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Take the test on this issue’s CPD topic on cold-applied waterproofing and additional topics at www.constructionmanagermagazine.com/cpd
Bronze for Bloomberg

Japanese bronze fins are combined with stone from both England and Italy to form the stunning facade of the £550m Bloomberg offices on Cannon Street in the City of London. Set for completion in 2017 and designed by British architect Foster + Partners, the new offices of the US media giant is being built by Sir Robert McAlpine.

The spectacular facade has been designed to ensure that the two connected buildings of 47,000sq m and 23,750sq m fit “respectfully” into their historic surroundings near to St Paul’s Cathedral. Lord Foster says that the large sculpted bronze fins will protect the building from the sun and will age gracefully. Lee O’Connor from Grant Quarries, which supplied the sandstone, says the project is the largest stone project in the UK for 100 years. A further component of the facade are curved hand-crafted stone blocks from in Savema in Italy.

The 10-storey buildings contain a two-storey colonnaded base, six office floors and two levels set back above the cornice line at the very top.

See New Faces, p36-41

Apprenticeship levy ‘fair settlement’ for small employers

New proposals to fund 90% of the costs for SMEs to employ an apprentice under the government’s new apprenticeship levy scheme have been welcomed by the industry. The government set out how the model will work last month as part of a wide-ranging consultation.

Overall the new proposals are being seen as a boost for smaller and medium-size companies. Only UK employers operating with a pay bill over £3m each year will have to pay 0.5% of their payroll bill (minus an allowance of £15,000) into the training fund. Most SMEs will be able to claim funds from the levy but would not have to pay into it when it comes into force in May 2017.

There will be 15 funding bands ranging from between £1,500 and an upper limit of £27,000 depending on the type of training. All existing and new apprenticeship frameworks and standards will be placed within one of these funding bands.

For small employers with fewer than 50 employees, the government is also proposing to waive the co-investment requirement if they take on 16-18-year-old apprentices or 19-24-year-olds formerly in care. This would mean that these employers will not have to contribute towards the cost of training - the government will pay 100% of the costs.

The new proposals were called a “fair settlement for small employers” by the Federation of Master Builders (FMB).

Brian Berry, chief executive of the FMB, said: “The funding arrangements appear to strike a reasonable balance, which takes into account the support that small employers need.”

Large construction companies will have to make levy payments to both the new levy and the CITB as well. It estimated at least 900 firms fall into this category – which many in the sector are angry about.

Steve Radley, Director of Policy at CITB said “This announcement brings mixed news for construction, but it’s good that government has responded to what we said on the challenges faced by smaller firms.”
Sir John Armitt calls for construction to rally around a united post-Brexit vision

ICE president sets out plans for new leadership group to provide advice to government

Sir John Armitt has issued a rallying call to the sector to unite around a clear post-Brexit vision. The ICE president said it was imperative for the industry to speak with a single voice to ensure government was as well informed as possible to protect interests of construction and the economy in its negotiations to leave the EU.

The action comes as companies and organisations revisit strategies following a string of poor economic indicators caused by uncertainties following Brexit. This includes ONS figures showing construction technically in recession.

Sir John has set up and is chairing a cross-industry Brexit Leadership Group which hopes to put forward proposals to government on issues affecting infrastructure and construction – from standards to skills – before Christmas.

The group consists of Amanda Clack, RICS president; Richard Laudy, head of infrastructure at Pinsent Masons; Andrew Wolstenholme, co-chair of the Construction Leadership Council; Mike Putnam, CEO and president at Skanska; Geoff French, Aecom; Dr Scott Steedman, director of standards at BSI; James Stewart, global infrastructure chair at KPMG; Nick Roberts, CEO UK and Europe at Atkins.

In addition, working groups have been spun off to study impacts on specific areas:
- Skills – chaired by Amanda Clack
- Procurement chaired by Ciob president Paul Nash
- Investment and funding chaired by James Stewart
- Research and innovation chaired by James Stewart
- Skanska UK chief executive chaired by Mike Putnam
- Standards and codes chaired by Dr Scott Steedman

A sixth group chaired by CiC chair Professor John Nolan will look broadly at the impact of Brexit from an SME perspective.

