, which have wider implications for our industry and society.

And the report comes at a time when the issue of quality in construction has been making the headlines for other reasons. Recently Bovis Homes announced that it was setting aside £7m to compensate buyers for defects in new homes, recognising that their production processes were “not sufficiently robust in order to deliver the quality of homes to our customers when we would expect to deliver them.” In other words, quality was being sacrificed for speed of delivery. For Bovis the immediate impact of failing to manage quality was on the bottom line, although the damage to its reputation is arguably greater.

Elsewhere, the investigation into the fire at Lakanal House highlighted that defective workmanship and a lack of quality control have much more serious consequences. In this case, a lack of adequate fire protection was found to have contributed to the rapid spread of the fire that resulted in the deaths of six people. And this at the same time that the report into the Edinburgh schools identified that there was a lack of adequate fire stopping, which would have made the buildings unsafe in the event of a fire.

As professionals we have a duty to the industry and wider society to act responsibly and ethically. This defines what it means to be a professional. And we all have a responsibility for the reputation of our industry and the wellbeing of those who work within it.

It is important that we understand the issues that allowed these defects to occur and act to ensure that it does not happen again. To this end the CIoB will be reaching out to other professional bodies and industry representatives to create a forum to discuss the issue of quality in our industry and the steps that we need to take to improve it.
Clients still not buying into BIM

A high proportion of public sector clients are failing to adopt BIM on their projects, according to Construction Manager’s annual BIM survey. The results showed that only 38% of centrally-funded government clients made BIM a requirement on all of their projects, 12 months after the mandate for public funded projects requiring its adoption came into force.

In the same group one in four said they did not ask for BIM adoption on projects. When it came to public projects not funded centrally, more than six out of 10 clients said they did not require BIM. The continued ambivalence of clients towards BIM highlighted in the survey of nearly 400 professionals, including 62 clients, is threatening to stall progress. This sentiment was reinforced by a group of experts brought together by Construction Manager for a round table discussion on the impact BIM was making at the operational level, where participants said clients were failing to see the benefits.

One of the attendees, Jill Guthrie, senior BIM Manager for Willmott Dixon Construction, said: “Clients still do not understand what they are asking for or what BIM is. The majority don’t have any idea.”

David Jellings, managing director for UK at BIM Object, agreed: “The industry has stagnated in the past 12 months.”

Francis Ho, a partner at Pennington Manches, added: “It has in some ways it has been a lost year. The other B-word [Brexit] has robbed a bit of momentum.”

On the more positive note, the survey results showed BIM was becoming more embedded in industry processes and with it a growing confidence among professionals. A total of 61% said they had at least some confidence or above, and 22% were confident to fully confident. In 2016, 52% of the respondents said they had “some” confidence or above, and of these just 17% were confident to fully confident. And 39% still said they had little or no confidence, compared with 48% in 2016.

The number of respondents saying the organisation they worked for had not been involved in BIM was still high at 38%, but this had fallen from 49% in the previous year. Those who have been involved in 10 or more BIM projects had risen to 16% from 10% the previous year.

In terms of positive impact there was little change from 2016, with six out of 10 respondents saying BIM saved time and cost in the construction stage, though for clients this was lower at five out of 10.

Durham University reaches for the stars

Built by contractor Interserve and designed by Studio Libeskind (New York), the £11.5m 2,478 sq m Ogden Centre for Fundamental Physics at Durham University opened in March. It is designed in a spiral plan with continuous, stacked and interlocking forms. It features ventilated timber rainscreen cladding made from Scottish larch punctuated with linear bands of operable strip windows and a series of outdoor terraces.

The unique spiral form of the building required creative engineering. Column locations had to be carefully considered, some of them sloping to respond to the architectural geometry of the building. The positioned columns enable flexible room layouts to allow the university to expand areas and move around in the space – catering to the future needs of the Centre.
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The first woman president of the CIOB passed away in February after a long battle with cancer.

DESCRIBED AS “SPECIAL” and “hugely determined” Professor Li Shirong passed away in February, aged 59. From Chongqing in China, she became CIOB president in 2009, its 175th anniversary year, and the first person to take up the position from outside the UK and Ireland. Her appointment signalled the growing ties between the Institute and China, which she continued to strengthen.

A pioneer in construction management in China, Professor Li’s work spanned academia, industry and government and reflected her strong belief in the need for sustainable urbanisation. She was Professor of Construction Management at Chongqing University, deputy director of the Chongqing Foreign Trade and Economic Relations Commission, a member of various advisory groups to the Chongqing government and the author of 26 books.

Professor Li’s first degree was in civil engineering, she also had an MSc in Construction Management and a PhD in Construction Economics and Management from the University of Reading in the UK.

CIOB chief executive, Chris Blythe OBE, said: “For those of us in the CIOB our memories are very special. She always had energy, she always had a smile and she always found a way to solve a problem.”

“No one she ever came across felt anything other than being fortunate to know her. Her leadership of the institute was inspirational, her intellect and energy boundless and her love for the CIOB and what it stood for was immense. She was unique as a president, a star, a very special person. We have lost a good friend.”

Lord Prescott said: “I was deeply saddened to hear of the death of Professor Li Shirong who I considered a close friend. She was a remarkable woman, who I much admired for her commitment to improving the lives of citizens and communities. She was a real ambassador for Chongqing and I will very much miss her.”

“A totem for diversity in our institute and industry. A sad loss, indeed.”

Adam Dowling
Constructionmanager magazine.com

“Tributes paid to ‘special’ PP Li Shirong”

The first woman president of the CIOB passed away in February after a long battle with cancer.
Two former colleagues and friends remember her life

Later she was appointed vice mayor of her home district in Chongqing (Shapingba), where she was responsible for the creation of a new university town on the outskirts of the city. This was a huge development with campuses for around 20 universities and accommodation for hundreds of thousands of students.

She then moved as deputy director to COFTEC, the Chongqing Foreign Trade and Economic Relations Commission. It is important to set the context: Chongqing has a land area the size of Scotland and a population three times the size of Portugal.

Shirong had a key role in promoting foreign trade for the municipality and expanded her network of very senior people across the world. I attended a number of receptions with her. She was a very able networker, starting at the top with the most senior person and then working her way through the room. Everybody would leave with a warm feeling having found a new friend.

Roger Flanagan, Professor of Construction Management, Shirong’s PhD supervisor, remembers ‘the special one’.

She lived life to the full and was always happy to help, to guide, and to be the one to make things happen. She was a lovely person both inside and outside.

What an amazing achievement for a lady from Ya’An, a small city in the western part of Sichuan Province, China, to become a professor, a high-ranking government official, a vice mayor, and to be the first lady and first overseas president of the CIOB – that takes some doing. She earned the respect of everyone she met.

Shirong was educated at Chongqing University, went overseas to continue her education, firstly to Delft in Holland, then to Reading in the UK to study for her PhD. On her journey through life, she was driven with ambition, commitment, and compassion. When she taught at Chongqing University, the students loved her, they became part of her extended family. Even when she was so ill towards the end of her life, the students rallied to keep close to “the special one”.

Her ability to make things happen was reflected when she held her president’s reception in the Chinese Embassy in London. The small matter of getting the Ambassador’s permission to provide the splendid facility with lunch was no obstacle to Shirong.

She was a woman of immense talent – her PhD external examiner commented after her doctoral oral examination that he was not sure who was examining whom! She learned English very quickly, she was happy to speak to large audiences, she always respected people.

Siping, her husband, and XinXin, her daughter will miss her so much.

Michael Brown, former deputy chief executive of the CIOB, recalls her determination and persistence.

The CIOB had been working in China since 1991. In those early days I received a letter from one Li Shirong from Chongqing asking to be considered for membership. By then I had visited China, but had not heard of this place Chongqing... and Li Shirong – was this a man or a woman? Caution prevailed and this letter disappeared into the “too hard” tray.

Within a couple of weeks a second letter arrived giving more information, and stating that she was actively involved in the government committee in China responsible for the Construction Management curriculum in Chinese universities. At that time she was on a six-month research scholarship in Holland at Technische Universiteit Delft. We arranged to meet.

Soon after, she began a PhD at the University of Reading. This coincided with project work the CIOB was undertaking with the Ministry of Construction in China and funded by the British Council, developing the Construction Management curriculum for Chinese universities.

With her rapidly improving English, Shirong was able to act as an intermediary between the CIOB and the Chinese ministry. We were all working in uncharted waters, but both sides felt more secure with Shirong acting as the intermediary.

Whilst at Reading she wrote a textbook to be published by the CIOB on the Chinese construction industry and still managed to complete her PhD in the shortest possible time.

Also while she was at Reading I remember Shirong being very excited after receiving a letter saying that she had been appointed a Professor of Construction Management at her university in Chongqing. I believe she was the youngest professor at that time. She was held in very high regard even then.

I got to meet Li Shirong during the summer of 2009 at the AGM in Englemere. What a lovely person. She took time to say hello to everyone following her inspired address. Sad to hear of her parting.”

Jack Wright
Constructionmanagermagazine.com

her. My sincere condolences to her family.”

A member of the CIOB since its early connections with China and regarded as a major factor in its growth there, Professor Li used her term to ensure that international communications remained high on the agenda.

Li Shirong was born in the town of Ya’an in Sichuan province. Her mother was a primary school teacher and her father a civil engineer, which she cited as the main reason she chose construction as a career.

When she completed her schooling in 1976, the Cultural Revolution had not quite ended and the “Down to the Countryside” movement was still marshallng China’s educated urban youth into back-breaking labouring jobs on the nation’s farms. In 1977, policy winds shifted in her favour as young people were allowed to take examinations to enter into universities for the first time in a decade.

In 1978 Professor Li was enrolled in the civil engineering programme at Chongqing University, a proud member of the first cohort to enter university under the new policy since the Cultural Revolution began.

After graduating in 1982, she was selected to be a teacher in the civil engineering department. Alongside this work, she started studying on the masters programme in construction management.

She was also appointed to sit on the national Steering Committee for Construction Management Education under the Ministry of Construction.

In 1993, she won a scholarship to study for her PhD. On her journey through life, she was driven with ambition, commitment, and compassion. When she taught at Chongqing University, the students loved her, they became part of her extended family. Even when she was so ill towards the end of her life, the students rallied to keep close to “the special one”.

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Siping, her husband, and XinXin, her daughter will miss her so much.

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Toolkit aims to encourage young people to pick careers in construction

Resource launched after members ask for help to promote industry in schools.

This month the CIOB is launching a resource pack to encourage young people (14-19) to consider construction as a first choice career. The pack is a response to enquiries and feedback from members looking for resources to help them in their schools’ outreach work and content has been shaped by research carried out with young people to understand their perceptions of the industry as well as input from teachers and industry advisers.

The release of the kit comes at the same time as the chancellor’s announcement of plans to introduce new technical qualifications – so-called “T-levels” – promising to simplify the process of vocational training in England, and paved the way for 16- to 19-year-olds to study in sectors such as construction, making access to the job market easier.

The CIOB toolkit pack consists of:

- Guides on developing and delivering presentations to young people and tips for managing a session.
- A range of interactive activities to help members design well-structured and varied sessions that will engage with young people and keep their attention.
- Simple responses to frequently asked questions about the industry.
- Short videos with inspiring stories that showcase the interesting and rewarding professional career opportunities and experiences available in the sector.
- An online “construction challenge” game that provides interesting facts and insight into the sector.
- An Instagram channel, that young people can follow, that will curate visual and interesting elements of the sector – and ongoing content that can be used by members as well.
- A short video-log series of a student in her first year of studies in Construction Management.
- Blogs by young professionals about their experience working in the sector.
- Other existing resources members may wish to draw upon, including the CIOB’s own Minecraft lessons targeting 12-14-year-olds.

The CIOB will also offer short sessions for those interested in using the pack and a national matchmaking service where members can sign up to be contacted by local schools to go in and run short sessions (sharing their own career paths and utilising the resources).

To find out more about the resource pack contact publications@ciob.org.uk.

CIOB joins Build UK to strengthen industry voice

The CIOB has become the first professional body to join up to Build UK. Build UK was formed in 2015 when the UK Contractors Group merged with the National Specialist Contracts Council to create a stronger voice for a cross-section of the industry.

A growing number of organisations, contractors and clients have joined. The most recent being The Carey group and Berkeley Group. Among the larger topics it works on include, the issues of payment, pre-qualification and the overall image of the industry.

By joining Build UK, CIOB is leading the way in driving collaboration and change to help the whole industry.

Together they are already making progress in ensuring that the right organisation leads on the right issue at the right time. The CIOB, with Stronger Together, has developed a best practice toolkit for the industry to tackle Modern Slavery across the supply chain, which is supported by Build UK as the industry response to this important issue.

Meanwhile, Build UK is taking the lead on developing a strong response from construction to Brexit.

Build UK chief executive Suzannah Nichol said: “We are all behind the goal of delivering new homes, new infrastructure and more public and private buildings and we each have a role to play in creating a successful construction sector. By joining Build UK, the CIOB demonstrates its forward thinking commitment to a better industry, and by working together we can really drive change across the industry.”

Chris Blythe, chief executive of the CIOB, said: “We are delighted to add our voice and expertise to Build UK. The industry is at its best when it collaborates and that is something we need to reflect when we talk to government and clients.

“Our public benefit agenda and ambition to create a safer, more professional and rewarding career for those who join construction is a sentiment shared by Build UK and together we can make an even bigger difference.”