The aim of the groups, Sir John said, was to get a broad understanding of what impacts the sector in these areas and what needs to happen to ensure that we continue to trade as a sector and export to other markets.

“We need to understand the potential challenges, issues and problems – which will help us negotiate the best deal and ensure we don’t miss out. At the end of the day we want to make sure that we can contribute to the wider economy and not just construction,” Sir John, a member of the National Infrastructure Commission, told CM.

Sir John said that he saw the work being carried out in two stages. The first would be to work out what the key issues raised by leaving the EU by September and then coming up with the detail and information on clear negotiating positions that would help government by Christmas.

In his blog for the ICE, he said: “This is an unprecedented situation. Reaching the best solution for the nation will not be quick or easy but it is the most critical challenge facing us and we must get it right.”

He added: “To do this effectively we - the infrastructure and construction industry – must speak with one clear, coherent voice. Many of us will be thinking deeply about the same issues. We should also share that thinking so government cannot accuse us of being fragmented or inwardly focused. And by working together government can be in no doubt of our opinion, commitment and support.”

Is Brexit uncertainty impacting you?

Steve Oliver
Senior partner, MLM Consultants

- We do £32m a year, 10% of our business comes from the EU while 20% of our staff also does. Overall I see it as business as usual but I think the situation will present new opportunities. Leading up to the referendum a lot of work from our clients was put on hold. They hit the pause button.

- I think there’s a new normal developing at the moment and that’s where schemes are being reappraised or re-evaluated. That’s not culminating necessarily on schemes going on hold, it’s culminating in a reflection, so people maybe looking at such things as changing the concept, the format, the value of construction.

Rab Bennett
Founder, Bennetts Associates

- So far for most it appears to be business as usual, but overall there is a lack of certainty. There may be a slowdown or cancellation of projects but I think that will mainly be in the commercial area.

- As for a loss of people or creatives in the industry, that could happen and I think that’s something that shouldn’t be ignored. There’s a sense of rejection for people who have come here from Europe, they may be questioning their futures and a loss of them would be keenly felt.

Rory O’Connor
Managing director at engineering firm, RoC Consulting

- Pre-referendum, we witnessed sluggishness in the sector because of a sea of uncertainty but now that a decision has been made, we can start to see the shape of what lies ahead in our “post-Brexit” era.

- We’re more resilient and stronger than in 2008, but we need to be sharper, more efficient and more...
Let’s seize the moment to drive change

John McRae, equity director of ORMS, wants less of the “we’re all doomed” scenario and more focus on using Brexit to catalyse improvement

Our historic decision to leave the EU is a positive catalyst to fundamentally challenge the way in which we design, procure and construct our buildings

Architect as an ‘expert generalist’

In my practice we have 17 different nationalities and the bringing together of diverse cultures, technical knowledge and vision contributes to our success as a practice and ensures we are pushing boundaries. It is our belief that while we are in a world which is obsessed with specialists and specialisms, it is time for architects to claim the “expert generalist” role.

Architects need to be all-rounders in both their experience of construction but also of our wider societal needs, so we can provide long-term solutions. The profession needs to now position itself to be at the forefront of adding social (alongside financial) value to projects.

Long-term investment and solutions

The short-term investment culture (which doesn’t include the top developers, I hasten to add) that we have experienced over the past 5-10 years that strives for quick, risk-free projects delivered with certainty has led to more complex contractual arrangements that have put the entire onus onto the contractor which in turn has led to inflated contingencies within construction cost to cover their exposure. The role of the architect has been marginalised as the building is often diluted during the key financial negotiations, as a balance between profit margin and risk is agreed. However, is post-Brexit an opportunity to press the reset button?

It would be great to see a return to much simpler forms of contract where a client retains elements of risk throughout the project, employs a design team to design the building thoroughly and procures a contractor to deliver the building as designed. It sounds simple and obvious but it would be great to deliver longer life buildings for longer term investors in a truly collaborative manner.

Our historic decision to leave the EU is a positive catalyst to fundamentally challenge the way in which we design, procure and construct our buildings and I would welcome discussion on how we as an industry can inform the government’s views on the challenges ahead.
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TRANSFORMING THE WAY THE WORLD WORKS
CIOB News

CIOB joins the conference circuit
The Institute will have a presence at the political party conferences this autumn, enabling members to engage directly with policy makers.