Build UK is the organiser of the Open Doors event, which takes place in April and sees dozens of contractors open their construction sites to the public in an effort to attract more people to the industry.

www.opendoors.construction
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BIM needs reboot after stagnation of ‘lost year’

This time last year, the industry was gearing up for what Construction Manager dubbed “mandate day” – an historic date in the industry’s calendar that would usher in a new digital era. April 2016 was supposed to be the month that publicly funded projects would be obliged to adopt Level 2 BIM across their supply chains and hopefully carry private sector clients along in the slipstream. No one, of course, was realistically expecting the door to be fully closed to traditional ways of working, but there was, perhaps, a reasonable expectation that after five years to prepare for this procurement change, BIM adoption would pick up pace.

It is apparent, however, from the results of our 2017 BIM survey and accompanying round table discussion (see page 28), that the reality is a little more disappointing. Some of our participants went as far as describing BIM’s progress in 2016 as something of a “lost year”.

Our participants pointed to the lack of take-up by clients, who either do not understand BIM or remain unconvinced of its merits.

What’s more, even among centrally funded government clients, adoption still seems patchy and, frustratingly for the industry, it’s a state of play that appears to be going completely unchallenged. But corralling stray project sponsors into adopting BIM is probably the last thing on the Cabinet Office’s mind if all hands are needed on deck to trigger Article 50 and its aftermath. As one of our experts, Francis Ho, pointed out, that other B word needed on deck to trigger Article 50 and the Cabinet Office’s mind if all hands are preparing for this procurement change, BIM adoption would pick up pace.

That’s not to say there are no positives to report. The survey points to a sector that is growing in confidence in delivering BIM and the number clocking up more projects with BIM is rising. The other big change is that consultants and contractors are putting frustrations with clients aside and moving ahead quickly with other off-the-shelf technologies such as tablets and software that link to BIM models to drive onsite efficiencies. Perhaps this adoption of a more self-contained technology will take over from the cradle-to-grave blueprint set out in the so-called eight pillars of BIM.

But crunching through the survey’s numbers the obvious conclusion is the considerable risk of BIM’s progress stalling. What it urgently needs is a reboot to regain momentum – a major evidence-gathering exercise from the Construction Leadership Council to help prove its merits, even a very public reminder from government that it’s still important. Both might be good places to start.

Construction Manager is undergoing a refurb and April’s edition will be the last in its current format. As of next month, our seven-year-old design is being refreshed with stylish new typefaces, format and content. We look forward to showcasing our modern new look in both print and digital and getting your feedback.

What price a career in construction?

Peter George, via website

The industry and government have to agree a strategy for stopping the boom and bust cycles and are trying to do so with CITB facilitating that discussion (Talent scale lays bare extent of skills crisis, online). The career and progression prospects for individuals are good. There are discussions with schools and colleges, I am an enterprise adviser for one of my local schools and we have resources for careers teachers and ambassadors to use to explain how good construction is.

Benjamin Sewell, via website

I agree construction needs to start encouraging younger people into the industry. But wages need addressing for these skilled people to consider construction, particularly when a creator of computer games will start on £35,000 a year. Granted they need a degree, but I still wouldn’t say it was a skilled job.

I also believe people such as myself need supporting. I’m a 31-year-old going through a career change to construction – I would like to be a site manager but even voluntary work seems hard to get.

Robert Jones, via website

Having just retired after 56 years in the construction industry, nothing has changed. All the time the industry has been regarded as the poor relation by the political establishment so there is no incentive or esteem for potential recruits. Until a shift in attitude takes place, this shortfall will continue, with the best of all prospects for individuals.

Peter George, via website

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Defects down to experience

Steve Faltiner, via website

I see a lack of quality control in site management deteriorating further as the industry moves away from the tradition of tradesmen moving up through the ranks to become site managers and a movement towards university graduates.
Vox pop

Should the industry be doing more to retain and hire older workers?

James Paviour
Senior manager,
The Management Recruitment Group

I don’t think that ageism exists per se across construction. Construction is complex and as a result clients look for experience. Having a number of projects under your belt and seeing things from start to finish are the positives of experience. There is no way to shortcut experience.

Having said that, we have an ageing “management” population and that is a big issue for many company leaders. We also have a hole in succession plans from the hiring freezes of the protracted financial crisis. These issues can lead to biased decision-making in hiring plans.

Stephen Wielebski
FCIOB
Principal consultant,
W A Consultancy

Sadly, there are too few companies that have taken a positive approach and put in place effective transitional arrangements that have allowed experienced construction people to be retained beyond retirement age and for their experience and skills to be capitalised on.

In management terms, we should ignore age as a constraint and make the inherent strength of an inclusive workforce productive.

Israil Bryan
Diversity and social programme manager,
Skanska UK

With the current skills shortage there is a significant focus on recruiting new talent, with a real emphasis naturally placed on interns, trainees, apprentices and graduates.

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"We need to get the balance right, ensuring that we attract and retain older and more experienced people too.”
Israil Bryan, Skanska UK

Teaching needs industry support

L G Simms, via website

I agree with this article totally (Schools failing to promote construction, online). I have offered to go into both a school and an academy to talk about opportunities in construction, neither of which has been taken up by the head teachers.

I have been involved with construction for the past 56 years as a QS and contract administrator and sitting as an arbiterator and acting as an expert witness. I would be delighted to encourage youngsters to the construction industry as professionals, as well as tradesmen.

Mike Smith MCIoB
Managing director,
Corniche Builders

We have a vast ageing workforce and while modern methods are flourishing the basics are not being taught and the knowledge bank that exists is being left untapped. We will be in a situation where skills and knowledge are lost. We should encourage the retention of those people and add them to the “diversity” list – which we used to call equal opportunities and there is legislation in place for.

Tracey Lawton, via website

I teach construction, from BTEC to degree level, and find that students have no real perception of the employment opportunities that are available. I too would like to see recognised bodies of the construction industry support myself and others who are committed to “opening eyes” of these learners. As the parent of a teenager who has just entered further education, I can confirm that there was zero careers advice regarding available opportunities within construction.

Contact us
Do you have an opinion on any of this month’s articles? Email: construction-manager@atompublishing.co.uk
Rugby’s rules were pored over after England’s Six Nations match against Italy. **Gary Sullivan** suggests offsite is similarly testing the rules of construction.

Controversy over the offside rule has long been the preserve of Association Football; there are many quips about who does and doesn’t understand it and football fans ‘enjoy’ nothing better than some banter with the referee over who was or wasn’t ‘offside’. But it seems that rugby now wants a share of the debate.

I couldn’t help but think about the construction industry as I watched the Italian tactics bamboozle the English Rugby team in this year’s Six Nations clash (for non-rugby fans the Italians refused to engage with the England players during certain passages of play, leaving them at a loss as to how to continue as they weren’t breaking any rules). I say this as an English rugby fan and as a committed supporter of the UK’s construction industry. An industry that is about teams made up of people with differing skills and contrasting attributes, all of whom seem to enjoy robust interaction on the field of play, not unlike a rugby team.

So, I find myself as baffled as England players Dylan Hartley and James Haskell when I ponder the rights and wrongs of “offsite”. There are some emotions that I understand, albeit the failed experiments for prefab houses were in the 1950s and 60s. I understand the investment risk in creating factories that are difficult to sustain for an industry whose pipeline is insecure and, of course, we all know that our beloved industry is an exemplar in its resistance to change.

There is a view – something just cannot be said out loud in the 21st century – that “offsite is just not building”. Or, as Eddie Jones, manager of England’s rugby side, commented after the Italy game: “That wasn’t proper rugby.”

So in the year 2000 after a fanfare of enthusiasm from the top house builders such as Wimpey and Westbury, along with housing providers like The Peabody Trust, offsite and modular were to be the panacea for 21st Century construction. Some 17 years on and construction is still struggling to make it work. We have seen fantastic leadership from Ray O’Rourke and yet Laing O’Rourke has not had the success it deserves from its investment.

Legal & General has also invested heavily in offsite as it looks to fill the demand for more housing and as we have seen in recent announcements from Heathrow Airport Ltd, it plans to take a substantial amount of work for Heathrow’s expansion to the other parts of the UK by creating offsite manufacturing plants.

Heathrow, of course, can rightly claim to have been building capacity and capability in this area for some time. Starting small, with air bridges, fixed electrical ground power and baggage in a box as just a few examples.

**Methodical route**

Perhaps this is the route to success, start slowly, learn, and increase knowledge and skills methodically and with patience before taking on too much too soon. Back to the rugby: Dylan Hartley and his team mates were trying too hard to solve what was actually a small problem without taking time to understand the issue (or the laws).

Too often, construction looks at one element in isolation, without understanding the other consequences.

For offsite not to be “offside” it needs to be designed and procured differently, it will need an amended framework that deals with liquidated and ascertained damages (LADs) and other legal issues. However, no manufacturer is just going to sign up for that unless they understand the risk. It has to be less transactional and more integrated, as well as honestly collaborative. There will be no revolution, it has to be evolution – we have all seen the slogans “keep calm and carry on” and I think for now that is good advice.

The construction industry can do offsite any time it chooses to, the question is: does it want to? It has the skills and the intelligence, what it doesn’t have is the patience to build knowledge at a pace it can cope with.

Too often in construction, someone is needed to referee, perhaps it should heed the advice given to Dylan Hartley by match official Romain Poite and seek guidance from a coach on how to deal with a different approach to the same game.

**Gary Sullivan OBE** is chairman of Wilson James

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“I find myself as baffled as England players Dylan Hartley and James Haskell when I ponder the rights and wrongs of offsite.”
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Comment Peter Trebilcock

Young or old, we need to work together

The young generation has the tech skills, the older generation has the experience and life skills. But how do we exploit both for construction’s mutual benefit, asks Peter Trebilcock.

I’m too busy. I like innovation but I don’t like being innovated upon.”

John Maynard Keynes said: “The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds.”

There is a plethora of software to help realise business efficiencies, but the problem lies not in the digital tools, but in the capability and willingness to exploit (implement) them. Contractors have project demands and contractual responsibilities and while they want improvement, they are generally conservative (risk averse), demand clear business case models against new investment, and are very cost conscious.

The old and the new
The new generation of workers, meanwhile, are much more comfortable with the use of new technologies to help resolve problems, reduce risk and improve efficiency. It’s easy for this new generation to find fault with the old guard – and it’s easy for the seniors to maintain the status quo. But how could the two generations help each other a bit more?

I would suggest two simple approaches:

- Arrogance: “I have been successfully delivering projects for the last 20 years without this technology. Why should I need it now?”
- Ignorance: “I do not know how to exploit it nor understand what I need – so how can I utilise it effectively? I shall stick with what I know.”
- Pain: “I know it can add value but it means I have to buy a new software package or pay for some additional resources. I don’t have the time or the money. Change is okay for others, but I’m too busy. I like innovation but I don’t like being innovated upon.”

They need to take their peers with them, hold their hands, if necessary, and demonstrate how they can make things easier for managers, team members, customers and projects alike.

- For the older generation (or less tech-savvy), where life skills and project experience is as important as any technology, they can host a workshop where the techies can show them the array of digital tools they can choose from on a given project (BIM, modelling, simulation, 4D planning, drones, 3D printing, mobile technology, mobile data, VR headsets, asset data and so forth) and determine which will add most value to the given bid, project or problem facing them. Not all aspects of digital construction apply to every project.

- Both parties have to accept it is not an overnight exercise.

- If we can grasp the right mechanism for life-long learning so the concepts, technologies and changing practices can form part of the core ongoing learning, from board level to graduate, then we can understand, evaluate and take these new technologies in our stride.

- I suspect, given the historic lack of R&D and education and training within the construction industry, we will struggle to deal with any accelerated change and given the challenge many SMEs have in understanding and investing in BIM, what hope have they got with the onslaught of new methods of procurement, data sharing and digital tools?

- By embedding new thinking, developing the talent in our organisations and, perhaps more importantly, by being able to keep our finger on the pulse with ever-changing technologies, significant value can be added to our businesses.

“There is a plethora of software to help realise business efficiencies, but the problem lies not in the digital tools, but in the capability to exploit them.”

BIM round table and survey results, p28
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MORE FROM WOOD.
AMONG THE INAUSPICIOUS surroundings of a drab interwar estate in Lambeth, south London, sits a striking new block, that provides a new type of affordable housing model for local workers. The block of 70 new micro-apartments is being built by Pocket Living, a London developer looking to shake up the housing market and champion middle-income Londoners looking to get on the property ladder.

CM is onsite with Sarah Davies, head of project management at Pocket, which produces its housing based on the principle of small can be beautiful – and affordable.

The one-bedroom flat on show is snug yet comfortable and the quality and attention to detail impressive. Lots of light with large doors and windows. The kitchens feature a small refrigerator, white cabinetry, and even a dishwasher, demonstrating that having a smaller space does not necessarily mean residential amenities need to be sacrificed.

The overall impression is less monastic life and more young European urban dweller.

Prices for these flats start at £267,000 – for this part of London, that’s around 30-35% below market value.

Walking around the HKR Architects-designed scheme Davies describes Pocket’s typical buyer as young middle-income key workers such as teachers, charity workers and nurses.

“Our average tenant is 25-35 years old, they have not owned a home previously and they have to live and work in the borough where the property is being built. However, this isn’t exclusive and we have had older buyers, including ones who were 60, but were never able to buy their own home.”