Morgan Sindall signs up to Minecraft lessons
Contractor Morgan Sindall has become the first UK company to sign up to the CIOB’s Minecraft Education lessons.

The reception will engage with policy issues - from the skills shortage to tackling the housing crisis.

Plans are in preparation for the CIOB to have a presence at the political party conferences coming up in the autumn. The Institute is planning on holding a number of receptions with Labour, the Conservative and the Liberal Democrats to cover issues in the construction sector that affect CIOB members.

The Built Environment Reception with CIOB & RICS at the Liberal Democrat party conference is set to be held on Monday 19 September at the Hilton Metropole in Brighton. It will include a number of talks and speeches covering the Lib Dems’ vision for construction.

An audience of senior RICS and CIOB professionals, MPs and councillors are set to attend, making it an excellent opportunity to network in the sector and engage with a range of policy issues, from addressing the construction skills shortage to tackling the housing crisis.

The event is being run as a member benefit, and CIOB and RICS members in the local area are invited to attend. Those who do, will not need a Liberal Democrats Conference pass.

Speakers that are expected to be attending are Professor Charles Egbu, CIOB vice president and dean of the School of the Built Environment & Architecture, at London Southbank University (LSBU), Tim Farron MP, leader of the Liberal Democrats and Tom Brake MP, Lib Dem shadow leader in the House of Commons, chief whip and spokesperson for foreign affairs.

Later in the month, at the Labour Party Conference, the Built Environment Reception with CIOB, RICS & RIBA will be held at Hall 2H at ACC Liverpool Kings Dock, on Sunday, 25 September from 5.30-6.45pm.

The event will feature a number of short speeches and discussions of Labour’s vision for construction. While this is an open event, CIOB members who wish to attend will need to acquire their own conference pass.

Kevin Schofield, editor of Politics Home, will host the event, which will feature speakers including CIOB president Paul Nash and a number of leading Labour MPs.

The last event in the conference season is Backing the Builders: An Industrial Strategy for Construction with CIOB & RICS, which will take place at the Conservative Party Conference in Broad Street, Birmingham on Monday 3 October, from 12.30-1.45pm.

This fringe event will be a key opportunity to debate the economic importance of construction, and how it should feature in a national industrial strategy. It will be a panel debate and will also take place in the secure zone, so CIOB members will need a conference pass.

Invited speakers include new construction minister Jesse Norman and Jo Churchill MP. The event will be chaired by Carol Lewis, commissioning editor at The Times.
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**Past president honoured**

Professor Ghassan Aouad, past president of the CIOB, has been awarded an honorary doctorate in Technology from the University of Loughborough for his services to the industry.

Aouad has been the president of the Applied Science University, Bahrain, since November 2014. He was named by MEED as one of the top ten academic leaders shaping executive education in the Middle East.

He was appointed as vice-president of the CIOB in March 2010 and became president in June 2014 for a year. He was the first president with a Middle Eastern background.

Aouad spent five years at Loughborough University where he obtained his MSc in Construction (1987) and his PhD. In 1992, he joined the University of Salford as a research fellow, progressing to dean of the College of Science & Technology by the time he left the university in December 2011.

He described the honorary doctorate as "a privilege and an honour."

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**Reception boosts armed forces links**

A CIOB parliamentary reception with BuildForce on Armed Forces Day helped to promote links between the industry and the military.

The CIOB hosted an armed forces parliamentary reception in conjunction with careers organisation BuildForce for Armed Forces Day on 25 June.

The event, which was held in the House of Commons, aimed to introduce BuildForce to the industry and to promote greater collaboration between construction and the ex-military.

The event was part of a cross-industry initiative to increase recruitment from the armed forces into the construction sector. With 230,000 new recruits needed in by 2020 and three-quarters of UK contractors operating at or near full capacity, it is seen as a possible solution.

BuildForce aims to link veterans with the wealth of opportunities in construction – to show them just how transferable their skills can be, and that the construction sector is actually crying out for them. It is part-funded by the CITB and led by a group of founding companies: Carillion, Crossrail, EY, Lendlease, Morgan Sindall and Wilson James.

Johnny Mercer MP, who is himself ex-military, attended the event. He said: "Demand for professional technical and managerial staff is escalating and this can be seen at both a local and national level. Military personnel have learned to adapt to rapidly changing environments, collaborate with people from diverse backgrounds and take responsibility for the safety and wellbeing of large numbers of workers. This makes them ideally suited to many opportunities that exist in construction."

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**Play a role in your local CIOB hub**

As part of its overall strategic change to ‘ONE CIOB’, the Institute is introducing a new local and regional hub structure, and, for the first time, elected committee members.

Each hub is an administrative centre which will deliver events and services within a geographic region. It will have a dedicated budget, staff and six elected committee members.

Committee members for 29 new Europe region local hubs need to be elected this year and the CIOB will be running the election process in four waves, finishing in November.

Throughout the summer, the Institute has been inviting chartered members to consider playing an active role on their hub committees. Members who are interested in representing their profession in the local area still have time to register. From mid-September, the CIOB will contacting chartered members, inviting them to vote for their hub committees.

A full timetable can be found at: www.ciob.org/oneciob/

Find out more about at ONE CIOB at www.ciob.org/oneciob

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**Chris Blythe**

Housebuilders are missing a trick by not focusing on innovation

Forget about Hinkley Point, let us build houses that generate power from waste. Build enough and perhaps we don’t need as much expensive nuclear power, with its significant legacy issues, as some may think.

A recent article in *Global Construction Review* tells the story of a project to devise building blocks that can generate electricity from human and household waste. The research is led by Newcastle University, with involvement from SMEs in Italy and Austria.

The most striking thing is the paltry amount of funding, a mere €3.2m, or about £2.75m. It is a surprise a major housebuilder has not got into the project with a view to how this could be applied more widely. €3.2m is tiny when you look at the profits being made in housebuilding.

Despite a housing crisis, housebuilders are still holding back on expanding development while they assess the market. There is no mystery here. By any account housing is too expensive and I am sure if house prices came down, sales would go up. Another factor is whether housebuilders actually have capacity to build in the volumes we need. If you look at a recent report on new housing from the All Party Parliamentary Group for Excellence in the Built Environment, politicians are singularly unimpressed.

Increased volumes put pressure on quality, the standard contract is biased in favour of the developer and the warranty regime over-promises.

Customer dissatisfaction is rising as volumes and profits increase. This is made starker by comparison with the period around the financial crisis when the number of houses sold was quite low, but the level of dissatisfaction was also low because builders had to get it right to make the sale.

The report, *More Homes, Fewer Complaints*, made a number of recommendations, for example a right to reject a property and not complete until all defects are rectified. Too many people complete before they would like to because there is the worry that delay would compromise the chain. This often means that people complete with the promise that things will be rectified after moving in. The APPG report highlights the broken promises.

The report is a good place to start but I would also like to see a real effort by some of the major housebuilders demonstrating an interest in innovation, such as the smart bricks described earlier. For such a small investment the returns could be so much greater, not just in profit, but also the image of the sector and benefit to the environment.
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Views

Lets’s not waste such a good crisis

THE PROSPECT OF BREXIT and the dark clouds it’s blowing the sector’s way makes returning after the summer break a little more unsettling than normal.

There’s a new prime minister and a tranche of new ministers with different agendas. We’re already starting to see a few economic indicators showing the industry is technically in recession. There’s reports of clients putting jobs on hold while they reassess the market or look for cutbacks. And there’s the big unknowns of when we finally do leave the EU, what it will mean in terms of overseas workers, procurement and investment.

But amongst this cauldron of uncertainties, there is a more positive narrative emerging, namely a determination to make the best of the unwanted hand the industry now holds. As a number of those we spoke to for this issue point out, wouldn’t it be great to use the opportunity we now have foisted on us to finally train a skilled workforce, to increase productivity and cut out waste? One only has to look at the spellbinding performance of our Olympians to see what a transformation can be forged with focus and determination. In the words of Andrew Wolstenholme’s visionary 2009 report, we should ‘Never waste a Good Crisis’ (see page 27).