The scheme in Sail Street, Lambeth, was built with Donban Contracting UK as the main contractor along with sister modular

The saviour of city living

Pocket Living’s Sarah Davies shows James Kenny around one of its London schemes, a showcase for how small companies can deliver affordable city homes using modular building.
company Vision Modular Systems. It consists of 162 modules making up the 70 apartments.

So who are these revolutionaries for the first time buyer? How are they able to offer these apartments at below market value and can it be scaled up or rolled out elsewhere?

Pocket Living was originally formed in 2005 by Marc Vlessing, a former investment banker-turned media company chief, and Paul Harbard, formerly finance director at housing association the Peabody Trust.

Pocket has brought the concept of the micro apartment to the capital, building one-bedroom flats for sale, on average, at 20% below market rate. It can afford this as it builds its flats smaller – at 38 sq m – than the 50 sq m usually required by the Greater London Authority’s London Plan.

Affordability in perpetuity is ensured through the lease, which stipulates that the homes can only be sold to people on a household income of less than the current London Plan affordable housing earning threshold for one- and two-bedroom homes. In this way, Pocket homes remain in the affordable arena forever.

Having delivered six schemes last year between September and February, Davies says 2017 is shaping up to be its most ambitious and busiest year so far.

Shaking up the market

The recent Housing White Paper called on medium-sized companies to start using modular and offsite as a way of shaking up the market, and Pocket is a prime example of this.

Speaking about the White Paper, Davies says it’s encouraging the government is listening and recognises how small and medium-sized developers can shake up the sector, being encouraged into the market and urged to use offsite housing and modular as part of the £3bn Home Building Fund.

“The success of the White Paper will really depend on how much practical support actually reaches SME developers to help them grow in the market. One way to do this would be to direct capital from the Home Building Fund towards smaller developers looking to utilise modern methods of construction on small infill sites that are often ignored by larger developers.

“If you’re a small- or medium-sized developer, the upfront payment needed to commence the actual modular manufacturing process can be quite a significant amount of money, you’re not going to just have this lying around so help from the government is much needed.”

Davies says that one of the key reasons for Pocket’s success has been its partnership with Donban, which not only has contracting experience but also has its own modular arm.

“Our belief is that there are a number of good modular manufacturers in the UK, we’ve actually been doing a study in-house the last few months to evaluate the sector,” she says.

“A lot of the modular companies don’t necessarily have the principal contracting arm and this is a big barrier for success.

“In the case of Donban, it’s a principal company with a sister company that’s a modular manufacturer. They work in tandem and Donban takes the primary contractor role.

“The existing modular manufacturers need to partner with a builder, who can take on projects as a whole and then provide a product that is accessible for small- and medium-sized businesses.”

Another area Davies believes is vital for delivering modular homes successfully, and where other developers run into difficulty, is having a product that is mortgageable.

“A product has to be high-quality, but more important, it has to be accredited for it to be mortgageable and it can take a lot of time to get all this lined up and get that accreditation,” she says. “On this scheme at Sail Street we’ve been working with Premier Guarantee.

“Finance is key, but also ensuring the planning system recognises the difference between traditional and modular. Getting high street lenders to lend on it is something we’ve worked quite hard to get.”

Pocket’s apartments are smaller, at 38 sq m, than the 50 sq m usually required by the London Plan

“A lot of the modular companies don’t have the principal contracting arm and this is a big barrier for success” Sarah Davies, Pocket Living
> Working in central London brings its obvious challenges and speed is essential to deliver schemes on time but also keep costs down. Pocket seems to have mastered this, making its one- and two-bedroom flats – including fitting – in two weeks. The modules are then lowered into place to form buildings over around 30 days; then finishing work takes place, to make the resulting block look like a traditional apartment block.

“The benefit of our product is the modules fit on a standard-sized truck and cuts down bureaucracy,” says Davies. “So usually when we have a site ready to be craned in, we have a delivery of 10 trucks a day, that’s five homes in a day.”

A recent coup for the company is its appointment to develop Wandsworth’s first modular tower as part of the council’s affordable housing scheme – which will be one of Europe’s tallest modular structures.

The 26-story, 89-home scheme will be built as individual units on Mapleton Crescent near Wandsworth Town station. The £39.7m project is expected to be completed by summer 2018.

“we’re delivering the project in 20 months, which is significantly quicker than the other contractors who tendered for the project. At least 30% quicker if not slightly more.

“we started in October and we’re about to slipform the core, 26 storeys at 3m a day and we hope to be craning in the finished modules in May and June of this year.”

Looking further into 2017, Davies says Pocket will be keeping its focus on London, where it currently has schemes in 12 out of 32 London boroughs.

Its next new development is West Green Place N17, which has just received planning permission from Haringey council. One of Pocket’s largest projects to date, it consists of 126 residential homes with a mix of 16 three-bedroom and 110 one and two bedroom apartments, 98 of them for sale at 20% less than the surrounding market rate. The scheme will also include a new nursery and community centre.

The company is also planning to expand this year through bigger developments and providing larger homes. “In 2017 we want to continue with bigger and better schemes, this year we’ll move into delivering projects with 80-100 units which are much bigger than our traditional 25 homes. We also have some mixed-use schemes and some offices coming up,” says Davies.

While the company has obviously found a formula for success, Davies says they welcome contemporaries and competition to the market.

“We are ready and willing and starting to meet the demand, but there are other parties who need to get involved too. Small- and medium-sized companies using modular is the key to meeting the housing demand, we would welcome other people to come join us.”

“Getting high street lenders to lend on it is something we’ve worked quite hard to get”
Sarah Davies, Pocket Living
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UP, UP AND AWAY
Europe’s tallest modular tower, Apex House in Wembley, will rise to 28 storeys and take just one year to complete. Stephen Cousins examines the structural and economic gymnastics required to make it stack up.

**FOR A HIGH RISE** that’s more than a third of the way into construction, there doesn’t appear to be a lot going on at Apex House, a 560-bedroom block of student accommodation going up in north-west London, just a stone’s throw from Wembley Stadium.

I have been on site for over an hour and during that time I have only seen a handful of operatives, working from mast climbers on the facade, a few site managers, and just two lorry deliveries, each carrying one piece of cargo.

The lack of site activity is a result of the volumetric modular method of construction. Due for completion in September, Apex House will be the tallest modular tower in Europe, rising to 81 metres, some three storeys higher than the current record holder, a 25-storey student residential block at the University of Wolverhampton.

It will comprise 679 separate modules, including 242 modules in two eight-storey wings on either side of the tower, produced by manufacturer Vision Modular Systems at its factory in Bedford (see panel, p26).

The self-contained units resemble shipping containers, each one delivered fully kitted out with a kitchen and bathroom, services, light fittings, switches, socket outlets, internal finishes, even the bases for the beds are installed. “The only thing missing is the duvet,” jokes Rory Bergin, partner at HTA Design, the scheme’s architect, planning and sustainability consultant. “Moving as much work as possible into the factory you can control the quality, and there’s no need for any follow-on trades to enter the units.”

The rapid-fire development involves modules being transported down the M1 to London, then lifted by tower crane from the trailer and into position in just 10 minutes. Up to 11 units can be installed per day, which has enabled the project team to slash the construction programme in half, to just 12 months, compared to the equivalent concrete-or steel-framed tower.

The project overturns the conventional view that modular is more expensive than traditional construction, claims Bergin: “The whole question of whether modular is a bit more expensive than traditional, in terms of up front cost, doesn’t matter a damn. What matters is that saving of 12 months of time, which a group of professionals, including clients, builders and manufacturers, could use to build another building, making the capital cost almost totally irrelevant.”

The use of “prefab” has long been suggested it is starting to gain ground again.

“Moving as much work as possible into the factory you can control the quality, and there’s no need for any follow-on trades to enter the units.”

Rory Bergin, HTA Design

The government’s £3bn Home Building Fund, launched last year, will direct some funding to modular housing. The £1.7bn Accelerated Construction programme, launched this January, will exploit offsite to deliver up to 15,000 housing starts on surplus public sector land during the current parliament.

Under the latter, the Homes and Communities Agency (HCA) will provide support for local authorities that use offsite building methods and construct homes at “up to double the speed of a traditional development”.

**Ramping up housing numbers**

As it happens, representatives from the HCA and the Department for Communities and Local Government (DCLG) visited Apex House just before CM arrived on site. “They wanted to see how our system fits into the plan to ramp up housing production numbers,” explains Bergin. “Our model is appropriate for medium to high rise and we represent the highest end of production, where around 70% of all construction effort is in the factory, whereas a panelised or frame system might be around 50%. They want to apply the right system to the right place, rather than shoehorn the same system in where it is not appropriate.”

According to Bergin, anything above six storeys high hits the “sweet spot” in terms of economic feasibility, “It’s difficult to build low-rise housing with this type of system cost effectively at the moment”, he says.

Apex House is located at the intersection of Fulton Road and Albion Way, close to Olympic Way, the main pedestrian thoroughfare leading from Wembley Park railway station to Wembley Stadium.

It is the fourth modular block to be built on a single parcel of land inside the Wembley Regeneration Area by the same developer, Cork-based Donban.
Feature Modular housing

Below: A bedroom in the neighbouring Karma House, which was built by the same team as Apex House.

Typical floorplan: Apex House

Example of unit use

Unit use - Level 7
Unit use - Level 9

Typical bay study

Construction. The four projects were all delivered with variations of the same modular system, by a close knit construction team, led by Donban’s sister manufacturing arm Vision Modular Systems, HTA Design, main contractor Tide Construction and M&E supplier Red Electrics.

This integrated set up has helped increase the pace of delivery, from one project to the next, increasing the number of modules installed per day from five or six to 10 or 11. This improvement has made it easier to convince Brent Council that the approach is reliable and worthwhile, says Bergin.

Hybrid frame

The building frame is actually a hybrid, comprising a reinforced concrete core, concrete foundations, and a series of concrete columns, at ground level, that support a transfer slab on level two. The transfer slab provides vertical support for all the modules above, which are stacked one on top of the other.

The modules are produced in eight different configurations and vary in weight from around 12 tonnes to 17 tonnes. A typical module is a student room, containing a bedroom, study area and en suite. Half of the modules include a section of corridor.

Larger modules, installed at the corner of the tower, house common areas with a shared living/dining space. Every module is open at one end to allow services to be connected, including the soil vent pipe and electrics, and to fit a door onto the corridor. The concrete core provides lateral support for the modules, as do two steel bracing structures at the end of the two wings. Concrete floors in the modules act as a “diaphragm” to channel lateral loads into the core.

All units are welded together on site to form the rigid honeycomb structure, the most complicated weld junctions are where four modules come together on an external face. Supervising engineers photograph each weld detail to ensure quality control.

I’m not allowed inside an installed module, for safety reasons, but we take a look round a room in the Novotel Hotel next door, built using the same system. The floors feel solid – each module has a thick concrete base – there's no sense of flimsiness or issues with noise from outside. Apparently, one yardstick for acoustic performance was the ability to sufficiently mute a Metallica concert playing at nearby Wembley Arena. The only deviation from a conventional room is an unusually thick internal partition wall, created where two modules join.

Crucially, the hotel doesn’t look like a carbon copy – a criticism often levelled...
“Sometimes we have to push the manufacturer to do things that are a bit less efficient to improve the architecture.”

Rory Bergin, HTA Design

Structural innovations allow more storeys

Two key structural innovations were required to build the highest modular tower in Europe, at 28 storeys.

A special coupling arrangement, between the steel modules and the reinforced concrete core, had to be designed to accommodate differential movement, caused by the gradual settlement of the concrete structure over time.

Kieran White, managing director at Vision Modular Systems, told CM: “We had to develop steel plates, cast into the core, form a horizontal tie with the modules and allow for some vertical movement.”

In addition, the modules each incorporate thick steel corner posts, designed to transfer vertical loads down into the foundations. The arrangement differs from Vision’s modules for low-rise properties, which include vertical studs at 600mm spacings designed to handle uniformly-distributed loads.

The walls of modules are mostly infill structure, including boards for fire protection and internal finishes. The walls on the facade incorporate windows and insulation, ready for application of the GRC cladding panels on site.

Sky’s the limit

The tallest modular tower in the world is a 32-storey residential tower, in Pacific Park, central Brooklyn, but Vision believes its system is capable of going even higher, potentially into the mid-30s.

Kieran White, managing director at Vision Modular Systems, told CM: “We are looking at other schemes that will take the height up into the mid-30s, fundamentally you are working with a steel structure so we could go higher.”

The modular approach suited the tight nature of the site, where there was no room for materials storage, apart from a small courtyard to the rear, and just one side road for deliveries.

Using modular resulted in a small workforce, of just 22 on site staff, eradicating the need for large areas for welfare facilities and site offices, normally associated with a traditional build. It also benefitted health and safety – by removing the need for scaffolding and allowing all external work to be carried out from mast climbers.

In economic terms, off-the-shelf volumetric modular is more expensive than traditional build. However, it works out cheaper when taking into account the reduced build programme, says Bergin.

“If you’re talking about a student building with 500 rooms, each with a rental cost of around £800 a month, then completing 12 months early could mean around £4m additional income for the client,” he says. (The rooms wouldn’t...
**Feature Modular housing**

"Apex might have gone up faster if the factory was capable of producing more than 11 modules a day."

> be 100% occupied so its not a totally straightforward calculation.

However, the technology also has limitations. Module sizes are limited by the width transportable by road – on this project the maximum is 4.5m-wide. While that’s not an issue for student accommodation, modules for build-to-rent projects would come close to the maximum allowed, says Bergin.

The size of GRC cladding panels was restricted by the weight that could be supported on the mast climbers, and means there are more joint lines on the facade than the architect wanted.

In addition, Apex might have gone up faster if the factory was capable of producing more than 11 modules a day. But boosting productivity would require a larger pipeline of work sufficient to justify greater investment in factory processes and people.

That could happen soon as the team working on Apex House has two projects in planning, in Hammersmith & Fulham and Willesden, and another four projects at an earlier stage of development.

**Modular’s wider impact**

Whether modular schemes like Apex House can trigger a paradigm shift in UK construction will depend on wider strategic political and economic goals.

The ongoing housing crisis, coupled with the possible impact of Brexit on numbers of migrant workers, could make fast-build systems, which require fewer on-site operatives, very attractive.

A report by Arcadis in February estimated that the industry as a whole could result in a reduction of as many as 214,000 workers in the event of a “hard” Brexit, by 2020.

Bergin comments: “A lot strategic people in different organisations know that if we are going to have long-term future, we need to look at this as a long-term solution, as we are going to run into labour supply problems. Modular will help future-proof the industry.”

Adopting it will also require a change in mindset, as many staff in local authorities and housing associations remain wary of prefab as a result of negative experiences in the past.

“The Council of Mortgage Lenders has not been very welcoming of modular,” says Bergin. “Even with the minimum manufacturing quality standard in place, we understand that not every mortgage lender will accept it.”

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**Precision engineering role module**

The 679 modules installed in Apex House are being manufactured at Vision Modular Systems’ factory in Bedford, in a process similar to that used on a car production line. A total of 150 skilled and semi-skilled factory workers are employed across the production process, including welders, plumbers and carpenters, plus managers for production, supply chain and logistics.

Each module is assembled in the following stages:

- The structure for the walls, floor and ceiling zone.
- Services, including first-fix ductwork, inside the ceiling for air handling, and electrics and plumbing, for the kitchen and/or bathroom.
- Walls are boarded and finished.
- Kitchens and bathrooms are fitted, including tiling.
- Windows and insulation layers are installed in the external face of the module.
- Second fix electrics including lights, switches and sockets.
- Decoration and cleaning.
- The “roofing” stage where the unit is sealed off to prevent water ingress when it is lifted onto the building. Once on site, the module is connected to the power and water supply, then a commissioning process is completed to ensure that heating and hot water, sprinkler systems and fire systems, and every switch and socket, are fully operational.

Moving most of the site work into the factory helped cut waste to just 2% and, alongside other factors, was key to the project achieving a BREEAM Excellent rating.
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What happened to the

A year after the mandate, CM brought together 10 industry stakeholders to discuss progress... or lack of it. Tom Ravenscroft reports. And survey results overleaf.

IT HAS BEEN A YEAR since the government’s Level 2 BIM mandate came into force, a perfect time to take stock and reflect on whether BIM is actually achieving its core aims. By requiring all centrally funded government projects to utilise BIM Level 2, the mandate intended to drag the entire industry into the digital age. So, a year after D-Day, how has the landscape changed?

Perhaps predictably the discussion kicked off with the group bemoaning the lack of real progress that has been made in the past year. While levels of adoption and awareness have undoubtedly continued on a positive trajectory since the mandate came into effect there was an overwhelming sense that the enthusiasm for BIM that was generated has not been fully taken advantage of – a picture painted by the results of our survey.

“The industry as a whole has not moved on enough,” stated Jill Guthrie, senior BIM manager for Willmott Dixon Construction. From a contractor’s point of view Guthrie believes that the message has not been...
heard by those in charge of the capital expenditure, which in turn causes issues for those wanting to push for the implementation of BIM. Again, as highlighted in our survey, clients remain a sticking point to progress. “Clients still do not understand what they are asking for or what BIM is,” said Guthrie. “The majority don’t have any idea and basically see BIM as a cost. This is a massive issue for us, especially when we are trying to embed this in a business – how do we then explain to our directors that this is what we need to be doing?”

Jason Ruddle, chief operating officer at Elecosoft, agreed that progress had not continued at the pace some had expected. “There is a lot of smoke and mirrors in the marketplace,” he responded. “From the software side we are seeing an uptake, but we still see it siloed in the different disciplines. The sharing of data is not to the level where it should be.”

Ruddle also highlighted the fact that since the mandate was implemented the government’s messaging has become weaker, citing the recently released Housing White Paper that did not contain a single reference to BIM or digital construction.

“The government shouldn’t take its foot off the pedal and say we’re there. We still have to work very hard at proving the benefits,” he urged.

Some of the leaders that were pushing towards Level 2 are now thinking about Level 3, pointed out John Adams, building construction strategy manager, EMEA, at Autodesk. “Everyone was focused on BIM Level 2, which was great in terms of having an objective to meet, but people saw it as a destination to get to. Immediately those leading that race are now trying to get to the next thing. But the industry needs to work well on Level 2 before we move forward to Level 3.”

The feeling that the industry had lost its way slightly was also voiced by David Jellings, managing director for UK at BIM Object. “In my opinion the industry has stagnated in the past 12 months. I agree with Jill [Guthrie] that we need to get clients more involved and have greater involvement of the supply chain.” He also believes that the industry may be deluded in overestimating the levels of BIM adoption: “In terms of people employed in the market I think the number of people engaging in BIM is still in single figures.”

Echoing much of the debate and summing up the feelings of the group on the past 12 months, Francis Ho, a partner at host company Penningtons Manches, added: “It has in some ways been a lost year. The other B-word [Brexit] has robbed a bit of momentum. It’s been difficult – there’s been projects on hold and people are looking at retrenching costs. The investment in BIM, staff and training has been less evident.”

On a positive note, however, he continued: “Overall, there is a growing awareness in the market. When we had this event two years ago we were much more cynical about penetration. Now people know what Level 2 is even if they are not using it.”

Rounding up the first section of our debate Eddie Tuttle, associate director for policy, research and public affairs at the CIOB, summed up pragmatically: “When you have an initiative like BIM that was government driven it was always going to take a little time to get the industry on board and that is where we are at.”

Feature BIM round table

Round table attendees (from left to right): David Jellings, BIM Object; Peter Trebilcock; Eddie Tuttle, CIOB; Steve Martin, ECA; Jill Guthrie, Willmott Dixon; Adam McCall, Arcadis; John Adams, Autodesk; Sonia Zahiroddin, HS2; Jason Ruddle, Elecosoft; Francis Ho, Penningtons Manches

“Government shouldn’t take its foot off the pedal and say we’re there. We still have to work very hard at proving the benefits.”

Jason Ruddle, Elecosoft
Profitability
The question now being asked is: what exact benefits does BIM give and is it matching up to the early promises? This is certainly something that is at the forefront of clients’ minds, as Adam McCall, BIM consulting lead at Arcadis explained: “Very much over the last 12 months we are finding that our clients know about BIM, but now they want a lot more information about the benefits. They want us to break down the benefits over the life-cycle of the project.”

He continues: “The industry has talked about a 20% saving in capex, but what does that look like? Where is that saving going to be? What do I need to do as a client to have a BIM-enabled project?”

Clients responding to our survey were certainly less positive about cost savings than contractors or designers.

So does this evidence exist? Peter Trebilcock stated that for the evidence to really become clear we needed to have a portfolio of projects that have been completed with all participants using BIM. This has not yet happened, he said: “The nature of the industry is that there haven’t been many projects completed where every member of the team has been engaged. If you just have the designers using digital tools you will not lever as many benefits as if you have the whole team working on it.”

Willmott Dixon’s Guthrie agreed that finding comparable data on cost is extremely complex: “One of the difficulties that we have is trying to compare a leisure centre that we completed two or three years ago in a non-BIM environment to something recently completed with BIM. There are so many variables which makes comparing the two very difficult.”

Autodesk’s Adams, however, believes that there is a wealth of evidence demonstrating the benefits of BIM: “There is evidence all over the place, but it tends to relate to a particular aspect of the project, not the whole life-cycle. I have seen no evidence of BIM costing more or slowing things down, only evidence of it improving things.”

However, finding the 20% saving that was touted by the government when the BIM mandate was launched in 2011 is proving very elusive. “One of the problems we are facing is that there were promises made,” said Jellings. “I like to think of it like a clinical trial in medicine. These trials take place over a number of years before a result is published. What we are trying to do is publish a result during the process, which is an extremely difficult thing to do.”

Productivity
With cost being extremely difficult to benchmark due to the unique nature of the projects undertaken in the UK, is BIM achieving the other targets that were set out for productivity, an area that is potentially easier to measure?

Although not covered by the mandate, HS2 is a project that has fully embraced the ideals of BIM. Here a lot of work is being conducted to justify the use of BIM and to record its benefits, said Sonia Zahiroddiny, BIM strategy manager at HS2. “We are conducting a benefit mapping exercise to identify the key benefits at different stages of the project. We need to make sure that we are getting the most value from BIM,” she said.

Understanding the benefits BIM is bringing is one of the key outcomes for Zahiroddiny and to help others learn from the experience HS2 hopes to release a report on the benchmarking in the near future.

Although it has been a steep learning curve, Zahiroddiny believes in the long-term HS2 will reap the rewards: “It’s not easy but it’s definitely worth a business learning what benefits they will be getting from their assets. It is a cost upfront, but it is cost versus a longer term value.”

Small wins, big gains
What became clear during the discussion is how improvements in productivity are being made throughout the build process both in design and on site. Often these improvements were on a small scale and not necessarily perceived as BIM, as Trebilcock has observed first hand: “I’ve seen site operatives using tablets and software that links to BIM models that they can do their snagging lists and reports in 10 minutes that would take them an hour. If you say that’s BIM they don’t believe it.”

At Willmott Dixon, Guthrie is overseeing similar advances: “The benefits to the contractor are these small things. Forget about the term BIM, it’s these little wins that together are resulting in huge benefits for us.”

Adams continued the chain of thought: “All the little bits of data starts to add up. As we start to capture more low-level
data on multiple projects we can roll the
data back up. Over time the digitalisation of
construction sites will start to collect
enough data that we’ll see more evidence
of where causes can be found and paths
can be changed to make the process better.”

**Is health and safety even a consideration?**
BIM and digitalisation was also promoted
as being a tool to help improve health and
safety. However, rarely are BIM and health
and safety discussed together, as Steve
Martin, head of specialist groups at ECA,
made clear: “I don’t think that connect
between BIM and health and safety has
been made yet to say looking at this
model we can look at risk assessments
for the site. It should be.”

Zahiroddiny explained that on HS2 health
and safety is part of their future thinking
on BIM. “We are trying to understand how
to progressively enhance the existing
manual processes and link health and
safety information to BIM to expose risks
throughout the asset life-cycle. At the
moment it is very much proof of concept.”

This is not the case for all clients, however, as Arcadis’s Adam McCall made
clear: “We don’t see clients being able to
position BIM as a top three driver to enable
their H&S objectives.”

Trebilcock reinforced this position
stating that clients see health and safety
as a given, and something that contractors
are expected to deliver: “Looking at a
project’s costs a client wouldn’t dream of
saying could we take a health and safety
manager off, but a BIM manager is a fair
target, because they don’t get the value.”

**“It has in some ways been a lost
year. The other B-word [Brexit] has
robbed a bit of momentum.”**

Francis Ho, Penningtons Manches

It seems that with health and safety, as
with profitability and productivity
quantifying the benefits of BIM is still an
extremely difficult task, even a year after
the mandate came into force. Until these
benefits can be clearly demonstrated,
convincing clients, contractors, designers
and the supply chain to fully engage with
BIM will remain an uphill battle.

### CM’s BIM survey 2017 results analysed

During January and February, *Construction Manager* once again surveyed our readers to
gauge how user trends had moved since the 2016 survey. Here’s what the results revealed.

#### The respondents
The survey had 392 respondents, including
63 clients, of which 41 worked in the public
sector and 22 the private sector. And 42
said they were project managers either
working in the private or public sector.
Spendingwise, our client respondents were
also drawn from across the spectrum, with
roughly a third in the £10m or less bracket,
a third in the £10m-£100m and the
remaining third bigger spenders with
budgets of between £100m and £1bn plus.
In terms of other respondents there
were 55 tier one contractors working for
companies with a turnover of £100m or
above and 24 below that figure; 16 tier
two, or specialist contractors; 105 said
they were design consultants; 22 cost
consultants; and 65 were people in other
disciplines in the built environment.
The values of contracts respondents
were procuring or working on in the
coming year were also spread: a third
working on projects of £10m or under;
roughly a third in the £10m-£100m range;
and a third were £100m-£1bn or above.

#### As a client, what are your
requirements on BIM?

<table>
<thead>
<tr>
<th>Year</th>
<th>We ask for Level 2 BIM as a contractual requirement on 100% of our projects</th>
<th>We ask for Level 2 BIM as a contractual requirement on most projects (over 50% by number or value)</th>
<th>We ask for Level 2 BIM as a contractual requirement on some projects (under 50% by number or value)</th>
<th>We ask for BIM, but our requirements will be below Level 2</th>
<th>We ask for BIM, but our requirements will go beyond Level 2</th>
<th>We do not make BIM a requirement on our projects, although teams are free to use it</th>
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#### How many past and current projects has your
organisation been involved in that use Level 2 BIM?

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#### How often have you encountered BIM
as a contractual requirement when
bidding for new work?

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Feature BIM survey

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How many past and current projects has your organisation been involved in that use Level 2 BIM?

The number of respondents saying the organisation they worked for had not been involved in BIM was still high at 38%, but this had fallen from 49% in the previous year. Those who have been involved in 10 or more BIM projects has risen to 16% from 10% the previous year.