Gathering evidence of where Brexit is likely to hit the industry hardest and arming government with the right information to ensure we negotiate the best deal for the sector is an excellent place to start. But as Sir John Armitt, who has set up a Brexit Leadership Taskforce to do precisely that says, the industry needs a single vision to present to government to get the best outcome. We’ve heard it before, but never has it been so crucial.

A woman’s place is on the podium

There are more women on FTSE 350 boards than ever before - 26.1% at FTSE 100 companies and 19.6% at FTSE 250 firms. The Church of England has ordained six women bishops; and we now have our second female prime minister. What a state of affairs then that when it comes to running construction sites the job would seem to still be the preserve of men. As we report (page 20), this year’s Construction Manager of the Year Award has no female finalists on the short list in any of the categories - not surprising as not one woman entered.

Why is that? A modest reluctance to draw attention to themselves would certainly appear to be a factor. But also, there’s still a clear lack of women candidates at the highest level. Anecdotally, more women are coming in to the sector - but not enough are staying long enough to progress to the prime jobs that will land them coveted title of Construction Manager of the Year and often a step into management.

Contractors talk a good game on gender. But the reality is that unless site practices are radically overhauled to get away from the dawn till dinner culture, little can change. The arguments for unlocking the site gates early has been well rehearsed - but does the person in charge have to always be there at the same time?

Greater flexibility in working would be good for all - we’re constantly told that it is non-negotiable amongst millennials, who also crave a greater work life balance. So, please, can one company do the right thing and show others the way forward?

Denise Chevin, editor

More Construction Manager online and on Twitter

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Feedback

Are H&S fines a good deterrent?
Mark Wilson, via website
Is the rise in fines for health and safety breaches (Revealed: construction’s biggest H&S fines, online) an indication that the CDM Regs 2015 are not having the desired effect, or is it simply that a new regime of penalties have magnified the less desirable results?

Gursharan Singh, via website
Financial penalties may not have the desired effect as the fines may have been paid by the companies and thus borne by the shareholders though they are not a party to the safety violations.

For the desired deterrent effect it may be necessary to impose prison terms on the directors, managers and professionals who may be responsible for the violations. Both the penalties should be imposed as fines generally only increase the coffers of the authorities.

Surveys are flying high
Michael Leftwich MCIOB, via website
At Shetland Islands Council we have been carrying out our roof and high level surveys in this way for three months and it has proved successful (Drone roofing survey project wins CITB funding, online).

The trained remote pilots can safely carry out inspections from ground level and cover large buildings in one afternoon. It negates having to arrange for a scaffolding contractor and, although the drone and training is expensive, it has been more than covered when compared with the traditional method.

The only problem I see here is that you cannot fly in a built-up area – you have to have control of the area you are flying in. This may prove difficult in towns and cities.

J Sandland MCIOB, via website
I am surprised drones have received funding, as Civil Aviation Authority (CAA) rules prevent most situations of flying for property roof inspections, as previous RICS articles and knowing a commercial drone local pilot firm – who has CAA

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Vox pop
What should be the first priorities for new construction minister Jesse Norman?

Brian Berry
Chief executive, Federation of Master Builders (FMB)
It's very good news that the government now more than ever needs to make national funding available to compensate for the fall in funding previously offered from EU sources. With many in government focused on Brexit, we also need to ensure that the domestic market isn't forgotten and ensure we drive an agenda of growth, which embraces new domestic housing and also quality for the consumer.

If there was one thing I could ask our minister, it would be to remember the essential role UK construction plays on a global scale. Let's not lose sight of just how good we are at what we do and how many countries rely on our unrivalled expertise.

Anthony Arkle
Director of government affairs, Skanska UK
Jesse Norman has been appointed at an important time for the industry and it is vital that he acts quickly and decisively. I would like to see him prioritise Brexit-related matters, industrial strategy and green issues.

He needs to listen closely to what industry is saying about what it needs out of Brexit negotiations to be successful in future. In particular, we must ensure the industry gets access to skilled labour from overseas, while providing the right framework for skills to be developed from home-grown talent.

Martin Townsend
Director of sustainability, BRE Global
It is essential that the government ensures the continued free movement of people coming to the UK to study and work in science, design and engineering. By doing this, we will continue to attract the highest calibre of industry professional to careers with UK construction companies.

The government now more than ever needs to make national funding available to compensate for the fall in funding previously offered from EU sources. With many in government focused on Brexit, we also need to ensure that the domestic market isn't forgotten and ensure we drive an agenda of growth, which embraces new domestic housing and also quality for the consumer.

If there was one thing I could ask our minister, it would be to remember the essential role UK construction plays on a global scale. Let's not lose sight of just how good we are at what we do and how many countries rely on our unrivalled expertise.

Andrew Hill
Chief executive, Hill
"The government's immediate priority is to provide stability and greater certainty for the economy in the wake of Brexit. The minister will have a significant role because construction is a barometer for the wider economy. Major infrastructure and housing projects must continue and the minister should be pushing that agenda.

More widely, we need to drive home the skills agenda to ensure the industry has the capacity to deliver the government’s one million homes target. Apprenticeships are more important than ever, and we need to ensure we are training enough architects, project managers and surveyors to ensure there are no bottlenecks.

Pokemon Go is about augmented reality (AR) – about geolocating the user in a combination of real world and computer-generated data. I meet many construction folk who don’t understand what AR is – Pokemon Go is a topical example.

A second point was about the (to me) unfortunate purpose of players meeting up to fight. Personally, I would prefer a game or virtual world (like Second Life, for example) where players rendezvous to collaborate and do something positive (I will refrain from going on about how much construction is adversarial already!).

And third, I pointed out there are perhaps more ¿constructive¿ games to learn from example) where players rendezvous to collaborate and do something positive (I will refrain from going on about how much construction is adversarial already!).

A second point was about the (to me) unfortunate purpose of players meeting up to fight. Personally, I would prefer a game or virtual world (like Second Life, for example) where players rendezvous to collaborate and do something positive (I will refrain from going on about how much construction is adversarial already!).

And third, I pointed out there are perhaps more constructive games to learn from – and cited the CIOB’s Minecraft initiative. Perhaps, ultimately, there isn’t actually a much construction is adversarial already!).

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Robert Halfon was appointed minister for apprenticeships and skills in Theresa May’s new government line-up. Gary Sullivan has a message for him.

DEAR MR HALFON, congratulations on your appointment as a minister. I am sure with your passion for apprenticeships and your support for the principle of trade union membership and workers’ rights you will find yourself at some point struggling to resolve the conundrum that is the construction skills crisis.

Perhaps I can give you some food for thought. I won’t rehearse all the issues that construction faces, however a start point is that, despite headlines to the contrary, there is no homogeneous construction industry. Rarely will the guy who rebuilds your garden wall or builds your extension be the same individual as the person who fits the cladding on a 40-storey tower or the roof on a new airport terminal.

I say the guy, but of course it could just as easily be a female – although it is more likely to be a man as we are still failing to attract women into our dynamic and vibrant industry. As construction is not one homogeneous industry, clearly the answer will be as complex as building, say, a nuclear power station.

Now I hear you and your advisers shouting apprenticeships, and of course they are important. However, they need to be relevant and fit for purpose for 21st century construction – notwithstanding that the CITB cannot be blamed for all the issues that we face by not having a fully skilled workforce, it has been at it since 1964 and uses the 400,000-plus shortfall as a reason for continuing to exist.

Is there any correlation between construction and the UK car industry of the 1960s and 70s? With falling productivity and ancient working practices, poor quality and the failure to embrace emerging technologies sent many household names to the wall. Similarly construction has lost big names - such as Trollope & Colls, Bovis Construction, Wimpey and more, all of which had their own workforce, which they trained.

The circle is more vicarious than virtuous, in that the clients will tell you the supply chain doesn’t have the skills to enable them to procure differently. The supply chain will tell you it doesn’t have the pipeline to allow it to invest in developing the skills of the future. In the middle are the Tier 1 principal contractors, trying to manage both client and supplier – the meat or the cheese in the sandwich, so to speak.