Broken down into the different industry tribes, larger tier one contractors and designers were clearly those with the most BIM experience:

- Clients – 52% had none, 4% had experienced BIM on 10 or more projects.
- For designers, the figures were 30% no experience and 22% 10 or more BIM projects.
- Tier one above £100m, this was 20% none, 30% 10 or more BIM projects.
- Tier one, below £100m, 40% in this group still had no experience, though 20% had experienced BIM on 10 projects or more.
- Finally, in terms of tier two, 52% had no experience and 10% 10 or more.

In terms of a company’s experience of the following “eight pillars of Level 2 BIM” on projects so far, responses to the 2017 survey showed that there had been progress in experiencing all eight, with the numbers who claimed to have already experienced BIM on 10 or more projects.

On projects you have worked on that used BIM, how would you describe the impact?

Evidence of positive BIM impact by profession (%)
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In the battle between David and Goliath in the construction industry, time and again David loses out, with smaller businesses in the industry having to wait far too long to be paid by larger “Goliath” companies. This can have a severe, and sometimes fatal, impact on cash flow.

Late payment in the construction industry has been a burden for small businesses for far too long. The government has acknowledged that prompt payment can “make all the difference to small businesses” – often the difference between a company continuing to trade and folding.

It has been under pressure for a number of years to make payment under contracts fairer and more transparent. In December 2008 it launched the Prompt Payment Code (“the Code”). The Code is a voluntary scheme for businesses to sign up to. So far, it has 1,909 signatories ranging from construction, engineering and transport and logistic firms to hospitality, healthcare and retail companies.

Under the Code, signatories undertake to pay suppliers within a maximum of 60 days, with the aim of working towards a 30-day time frame.

In addition, the government is seeking to enact the requirement under section 3 of The Small Business, Enterprise and Employment Act 2015 (“the Act”) providing a statutory duty for large companies to report on their payment practices. This is due to come into force on 6 April 2017.

What will need to be published?

Under the Act a “Qualifying Company” will need to publish a) payment practices and policies relating to relevant “Qualifying Contracts” (which is a pretty broad definition) and b) the company’s performance by reference to those practices and policies. This will include details as to its payment performance and will need to detail, as a percentage, how many invoices they paid (i) within 1-30 days (ii) within 31-60 days and (iii) after 61 days.

In addition to the processing and payment of invoices, other details will also need to be published, including the standard payment terms of the company and any which are not standard; comment on any disputes relating to the payment of invoices; and a statement as to whether the Qualifying Company’s payment practices and policies provide for the deduction of a sum from a Qualifying Contract.

Companies will be required to file their reports every six months, as opposed to quarterly, which was seen as too onerous under the initial reporting proposal. Some companies suggested annual reporting, but it was considered that this would not provide suppliers with timely accounts, potentially defeating the object of the regulations. The first reporting period in a financial year will be six months from the first day of that financial year and the...
second reporting period is for the remainder of that financial year.

What is a “large” company?
Although there is no definition of a “large” company under the Act, the minister of state for business, enterprise and energy has confirmed that there has been support for adopting the Companies Act 2006 definition of a large company. This was mirrored in the draft regulations on the Reporting on Payment Practices and Performance Regulations 2017, published in December 2016. The draft regulations state that a “Qualifying Company” will be determined with reference to turnover, balance sheet and average number of employees.

A Qualifying Company will therefore have:
- An Annual turnover exceeding £36m.
- A balance sheet total exceeding £18m.
- An average number of employees exceeding 250.

The regulations will apply to a company for every financial year in which it is a Qualifying Company, however, it cannot be a company in its first year of trading. The draft regulations propose a strict sanction on companies that fail to publish a report, or produce a false statement, incurring a financial penalty. There is presently no comment as to the level or cap of these fines.

What the future holds
Results have shown that under the Prompt Payment Code, companies have reduced the number of days an invoice remains unpaid. This is a step forward in supporting smaller businesses, especially in construction, where cash flow is essential.

Once the new proposals are enforced under the Small Business, Enterprise and Employment Act in April, larger companies will need to comply, or risk being fined. The results will be publicly available and it could be embarrassing for large companies to reveal ongoing disputes or slack payment practices. On the other hand, it presents an opportunity for these larger organisations to showcase how good they are in respect of payment, compared to their competitors in the market place, a chance to make them more attractive at tenders and to outside investors.

All in all, this must surely be a good thing for the construction industry. There will shortly be incentives that were not there before and it is hoped that this will lead to more efficiency in the payment process, cut out the excuses and lead to quicker payment for contractors and subcontractors alike. This can only be a step in the right direction for smaller businesses in construction, aiding their cash flow – giving David more power against Goliath.

Mark James is a partner and construction lawyer at Coffin Mew

Getting the measure of global standards
As business becomes more global, professional practices are also increasingly demanding global rules. We have seen this in the accounting arena, with International Financial Accounting Standards (IFRS), and, with 70% of global wealth in land and property, valuation, measurement of property and ethics are ripe for international standards.

Construction is a large contributor to world GDP and is recognised as having a significant “multiplier” effect on national economies. It is also increasingly a globally mobile industry, in which investments in, and the implementation of, projects is carried out on an international basis. Global investment in construction is also rapidly changing and standards are required in emerging and developing economies.

However, uncertainty, or risk, is a significant drag on investment in construction and infrastructure. In turn, uncertainty is often caused by a lack of comparable, consistent and collaborative cost standards.

The lack of international measurement standards means that comparison of the cost of construction works between countries is inefficient and inconsistent, creating uncertainty and adding risk to investment.

The International Construction Measurement Standard (ICMS) coalition was established by non-profit organisations representing professionals in more than 140 countries to fill this gap.

The group aims to create an overarching international standard that will harmonise cost classification to enhance comparability, consistency and benchmarking of capital projects in buildings and infrastructure. It has 43 members, including, in the UK, RICS, RIBA, ICE and CIOB.

The ICMS standard principles will integrate and overlay with detailed measurement standards in accordance with local market jurisdictions (for example, the New Rules of Measurement in the UK) to ensure they are adopted.

The standard has been drafted by the ICMS standing setting committee and the first public consultation ended in January 2017. A second public consultation will be undertaken in February and March 2017, with a view to publishing the standard in July 2017.

Increasingly, governments and industry are engaging to shape the standard. At an ICMS panel debate in February representatives from Arcadis, Arup, Balfour Beatty and Faithful & Gould emphasised that ICMS will be an important part of their internal cost processes. Not only will it allow consistent cost presenting between global markets, but it will also allow a standard cost classification for emerging digital practice using BIM.

It was recognised that large multi-use projects, such as HS2, will benefit from a standard that allows cost data to be compared internationally to establish robust benchmarks. This would allow a “design to cost” approach rather than ”cost a design”.

As overseas developers continue to invest significantly in UK property and the construction industry and professional services are seen as key to the UK post-Brexit global export potential, ICMS is as relevant to solely UK practitioners as to international professionals. It will, though, require some new thinking.

Alan Muse FRICS is global director of built environment at RICS. For more information email amuse@rics.org or visit www.icms-coalition.org
Why a guaranteed maximum price can be contract hara-kiri

Small contractors need to understand the implications of fixed-price contracts if they are to avoid some serious subbie bashing, says Jonathan Parker.

I WAS RECENTLY involved in a project advising a subcontractor working on a swimming pool. My client called, explaining a series of problems they were encountering and asked me to advise on the best way forward. At the end of the call they mentioned, “it’s a fixed-price lump sum, and we think the contractor is going to get squeezed here, but we should be okay … right?” On quiet nights, I can still hear the echo of the alarm bells that started to ring.

As with nearly all contracts, they start with a smile, a handshake (and hopefully a signed contract) and works proceed as scheduled. Our subcontractor client had been given a series of drawings to price, submitted a tender and off they went. The phrases “fixed-price lump sum” and “guaranteed maximum price” (GMP) had been bandied around, and when our client had reviewed the contracts (a few months after starting) they seemed happy enough with what they had already signed up to. It became apparent soon after, however, that the client may have committed contract hara-kiri.

Our subcontractor, a demolition specialist, was aware of the principle of a GMP: the case being that the contract sum as stated in the contract shall not be exceeded. They had been told that the subcontract would be back-to-back and as such, they were signing up to this as well. In essence, GMPs create a ceiling, meaning that if the contractor gets close to the tendered amount, they start to panic, realising that they must bear any costs higher than the GMP, and ultimately seek to pass them downstream.

Of course, there can be a pain/gain element of any GMP. This normally takes the form of comparing the tendered sum with a final account, and if the contractor can demonstrate they were the reason for any savings, they are in for a share. However, I have been involved in too many projects where this is not fully understood by both parties, or shrewd employers have attempted to weigh all the gain against none of the pain.

In my opinion, the concept of a GMP is a bit of a fallacy altogether. Employers use it to try to fix a price and guarantee they will not have to pay any more than was agreed at tender stage. This comes down to a misconception that this ceiling will never be breached, and when it is, and someone has to pick up the bill, it ultimately leads to subbie bashing.

Risk transfer

Regardless of the misnomer or how a GMP is dressed up, employers want price certainty and to transfer risk where they can to the contractor. Transferring risk causes problems itself, with liability, indemnities and the often relied upon transfer for everything that comes out of the heavens and lives in the ground below. If the contractor comes across these, claims will still be made and when it comes to tagging a GMP badge onto a contract as well these claims, more often than not, turn into disputes.

So what about our demolition subcontractor? Well, we know in this life there are only three certainties: death, taxes and compensation events. It is when the latter of these arise that the contractual documents and obligations
**Construction Professional**

"We know in this life there are only three certainties: death, taxes and compensation events."

It is this problem where my real gripe lies with GMPs. Larger contractors, with bigger purses or legal teams can afford to either fight with the employer, or defend against claims from the subcontractor. Meanwhile, small subcontractors that can’t afford to fight, or don’t understand the implications of what they are signing up to, are put to task and forced down the adjudication or litigation route.

Understanding the implications of signing up to fixed-priced contracts cannot be understated – by both sides. It is generally the misunderstanding that transferring of risks and attempting to shift the liability will not stop the contractor (and in turn subcontractor) from claiming. There is also a lack of understanding from our constructor clients and their teams in terms of what they are signing up to.

A GMP does not mean that you are not entitled to additional costs if a change/variation arises, and a contractual mechanism is in place for you to claim an uplift. Too often GMP contracts are signed, and “fixed price” is taken to mean “bash the subbies”. Or as with the example we have highlighted, it translates to “we need Quigg Golden for this one”.

In today’s market, it’s very easy to accept every contract which comes your way, regardless of potential risks. In this example we resolved the matter and the subcontractor learnt a valuable lesson.

Something like this is exactly what happened to our demolition subcontractor. In short, there was an inconsistency between the drawings and spec. The employer had believed they had transferred this risk to the contractor, and as such, the contractor believed they had in turn passed this on. When the subcontractor put together their claim, the contractor merely waved the contract and said, “but you signed up to this fixed price, I don’t have to pay you”. In reality it translated as “I’m not paying you unless I can guarantee the monies from the employer”, which stinks of the type of subbie-bashing the Housing Grants and Local Democracy Acts tried to get rid of.

Jonathan Parker is a barrister and director of Quigg Golden

By Nigel Goddard, director of building surveying at Pellings LLP

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● Working with Lambeth Council as a pilot project to mentor James Dublin, a former Lambeth apprentice, who is now an established local carpenter. Pellings has provided a “business booster start-up programme” and with ongoing mentoring support has helped Dublin to create a standalone local construction business employing 12 local people, creating a social value outcome of around £50,000.

● A pilot project bringing together four specialist organisations to deliver ex-military people into meaningful, sustained employment in construction. This ongoing project, with an expected social value outcome of £300,000, seeks to deliver four 12-week “access to work programmes” for up to 48 ex-military jobseekers over a rolling 12-month period.

Pellings’ aim is to support both its clients and contractors in looking at new ways of delivering more focused and higher level social value outcomes on construction projects, particularly with SME contractors/supply chain members.

By creating local “community business support hubs”, the objective is to develop and support wider local businesses and residents within communities in conjunction with networks of established community enablers. These include organisations such as Handy Heroes, Salute My Job, Mount Prison, London Youth, and women in Social Housing – as well as our local authority and housing clients.

Using a “step on, step up” process that is part of an urban legacy delivery, we identify potential construction industry candidates from the community, get them “work ready” through CV support and life skill coaching, mentor and coach them through the “apprenticeship” phase, develop enterprise through incubator support and then help them through the growth phase for individual supply chain businesses.

I see this approach as a catalyst for employment and training of wider technical, professional, administration and support skills that is needed by the industry, but which includes an element of long-term retention of trades and construction management within the local community to fulfil future construction requirements.

We believe this approach should be of great interest to bid teams and indeed construction managers in dovetailing contractual CSR requirements into localised delivery models and helping to tackle the ongoing skills crisis.

By Nigel Goddard, director of building surveying at Pellings LLP
School building frameworks explained

With £10bn to be invested in schools over this parliament, according to the chancellor at least, Assad Maqbool analyses the procurement routes and the opportunities for contractors.

THE SPRING BUDGET announced further spending on schools: capital investment in schools continues to be a priority. At the same time, the Department for Education’s executive agency, the Education Funding Agency (EFA), is procuring the entirety of its construction framework, so contractors have a great opportunity to bid for work on new and refurbished school buildings.