My apologies for falling back on an old maxim: if you always do what you always did… I am sure you know the rest. So, minister, it is time to try something different. There is no silver bullet and no easy answer, but it will need those who build our infrastructure, those who build our cities and those who fund or commission such undertakings to want to change.

More importantly it will need someone to help them get there. You can push back to the market, but political leadership is still required, more than ever post-Brexit.

We need to train differently, get people in at ground level and get them working. We could look at how the military train young people. In less than 18 weeks they produce the highest skill levels with technical expertise and a great work ethic. We have to invest in off-site manufacturing and in parallel train the workforce to fit, erect and plug in the state-of-the-art products created in factories in our Northern Powerhouse. Our ambition should be more F1 than 1961.

To quote Sir Stuart Lipton: “We live in the age of Google and iPod; we build in the age of Romans.”

Gary Sullivan OBE is chairman of construction logistics contractor Wilson James.

"We need to train differently, get people in at ground level and get them working. We could look at how the military train in 18 weeks to the highest skill levels"
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Now is the time to invest in infrastructure

Chris Hallam

With Chinese investment looking shaky after Hinkley Point, pension funds failing to deliver and PFI out of the picture, there’s a very good case for government debt-funded economic stimulus, says Chris Hallam.

The government’s unexpected eleventh-hour decision to pull back on approving the new nuclear power station at Hinkley Point in Somerset has added further uncertainty to an already uncertain construction sector still reeling from the Brexit vote and with little clarity as to how to fund the £483bn worth of projects identified in the National Infrastructure Delivery Plan.

The truth is that, amid all this uncertainty, there has probably never been a better time for government to invest in the UK’s crumbling and decrepit infrastructure. According to the World Economic Forum, the UK ranks a lowly 24th in the world for the overall quality of its infrastructure — well behind most of our European partners and the likes of Jamaica, the Philippines and Oman. We spend around 2% of GDP on infrastructure — way below the 3.5% for developed economies recommended by the Organisation for Economic Co-operation and Development (OECD), and have an accumulated infrastructure deficit somewhere north of £400bn.

High returns on spending

Of course this is not new: over the last 30 years the one thing we have been consistently good at in the UK is woefully under-investing in our infrastructure. That said, the plus side of this — such that it is — is that the UK benefits from a disproportionately high return when we do increase infrastructure spending.

Last year Standard & Poor’s reported that the UK would experience greater economic benefit from increased public spending on infrastructure than any other major world economy except Brazil. It found that an increase in infrastructure spending of 1% of GDP would generate a 2.5% increase in GDP over a three-year period — double the impact of a similar increase in Germany or France.

Similar research by the Civil Engineering Contractors Association (CECA) recently concluded that each new job created in infrastructure construction resulted in three jobs for the wider economy, and that in the long term every £1 invested raises economic activity by £2.84. The economic multiplier effect from construction is about the best of any economic sector.

Add to this the fact that long-term borrowing rates for the government are the lowest they have ever been or are likely to be, and it’s hard not to conclude that it makes no real sense to continue to run an austerity-based cost-cutting economy at a time when money is so cheap and when traditional means of funding infrastructure, such as PFI, are essentially defunct.

PFI (with its rebranded younger sibling, PF2) is the Tory creation that became the darling of Tony Blair’s Labour government. Whatever your view of its rights and wrongs, it can’t be denied it succeeded in pumping hundreds of billions of pounds of private sector investment into schools, hospitals, prisons, roads and social infrastructure — investment which would almost certainly not have happened without it.

Of course, things have moved on and PFI is now the political equivalent of Monty Python’s parrot — If it’s not already dead it’s certainly in a near-comatose state of rest and there is little prospect of using it in any substantial way to fund our current and future infrastructure needs.

The tens of billions of investment from pension funds so eagerly promised by George Osborne early in his tenure as chancellor amounted to a mere trickle of a few hundred million — and most of that was into existing infrastructure.

Investment from China — as much as £105bn over the next decade — was to be the next big thing, but after Brexit and the Hinkley announcement, Beijing could be forgiven for reconsidering its options.

Cross-party political support

The case for an economic stimulus in the form of government debt-funded infrastructure investment is a strong one — something that hasn’t gone unnoticed around the corridors of Westminster. Leadership contenders of all political persuasions have floated the idea of an infrastructure splurge to boost the economy — although sadly none of them are likely to be in a position to do anything about it. However, at least they’re talking about it and a bit more noise from the industry might keep it on the political agenda.