The chancellor announced in the Budget that a further 110 new free schools would be funded during this Parliament, on top of the current commitment to 500. There is also an additional investment of £216m in existing schools over the next three years. By the chancellor’s reckoning, that took total investment in school condition to over £1bn in this parliament.

The two main streams of capital funding are the free schools programme and the Priority School Building Programme.

Free schools are government-funded and are not run by local authorities. The building programme also includes university technical colleges, which specialise in subjects such as engineering and construction along with business skills and IT. Studio schools, small schools delivering mainstream qualifications, are also included in the programme.

The Priority School Building Programme focuses on rebuilding and refurbishing school buildings in the worst condition and its second phase, PSBP2, includes individual blocks at 277 schools which are to be rebuilt and refurbished using capital grant. The EFA’s plan is for all PSBP2 schools to open their new or refurbished buildings by the end of 2021.

Part of the success of the delivery of free and priority schools has been the streamlined way in which the EFA has procured the consultants and contractors. Much of the EFA’s work in streamlining the programme has been the very difficult task of standardising its approach to risk across a range of projects across the country, including setting up its own frameworks with consultants and contractors with standard contract terms.

The contracts are either based on the JCT suite or, in relation to high-value projects, on its own standard form contract which has its roots in the old standard form of project contract SOPC4 and was used and developed through the academies and Building Schools for the Future programmes and through the first phase of the Priority School Building Programme.

Unsurprisingly given the need to ensure that the contract management of a vast number of idiosyncratic projects does not become entirely unwieldy, the EFA is loath to amend its standard form contracts, once signed up to under a framework. To ensure that aim is achievable, its contracts share risk on a reasonably market-standard basis.

Currently, the EFA is re-procuring the entirety of its construction framework. Since a prior information notice for the £6bn framework was issued by the DfE on 19 May 2016, the EFA has been running a series of market engagement events to gather feedback from contractors, trade associations and industry groups in relation to the design of, and the procurement strategy for, their new construction frameworks.

Part of that has again been engaging on contract forms and standard risk positions which are acceptable in the market. The EFA will continue to procure construction projects on a two-stage basis with a pre-construction services agreement covering the design stage. The bespoke risk positions that the EFA has refined over a number of years include the requirements for safeguarding of children, the risk in relation to judicial review of projects, the need to stop projects during exam periods, and delay risk linked to the start of term periods and half term breaks.

However, the greatest change in the procurement strategy has been the way in which the lots are to be organised in the new construction framework. They will be distinguished by value of project: high, medium and low. The high-value band will have a few contractors in each of the north and south regions carrying out the largest individual schools projects. The medium-value band will split the country into a number of regional lots, and the low-value band lot will further split the country into a number of smaller regions.

The framework re-procurement represents a vital opportunity for contractors to carry out school projects over the next four years and the EFA’s strategy would clearly suggest that small- and medium-sized contractors will have a much greater chance of winning a place on this panel.

Assad Maqbool is a partner at Trowers & Hamlins specialising in projects and construction
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Eurowall® +
High performance PIR insulation for full fill masonry cavity wall applications

Recticel Insulation is a reliable and experienced insulation partner, providing high-quality solutions for home owners, house builders and specifiers. As your insulation specialist, we can work together to create a comfortable and better inside climate, today and tomorrow.

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Don’t leave occupational health in the dust

Construction dust is not just a nuisance, it can seriously damage workers' health and some types can eventually kill. Chris Chapman, technical support manager for the Building Safety Group, explores the issues around controlling dust risks on site.
ANNUALLY, AROUND 3,000 workers in the construction sector suffer with “breathing and lung problems” they believe have been caused or made worse by their work.

While this equates to just 0.14% of workers in the sector, the rate is statistically significantly higher than for workers across all industries (0.08%). Almost 20% of workers reporting work-related respirator problems identified “dusts from stone, cement, bricks or concrete” as contributing to their condition.

Construction workers have a high risk of developing dust-related diseases because many common construction tasks can create high dust levels. More than 500 construction workers are believed to die from exposure to silica dust every year.

According to the Health & Safety Executive (HSE) dust is a general term used to describe different dusts that may be found on a construction site. There are three main types:

- Silica dust – created when working on silica-containing materials such as concrete, mortar and sandstone (also known as respirable crystalline silica or RCS);
- Wood dust – created when working on softwood, hardwood and wood-based products such as MDF and plywood;
- Lower toxicity dusts – created when working on materials containing very little or no silica. The most common include gypsum (for example in plasterboard), limestone, marble and dolomite.

Anyone who breathes in these dusts should know the health effects and damage they can do to the lungs and airways. The main dust-related diseases affecting construction workers are: lung cancers; silicosis; chronic obstructive pulmonary disease (COPD); asthma.

Some lung disease, including advanced silicosis or asthma, can come on quite quickly. However, most of these diseases take a long time to develop and have a high latency period. This means that dust can build up in the lungs and harm them gradually over time.

The effects are often not immediately obvious. Unfortunately, by the time it is noticed the total damage done may already be serious and life changing. It may mean permanent disability and early death.

The amount of dust needed to cause this damage is not large. In 2015 scientists at the University of Surrey found peak concentrations of potentially harmful ultrafine particles reached up to 4,000 times local background levels when undertaking building activities such as drilling.

Inhalation of these particles is linked with serious cardiovascular and respiratory system related diseases, with ultrafine particles penetrating deeper into the lungs. The researchers also found that the greatest ultrafine particle emissions occurred during wall chasing (cutting grooves into a wall using an electrical tool, for example, to lay electrical cables).

Reductions in occupational disease in construction have also not kept pace with improvements in safety management. It is estimated that approximately 100 times as many people lose their lives from ill-health caused by working in construction compared to fatal accidents, so it is not surprising that the Health and Safety Executive (HSE) has made “occupational health” a focal point, with site blitzes expected to continue.

It also explains why the HSE is encouraging companies to work in partnership with organisations like the Building Safety Group (BSG) to help improve occupational health in the workplace.

The BSG is working with construction companies to improve occupational health management (OHM) by reducing the costs of managing ill health, sickness absence, and to prevent and remove health risks in the workplace. This should ensure that statutory responsibilities are met whilst helping construction businesses to maintain a healthy workforce.

You cannot manage what you have not measured. As far as health and safety is concerned this applies to every aspect of construction, from hazard identification to risk assessment and control.

Inspections carried out by BSG for construction companies provide a measure of the strengths and weaknesses for each site appraised. Combining the results for all companies highlights patterns and areas of health and safety in need of improvement.

In 2016 BSG conducted approximately 20,000 site inspections throughout the UK. From these inspections a total of >
Feature Health and safety

“Most of these diseases take a long time to develop. This means that dust can build up in the lungs and harm them gradually over time.”

> 24,634 non-compliances were recorded (ref 1). A total of 3,966 occupational health-related non-compliances were recorded in 2016 and 33% of these were identified as dust and fume hazards.

By focusing on areas of non-compliance the inspections help to reinforce the management systems that control risk. Dust and fume management can be broken down into a series of steps:
- Identify hazards;
- Assess risks arising from those hazards;
- Control risks;
- Review and monitor to ensure effectiveness of controls and management systems.

These are explained in detail opposite.

References
1. Non-compliance data is extracted from BSG’s Non-Compliance Reporting Index (NCRI). The index is used to support the only known real-time, reporting service which compiles high volume health & safety non-compliance data, collected for and on behalf of the construction industry through site inspections. More than 20,000 site inspections were conducted in 2016. Approximately 25,000 non-compliances were recorded in total.

www.bsgltd.co.uk

Four steps to dust and fume management

**STEP 1**
Identify the hazards
The first step is to identify the substances that can potentially contaminate air. Examples include:
- **Dusts:** Asbestos, silica-containing dust, wood and cement powder.
- **Fumes:** Including diesel fumes and those arising from welding, brazing and soldering.
- **Vapours:** From solvent-based paints.
- **Gases:** Carbon dioxide, sulphur dioxide, nitrogen oxides and carbon dioxides from internal combustion engines.

One source of information is the label on the container. This will include a pictogram and some explanatory text. The product safety data sheet will give you far more information. All product safety data sheets must have 16 sections that are laid out in the same way.

Examples of these sections are:
- **SECTION 2** Hazards identification. Usually, this will give a concise summary of the physical, health and environmental hazards of the product.
- **SECTION 3** Composition/information on ingredients. If the product is a mixture this section should list the hazards and percentage of each component.
- **SECTION 8** Exposure controls/personal protection. Advises on the controls necessary to reduce the risk from personal exposure.
- **SECTION 10** Toxicological information. Outlines health effects resulting from inhalation, ingestion, skin contact and eye contact.
- **SECTION 16** Other information including the revision date. The date is important to ensure that you have an up-to-date sheet.

Product safety data sheets will not necessarily cover hazardous substances generated as part of the process. Diesel engines, for example, emit a whole mixture of gases, vapours, liquid aerosols and particles. Diesel fumes are a class 1 carcinogen (ie a definite cause of cancer). But the product safety data sheet for diesel fuel will only give data on the health effects of the fuel itself and not diesel exhaust.

**STEP 2**
Assess the risk
The risk arising from a substance used in the workplace is made up of two components: the hazard; and the degree of exposure.

In the case of airborne contaminants the degree of exposure boils down to how much of the contaminant you are likely to inhale. Exposure depends on how much airborne contamination is caused by the work and the effectiveness of any controls already in place. Assessment may require measurement of the concentration of airborne contaminant for comparison against a workplace exposure limit (WEL).

**STEP 3**
Controlling risk
If a risk assessment shows unacceptably high levels of exposure necessitating additional control measures, in order of preference, the control options are:
- Eliminate the use of a harmful product or substance and use a safer one, such as formaldehyde-free medium density fibreboard.
- Use a safer form of the product, for example, use ready-mix mortar rather than dry cement to eliminate dust exposure.
- Change the process to emit less of the substance. For example, sweeping generates airborne dust so use a vacuum cleaner if possible instead.
- Enclose the process so that the product does not escape.
- Extract emissions of the substance near the source. For example, by using on-tool extraction when cutting stone with an angle grinder.
- Have as few workers in harm’s way as possible. For example, use job rotation to minimise “individual exposures”.
- Provide personal protective equipment (PPE) such as respiratory protective equipment when sawing or cutting.
- The use of Respiratory protective equipment (RPE) should always be the last resort in the control hierarchy and should only be used if preferred options are not viable. For airborne contaminants RPE may be necessary.
It is important to stress that fit testing should be carried out only on clean shaven individuals. Facial hair can compromise the seal between face and mask. Nor is it any good shaving for the fit test and then allowing the development of even “designer stubble”. If found during an HSE inspection, this could result in a hefty Fee for Intervention (FFI).

**STEP 4**

**Review and monitor**

The importance of this step is evident. For example, hazard ratings may change (diesel fumes moved up the hazard scale when its rating changed from class 2 to class 1 carcinogen). Where workers are exposed to high hazard materials health surveillance may be necessary.

**HSE advice is to check the controls**

- Having procedures to ensure that work is done in the right way.
- Checking controls are effective. Does the work still seem dusty? You might need to carry out dust exposure monitoring.
- Involving workers. They can help identify problems and find solutions.

**Maintaining equipment**

- Follow instructions in maintenance manuals, regularly look for signs of damage and make repairs.
- Replace disposable masks in line with manufacturer’s recommendations.
- Properly clean, store and maintain non-disposable RPE. Change RPE filters as recommended by the supplier.
- Carry out a thorough examination and test of any on-tool extraction system at least every 14 months.

For those supervising workers, it is essential that they use the controls provided and follow the correct work method and attend any health surveillance where needed.

You may have to put a health surveillance programme in place. External audits such as BSG inspections help give an independent assessment of management systems.

A written health and safety policy is not enough. There must be efficient and effective procedures for occupational health and safety programmes to be successful.

“A written health and safety policy is not enough. There must be efficient and effective procedures for occupational health and safety programmes to be successful.”

Workers should be well defined and complement the efforts of the other towards a common goal of enhancing health and safety. Any programme which is implemented must also be constantly reviewed to help keep pace with changes in working practices which are often accompanied by new risks and hazards.

Introducing new procedures can be problematic if the company’s culture, behaviour and attitude towards health and safety is not ready to accept change. The most effective way to change behaviour is to improve knowledge and understanding; knowledge of the required health and safety practices to remain legal and compliant as well as understanding the consequences of ignoring them.

To encourage changes in practice it is vital that companies adopt a “top-down” approach to improving their safety management systems and health and safety culture. It is therefore critical for management to drive change and demonstrate their commitment, to increase the likelihood of adopting a safer company culture.
An insulation board that bridges the gap

As an alternative for mineral wool insulation in masonry wall cavities, polyisocyanurate panels offer ease of installation, water ingress protection and excellent thermal properties, explains Peter Wilcox.

THE ENERGY-DEFICIENCY of the UK’s ageing housing stock was once again thrown into sharp focus with the publication in February of a report by the UK Green Building Council. The Building Places that Work for Everyone policy paper states that 25 million homes across the country will not meet required insulation standards by 2050 – a significant year for the government, as by then it has to have met its legally-binding pledge to cut UK greenhouse gas emissions by at least 80% from the 1990 baseline. An enormous task, particularly as poorly-insulated homes account for 25% of emissions released in the UK.

The UK Green Building Council, which produced the report in conjunction with the construction industry, has urged the government to impose a countrywide programme of home renovation to increase energy-efficiency and improve the health, wealth and wellbeing of occupants. However, sceptics have already raised doubts over the potential success of such a scheme, citing the failure of the Green Deal.

Launched in 2013, the Green Deal offered loans to homeowners embarking on domestic energy-saving measures. It was scrapped two years later after figures revealed only 14,000 householders took up the option. The £50m government loan outlay fell a long way short of its £1.1bn forecast, with high interest rates for loans given as a reason for the Green Deal’s ultimate collapse.

There can be no doubt the thermal performance of UK buildings needs to be addressed urgently. Even though the 2050 deadline might be viewed by some as “an issue for tomorrow”, the spiritual and fiscal comfort of today’s homeowner/occupiers can be vastly improved with an energy-efficient interior. Insulation manufacturers are developing ever-inventive solutions in an attempt to put a thermal seal on the building envelope.

Insulation with a difference

Eurowall + is, an innovative, precision-cut, full-fill cavity insulation board produced by polyisocyanurate (PIR) manufacturer Recticel Insulation. In essence, it changes the way a wall works without changing the way it is constructed. It features a tongue-and-groove joint on the board’s four sides to ensure a tight, secure lock and guarantees increased protection against wind-driven rain.

Another innovative facet is its size. While many rigid full-fill products are 97mm or thicker for a designed cavity width of 100mm, Eurowall + offers a 90mm insulation board to achieve similar thermal performance while avoiding impeding conventional bricklaying techniques. Recording lower U-values while maintaining traditional cavity widths means existing house designs do not have to be adapted.

As well as offering excellent thermal properties, Eurowall + offers a cost-effective alternative to other forms of cavity wall insulation. The boards save on material costs, as items such as wall ties and lintels do not have to be increased in size to suit larger cavities. Comprehensive supporting details, such as thermal bridging calculations help to
Continuing Professional Development
PIR insulation panels

PIR insulation panels ensure that junctions are built correctly and the improved performance is accurately accounted for in Standard Assessment Procedure (SAP) energy calculations – a Building Regulations requirement for all new houses, conversions and some extensions – as part of a “fabric first” approach.

**Home reassurance**
By helping to achieve lower U-values in walls, Eurowall + contributes to reduced heat loss and better domestic energy efficiency, creating the ultimate benefit for homeowners: lower energy bills through reduced heating use. Eurowall + can help new homes to meet and exceed the requirements of Building Regulations Part L 2013 (England) and Part L 2014 (Wales) as part of the complete specification, reassuring the prospective homeowner that their future house is comfortable and energy-efficient.

Eurowall + was designed with the builder, as well as the end user, in mind. It addresses a common complaint from onsite trades that rigid full-fill insulation boards impede conventional bricklaying techniques. With a nominal 10mm air gap, Recticel’s reputation for quality technical knowledge is maintained by its support team, who are able to advise on the PIR insulation product that is most suited to your project. Ensuring that specification complies with the latest Building Regulations and other carbon reduction programmes as well as providing condensation risk analyses, U-Value calculations and advice on installation best practices.

Recticel PIR rigid insulation products are composed of a polyisocyanurate foam core with a closed cell structure. These products deliver a high thermal performance, contributing to a substantial energy saving in building projects and in turn increasing the comfort of the end user.

“After eight months, a Eurowall + board saves more energy than was used in its production.”

Recticel PIR rigid insulation products are composed of a polyisocyanurate foam core with a closed cell structure. These products deliver a high thermal performance, contributing to a substantial energy saving in building projects and in turn increasing the comfort of the end user.
Eurowall + was the product of choice for two large-scale housing developments that required cavity insulation offering excellent thermal capabilities as well as long-term protection against damp. The multi-million pound developments at Hedge End in Southampton, and Ludgershall in Andover, contain nearly 300 plots as part of a mixed social and private property scheme undertaken by Foreman Homes. To maximise the long-term thermal performance of each home, a reduced thickness, full-fill insulation board which allowed for lower U-values, was required. Eurowall + met the brief.

In total, 15,000 sq m of Eurowall + insulation board was installed across the two housing developments, which feature properties of two to five bedrooms. The panels' lightweight, easy-handling capabilities made for a simpler and more rapid application between the brickwork and internal blockwork of each building, than traditional glass or mineral insulation material – without compromising thermal performance. For Foreman Homes, it meant reduced installation times and onsite construction costs, while the eventual occupants will inhabit an energy-efficient home which maximises comfort and reduces annual fuel costs. Eurowall + also provides excellent resistance to external moisture, minimising the potential for long-term damp issues.

Explaining the decision to specify Eurowall + for both blue-chip housing projects, Gary Hunt, senior buyer at Foreman Homes, said: “Its high insulation values made Eurowall + the obvious choice for the developments. We not only wanted to achieve NHBC standards in terms of each property's thermal performance, our ambition was to ensure each home maintained its energy-efficiency for many years to come. Eurowall + will go a long way to helping secure that. For our onsite teams, the rigid foam board was a lot easier to handle than traditional forms of cavity insulation.”

The two-year works programme for both housing developments is expected to be completed in October 2017. The proven thermal capabilities of Eurowall + will help uphold each property's status as an energy-efficient asset for its owner and the environment.

Product fits the bill at Hampshire housing

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U-values under Part L of the Building Regulations

<table>
<thead>
<tr>
<th>Type</th>
<th>L1A - new dwellings</th>
<th>L2A - new building other than dwellings</th>
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<tr>
<td>Notional dwelling Limiting Values</td>
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<td>0.18</td>
</tr>
<tr>
<td>Pitched Roof 0.25</td>
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</tbody>
</table>

Building Regulations - England Part L 2013

U-values are part of wider assessment criteria to meet the requirements of Part L as a whole. Other factors taken into account include: airtightness, door and window U-values, the heating system, and thermal bridging. “Limiting U-values” are the worst acceptable level of performance, but designing to these values is unlikely to result in compliance.

The “notional building specification” is a recipe approach that will ensure compliance if all standards are met (see table below).

In-situ, Eurowall + helps reduce a home’s carbon footprint by cutting energy usage. Its production is carried out with the highest environmental considerations. It is manufactured using a blowing agent with zero ozone depletion potential (ODP) and low global warming potential (GWP). Therefore its...
PIR insulation panels specification displays a commitment to minimising energy consumption, harmful CO₂ emissions and impact on the environment. After eight months, a Eurowall + board saves more energy than was used in its production.

The tongue-and-groove joint negates the need for taping the boards’ joints – a major cost and time-affective benefit which sets it apart from similar products. Compared to other boards, Eurowall + is relatively straightforward to use. It’s flat and, when installed, the tongue-and-groove joints lock in tightly. The boards are easy to cut, and fit tightly around the wall ties.

Space creator
Installing full-fill rigid PIR board in wall cavities, rather than mineral wool, represents a change for bricklayers. Mineral wool products are tested by the British Board of Agrément (BBA) to the same rigorous standards. In normal conditions and installed correctly it should perform well.

The main benefit of PIR over mineral wool, however, is the reduction of wall thickness. For mineral wool to attain the same level of thermal performance as Eurowall + board, it’s estimated 150mm-thick 0.32Wm⁻¹K insulation would need to be installed, resulting in an accordant increase in the cavity wall size. And once the cavity width increases, wall-tie lengths have to be lengthened and window and door lintels expanded – the whole building process becomes more costly.

With developers looking to fit as many homes onto allocated plots as possible, maintaining a 100mm cavity in new buildings means room sizes can be bigger. Eurowall + 90mm board not only ensures a 0.18 U-value in a 100mm cavity, the 10mm air gap makes for a less inconvenient fit for bricklayers when it comes to installing it. Therefore, Eurowall + maximises space while minimising cost for house builders.

One of the main threats to cavity wall masonry construction is moisture ingress from wind-driven rain. The Eurowall + tongue-and-groove joint offers increased protection against damp caused by inclement elements. After all, prevention is better than cure, and once damp takes hold of a building, the expense and inconvenience involved in its removal can be significant.

Eurowall + achieved British Board of Agrément (BBA) certification in October 2015 (Certificate number (02/3908). It is also Local Authority Building Control (LABC) approved – no: EWW620. Its price per sq m is as follows: 75mm, £13.81; 90mm, £16.38; 115mm, £20.52; 140mm, £24.41.

The CIOB has a dedicated CPD portal on the Construction Manager website, featuring CPD modules from the magazine, as well as study topics from a wide range of industry experts. To complete the questionnaire below, and access the free CPD content, go to: www.constructionmanagermagazine.com/cpd

CPD test paper
Cavity Wall Insulation

1. Poorly insulated homes account for what percentage of UK emissions?
   - 40%
   - 50%
   - 25%
   - 10%

2. PIR is:
   - Polyisoprene
   - Polyurethane
   - Polyisocyanurate
   - Polyester

3. A Eurowall + board saves more energy than was used in its production after:
   - 6 months
   - 1 month
   - 8 months
   - 12 months

4. The notional dwelling U-value for external walls in existing dwellings under Part L is:
   - 0.18
   - 0.13
   - 0.25
   - 0.22

5. A 90mm Eurowall + panel costs:
   - £13.81
   - £16.38
   - £20.52
   - £24.41
Contact
THE CHARTERED INSTITUTE OF BUILDING MEMBERS’ NEWSLETTER
ISSUE 151 APRIL 2017

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CIOB appoints its first managing director

The CIOB has appointed Terry Watts as managing director reporting to the chief executive Chris Blythe.

Terry, who has extensive experience in the skills, construction supply-chain and technology sectors and in large and small business change management, started the newly created position in March. His role includes driving the CIOB’s next stage of development, delivering membership growth, operational efficiency and improving the quality of services to members.

The position was formed reflecting the growth and increase in the CIOB’s influence in construction, improving standards, skills and professionalism in the industry.

Reacting to his appointment, Terry Watts said: “The construction sector faces huge challenges and opportunities presented by new technology and changing skills requirements. I am delighted to be joining the CIOB which already leads the way in professional development of the sector and look forward to playing a part in building a successful future for this vital part of the economy.”

Chris Blythe OBE, chief executive at the CIOB, said: “As the pace of change in construction accelerates, we at the CIOB are determined to maintain our position at the forefront of preparing our members for developing their career in the industry. Terry’s appointment is another step in building the capability and capacity of the CIOB to meet our members expectations.”

Terry joins the CIOB having set up and run, as CEO, Proskills, the Sector Skills Council for the supply chain to construction, and more recently a portfolio of interim activities that saw him as principal of City of Oxford College, group international business director for a major training company and work in India, Vietnam, Egypt, as well as with the financial services sector in the City among other assignments. Terry started his career at IBM and spent a number of years with technology start-ups before joining e-skills UK, the SSC for the technology sector. He brings a broad range of management, change, project and marketing skills to the CIOB.

Look out for an interview with Terry in the May issue of CM.

EVENT

VISIT THE CIOB AT THE CONSTRUCTION RECRUITMENT SHOW

Exhibition 2017 at the NEC on 31 March and 1 April.

The CIOB will be among the exhibitors at the National Engineering and Construction Recruitment Exhibition. The event is the largest engineering recruitment event of its kind in the UK, attracting visitors from a variety of disciplines across engineering and construction. The show features job opportunities and careers advice from many of the world’s top engineering and construction recruiters; expert guidance on career progression in the Careers Advice Clinic; one-to-one CV consultations in the CV Clinic; free interview clinics and a Professional Development Hub.

The CIOB will highlight the opportunities available in construction management and is running a competition on the stand. Visit the CIOB on Stand D30.
Members offered a tour of Paradise: site visit to Birmingham’s biggest build project

CIOB Members in the West Midlands are being offered a site visit to the Paradise Circus project in Birmingham in April. It is a follow up from the first visit one year ago.

Paradise Circus is a £500m project to transform 17 acre area into a mixed use development of commercial, civic, retail, leisure and hotel space. It is the biggest scheme the city has seen for a generation.

The plan’s £160m first phase is being managed by Carillion and started in January 2015. It will see 250,000 sq ft of office space to be completed between 2017 and 2018 – One and Two Chamberlain Square. Pricewaterhouse Coopers announced in March 2016 that it will move into the top floors of One Chamberlain Square on a 20-year lease moving in early 2019.

Phase II will include a four star hotel as a replacement for the Copthorne Hotel who will take ownership of it before its current building is demolished. Phase II is scheduled for 2018 to 2021.

The final phase will comprise five buildings projected to be built between 2020 and 2025.

To book a space for the site visit, email gfloyd@ciob.org.uk

LAST CHANCE TO BOOK FOR SCOTTISH DINNER

There is still chance to book a place at the CIOB Annual Dinner in Scotland, which has a whole new look this year with a fresh line up of entertainment. The night - at the Doubletree Hilton in Glasgow - promises to get off to an explosive start with drum and pipe band Clanadonia and the evening is hosted by the award-winning radio presenter Des McLean, with presentations from the CIOB and entertainment from comedian Bruce Fummey. Live tweets will be on big screens all through the evening and the fun casino returns for another year.

Silver Packages are limited but still available but you can still book for Bronze Packages and individual seats. Contact lmckay@ciob.org.uk

Well done to Gerard Graham, chair of CIOB Belfast Hub, (pictured above far right) for climbing Slieve Donard (the highest mountain in Northern Ireland) in February. Gerard undertook the adventure to help raise funds for a new form of treatment for Triple Negative Breast Cancer. To learn more visit www.justgiving.com/crowdfunding/paul-graham-737.
New scheme hopes to create more construction managers and supervisors

A new apprenticeship in construction management skills is being developed in Wales by the CIOB and partners in order to help stem the shortage of managers and supervisors in the industry.

According to the past two CITB Construction Skills Network reports, there is a growing shortfall of supervisors and managers in the construction industry. Whilst there is a graduate route into these roles, the reality is too few graduates are coming through to meet current and future demand. There are also too few craft people progressing to supervisory/managerial positions in the industry although the situation is being eased by the introduction of the CIOB Higher Apprenticeship in Construction Site Supervision in 2015.

The construction industry is also failing to recruit sufficient numbers of the most academically able school leavers with appropriately good ‘A’ Levels. There is also a falling number of school leavers undertaking construction related technical qualifications in Wales.

In response it is proposed to develop a vocational education and training (VET) framework for completing ‘A’ Level pupils and those achieving Level 3 technical studies in a construction related discipline. The CIOB in partnership with the CITB and the University of Wales Trinity Saint David is developing a new Higher Apprenticeship in ‘Construction Management Skills’. Although currently there are no similar Higher Apprenticeship (HA) frameworks for this type of entrant running in Wales this is an opportunity to develop such a framework to meet the needs of employees and employers.

Carmarthenshire County Council runs a successful Shared Cadetship programme that is tailored not only for the specific needs of particular technical and professional roles but also provides transferrable skills and knowledge to deal with wider job roles and responsibilities. It is proposed to draw on the experience of this programme and the pilot one-year Higher Apprenticeship in Construction Site Supervision delivered by Coleg Sir Gar and supported by CITB.

The programme will be structured to offer seamless progression starting year one of a purposely developed Higher National Certificate (HNC) or the CIOB Certificate in Site Management. Regardless of the year two pathway apprentices will also undertake an appropriate NVQ in year two.

CIOB MEMBER LAUNCHES ONLINE EBOOK RESOURCE

A member of the CIOB has launched his own construction ebook store with over 40 titles already in stock. Vince Holden MCIOB (pictured) has developed the resource primarily to help self-build projects and allows users to select ‘chapters’ relevant to their needs.

Holden says the idea for the store came from his experience that “no two self builds are the same, so wouldn’t it be useful to cherry pick information?”. “The idea is that a person can create their own specific ‘book’, by only including the chapters that are of interest to them and their project,” explains Holden. “Some of the ebooks are individual chapters from Self Build Project Management books, and others are articles providing accurate but user friendly information, in convenient sized chunks, that will not bog you down with superfluous technicalities.”

Check out the resource at http://www.vinceholden.com/online-store
Politicians, award-winners and rugby captains gather at CIOB in Ireland annual dinner

Nearly 200 people attended the CIOB Annual Dinner at the Hilton Hotel in Belfast in February.

With 18 top table guests from various professional bodies and organisations, along with representatives from a vast array of firms from throughout the construction industry, this was one of the CIOB’s largest events in recent years.

The evening was hosted by Gerard Graham, chair of the CIOB Belfast Hub, who gave an update on changes to the Institute, including the recently launched CIOB Academy. Tom Reid, director at the Department for Infrastructure delivered the keynote industry address and highlighted that there will be an increase in early contractor involvement as well as more use of Design & Build contracts for future public sector construction projects.

The special guest was Paul Marlow from McAleer & Rushe, who was crowned CIOB Construction Manager of the Year UK for his work in project-managing the construction of a £29m student tower block in London. In landing the prize and beating 85 other finalists, at the age of just 30 he has become the youngest ever holder of the title throughout the competition’s 38 year history. Other local finalists in the competition who were recognised were Ciaran Tiffany from McAleer & Rushe (category winner), Seanie O’Hare from O’Hare & McGovern, Declan Doherty from Farrans Construction and Paul Mc Clements from Farrans Construction.

Students who won prizes were Julie-Ann Steele and Kerry Breen, along with their partners Russell Smyth and Kieran McManus. O’Hare from O’Hare & McGovern, Declan Doherty from Farrans Construction and Paul Mc Clements from Farrans Construction.

Students who won prizes were Julie-Ann Steele from McAleer & Rushe and Kerry Breen from Translink for top marks respectively on the full-time and part-time BSc (Hons) Construction Engineering and Management course at Ulster University, while Adrian Mullan from Mac-Interiors was awarded best Chartered Management Programme (CMP) student in Ireland. Draperstown-based Heron Bros was applauded for having the most conferrers at the recent CIOB Conferring Ceremony at Parliament Buildings, Stormont.

Retired Ireland and Ulster Rugby Captain Andy Ward was the after-dinner speaker and recalled various amusing stories about his professional rugby career.

The event concluded with a presentation to David Little – long-serving member of the CIOB for his services to the Institute.

Sponsors of the event were Ridgeway, Hays, Tughans, JP Corry, Creagh Concrete, Training LMS and Keystone Group.

MEMBER NEWS

Peter Jenks MCIOb achieved the highest marks for his dissertation

CIOB member Peter Jenks has been awarded a Certificate of Excellence certificate and a prize of £50 vouchers for his outstanding undergraduate dissertation entitled ‘An investigation into the sustainability of the reduction of volatile organic compounds in paints for buildings in the UK’ for the BSc(Hons) Construction Management degree.

Peter achieved the highest marks in the dissertation in a CIOB accredited course. Peter currently works at Richardson Decorating Contractors Ltd as contracts supervisor and attended Solent Southampton University as a part time student. He has over 30 years’ experience in his field.

Peter Paints his way to Prize of Excellence

CIOB Fellow John Edwards has recently been appointed to the honorary position of Professor of Practice at the University of Wales Trinity St David within the Faculty of Architecture, Computing and Engineering.

Edwards is a director of Edwards Hart Consultants, where he leads on building pathology, building conservation, energy efficiency, project management, research, standard setting and training. Clients include the National Trust and Edwards Hart is the lead consultant on Trafalgar Square in Sunderland: a three year major repair and refurbishment project to a well-known listed building. This project is featured in the CIOB Academy Understanding Building Conservation course.

Edwards is a widely published author on heritage and conservation and regularly delivers training courses, including for the CIOB Academy. He is also a member of the CIOB Wales Hub and the CIOB Policy Board.
Verity Kelly
Construction project management student, Aston University and assistant site manager, Mace

Q Tell us a little about your career to date, your placement experience and your career ambitions.
I am a BSc Hons construction project management student at Aston University, Birmingham currently on placement with Mace Group. I started in the construction industry at 19 as a repair and maintenance summer intern at Shaylor Group. This was my first proper experience of a construction site. I absolutely loved being able to be hands on on site and actually see what we had achieved as a team over a few months. I was able to work on the project as a trainee construction manager and also trainee quantity surveyor; this allowed me to learn about all aspects of construction projects. My career ambitions are to graduate in 2018 and then achieve my MCIOB status in 2020. After I graduate I hope to work towards my MCIOB status working through the PDP with the experience I have been able to gain in my career so far.

Q What made you choose a construction degree/career? What other career path might you have chosen?
The construction industry appealed to me as it’s hands on and you can see the impact of your work - I can go back to previous projects and say, “I helped build that”. The reason I chose a construction degree is because I wanted a degree that would help me in my career and have practical application. Also, after carrying out work experience as a quantity surveyor at Courderoys when I was 18, I knew the construction industry was for me. I have always enjoyed studying but the thing I find most interesting is when I can actually apply my knowledge. I enjoy working with people and within teams - I loved playing team sports at school and I enjoy it when you can get the same team spirit going as part of a construction project.
If I hadn’t chosen a career in the construction industry I would have followed a career in accounting and finance. I liked that it is logical and mathematical, but I would get bored in an office environment; I love being able to go on site and get my boots dirty.

Q How involved are you with CIOB? How important is gaining MCIOB status to you and why?
I am on the West Midlands CIOB Novus committee. This has enabled me to attend events and has been great for networking and my personal development. I was lucky enough to take part in the 2016 CIOB Novus Challenge in Bristol and came second after a very enjoyable weekend.

Q What do you do when you’re not working/studying? How do you spend your free time?
I enjoy playing squash, going to the gym and running (my current running challenge is the Birmingham 10K as part of a site team I am leading). I also enjoy walking and taking photos.

“I would have followed a career in accounting but I’d get bored in an office; I love being able to go on site and get my boots dirty”
MEMBER BENEFITS

FULL CORPORATE MEMBERSHIP OF CIOB brings with it many benefits, including exclusive access to discounts and special deals on products and services that could enhance your professional development, help your business or boost your earning power. Products and services currently on offer from our special partners are listed below...

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View the film at http://www.ciob.org/masterminds-construction or to take part in the next programme in the series contact james.linden@itn.co.uk

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Visit our partnership website www.peugeotcontracthire.co.uk/ciob or call 0345 313 3811 to discuss your requirements.

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EAST OF ENGLAND
A14 Upgrade
4 April, 6pm, Swavesey Site Offices, High Street, Boxworth Cambridge CB23 4NG
Contact: mrix@ciob.org.uk

Education Day at Naze Tower
27 April, 9.30am, Naze Tower, Essex Wildlife Centre, Walton-on-Naze, Essex
Contact: coh@ciob.org.uk

Southampton: Construction Contracts Act: What it Means and Who Does it Apply To?
4 April, 7.30pm, Dublin
Contact: mcoleman@ciob.org.uk
Meet the CIOB
4 April, Belfast
Contact: kmenagh@ciob.org.uk

SOUTH
Southampton: Paradise Birmingham - Site Visit
6 April, 5.30pm, Birmingham
Contact: gflloyd@ciob.org.uk
Demolition - what Method to Use and When?
7 April, 8.30am, Lincoln
Contact: gflloyd@ciob.org.uk
LABC Acoustics CPD
29 April, 8.30am, Council Offices, St. Peter’s Hill, Grantham, Lincolnshire
Contact: gflloyd@ciob.org.uk
Intervene - Site Visit
25 April, 6pm, Elmdon Trading Estate, Solihull, Birmingham
Contact: gflloyd@ciob.org.uk

MIDLANDS
Paradise Birmingham - Site Visit
6 April, 5.30pm, Birmingham
Contact: gflloyd@ciob.org.uk
Demolition - what Method to Use and When?
7 April, 8.30am, Lincoln
Contact: gflloyd@ciob.org.uk

NORTH
NE Professional Social Networking
6 April, 5pm, Northumbria University
Contact: dthorpe@ciob.org.uk

SCOTLAND
Glasgow Hub
Improving the Mental Health in your Team
11 May, 6pm, Laing O’Toure
21 Woodhall Holytown, Eurocentral, Motherwell
Contact: wmarshall@ciob.org.uk
Edinburgh Hub
Improving the Mental Health in your Team
25 May, 6pm, Doubletree by Hilton Dundee
Contact: ndrake@ciob.org.uk

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LECTURER/SENIOR LECTURER IN BUILDING SURVEYING

£37,256 to £40,483 per annum  London  Date posted 07 Mar 2017
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The Role
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School of Natural and Built Environment

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The appointee will be expected to support the Department/School and work as part of the course teams to provide practice-focused specialist input in core subjects particularly, building pathology (defects analysis & rectification), construction technology, environmental services, design and specification, Building Information Modelling, inspections, schedules of condition, dilapidations, maintenance management and condition surveys, conservation and restoration, building control and regulations, legal and statutory compliance (including Party Wall), contract administration, cost estimating and planning etc.in relation to construction and the built environment.

For further information and to apply please visit www.kingston.ac.uk/jobs
Closing date: 23 April 2017  Interview date: 03 May 2017
Devising bespoke cladding to refurbish a 1960s eyesore, Mulalley also had to ensure residents were not disrupted. Operations director Colin Watson talks CM through it.

Describe the project
The overall project cost £9m and involved the refurbishment of Chaucer House, in Sutton, Surrey. The 17-storey apartment block is Sutton Housing Partnership’s oldest, built in 1965, and has 96 flats.

The cladding on the original building had fallen into disrepair and needed replacing. Originally the building had precast concrete panels which had failed and were replaced in 2013, but these had also begun to fail.

What did the works entail
A solution had to be found whereby the residents could remain in occupation while the works were carried out.

Building consultancy Pellings worked with its structural engineer to devise an outline proposal for fixing of the new cladding system. This involved building an exoskeleton-type system over the existing cladding to provide structural support for the windows which could not be supported within the existing openings.

Pockets were cut through the existing panels to accommodate bespoke brackets, attached to the concrete floor slabs, onto which the new supports, panels and windows were to be fixed.

Utilising the existing GRP panel served two purposes: first, to provide a rigid backing for the insulation to be fixed to; second, to provide safe separation from the internal parts of the building so residents would not be disrupted.

Inside, two lifts were replaced and the entrance lobby and landings refurbished in addition to a roof level structure which was renovated to provide a viewing gallery.

How did the project differ from other cladding schemes you’ve worked on?
A bespoke solution was required as the existing cladding (which was to remain in place) could not provide adequate support for the new windows. The existing cladding itself had replaced the original cladding and the fixings for both were a potential problem.

You become involved in the project early, how did this benefit the overall works?
We provided structural surveys which established the condition of the concrete, following which arrangements were made to remove some of the existing cladding panels at low level to determine how these were fixed.

This enabled us to establish very early on – and subsequently make time and cost savings – that regardless of the type of new cladding system to be selected, additional structural primary supports would be needed to give support to the cladding and new windows.

What was the biggest challenge?
The setting out of the bespoke brackets and supporting framework to enable the insulation, windows, and cladding to be fitted.

What has been the biggest lesson learned?
The project served to reinforce that by taking an inclusive approach at the outset of a project significant amounts of time and energy can be saved through early collaboration.
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