Opponents may argue that for investment to be effective we need “shovel-ready projects”. It’s unlikely that expansion at Heathrow or Gatwick would create much of a stimulus in the short term, even if the government made a decision tomorrow.

However, that’s not to say we don’t have any shovel-ready projects. Hinkley Point is the most high profile, but there are plenty of others: road repairs, housing maintenance and, perhaps the greatest need of all, new housing. HS2 too could be sped up with a more ambitious construction programme — perhaps starting from both ends rather than from south to north.

Hopefully, our new prime minister has the courage to reverse some of the economic policies of her predecessor and invest in the infrastructure the country desperately needs — and in doing so create the wider economic growth needed to push our way out of an increasingly likely-looking downturn.

Chris Hallam is a partner at international law firm Nabarro LLP and heads its Infrastructure, Construction & Energy practice in Manchester.
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Feature Diversity
In the 2016 Construction Manager of the Year Awards, there was not a single entry from a woman. It would seem to suggest the cause of equality in construction is moving backwards. If so, what can the industry do to prevent this?

James Kenny reports

WHERE ARE ALL THE WOMEN, THEN? It’s a depressing but obvious thing to ask when all the major contractors gather in London to celebrate the herculean efforts of their construction top guns - and all of them are men. Despite efforts by the CIOB to ensure women get their chance in the spotlight, the 2016 Construction Manager of the Year Awards (CMYA) has no females on the shortlist.

Only 10% of the construction industry is female - including fields such as design and quantity surveying - so you wouldn’t necessarily expect women to dominate the event. But, despite numerous initiatives, the state of affairs seems to be one of regression. In the past there have been female winners. But this year not only was there not a single female finalist, there was not even a single female entrant.

This prompts the question of why the job of running a construction site seems such a taboo for women? What does the industry need to do to encourage and promote female construction managers? And for those already in the industry, how can they be better recognised?

According to Chrissi McCarthy, MCIOB and managing director at Construction Equality, the reason many women don’t get recognised for such awards is they often are reluctant to be in the spotlight and be put forward.

She explains: “I’ve spoken to women who have won awards at CMYA in the past and often the first thing they say is ‘I was quite hesitant to be put forward for this - I wouldn’t do this off my own back’ or that they are really surprised. They shouldn’t be surprised; they have the knowledge and talent. Women tend to talk about ‘we’ more than ‘I’, so this is often the case when there are chances to be recognised.”

This view is echoed by other female members within the industry. Nicola Markall MCIOB, quality and compliance manager at Carillion Construction, has
Feature Diversity

“The industry is too focused on recruitment – retention should be the main issue”
Chrissi McCarthy MCIOB, Constructing Equality

> been in the sector for a number of years and says when it comes to awards she would be disinclined to take individual credit. “In my case I wouldn’t want to take credit. You don’t deliver projects on your own but as part of a team,” she says.

Barriers to success
When it comes to being a construction manager and actually working on site, it is estimated that 99% of workers are men. The UK has the lowest proportion of female engineers in Europe and only 14% of entrants to engineering and technology first degree courses are women.

Part of the problem is sexism; research by UCATT shows that more than half of female construction workers said they were treated worse than men because of their gender. One woman, who has worked as a site manager since the mid-1990s, says sexism is still rife within the industry, despite initiatives to combat it.

“Unfortunately, it’s the upper management where the problem still is. White males, over 50,” she says. “I’ve been in the industry for many years, but have had a difficult time, constantly having to prove myself, or been undermined. I’ve had directors shout at me. Perhaps they want to see me as a threat, but all I want to do is surround myself with people better than me so we can all excel on a project.”

Sexism isn’t the only issue. Issues of time and work balance are a key factor, particularly for those already working and as their career and life progresses.

Out of those women in construction who take a career break to have children, only around one-third return to the industry. These numbers are quite worrying, but also don’t address the issue that if women do return after a career break, many take a different role in order to better suit their changed lifestyle.

“Currently the industry is too focused on recruitment – retention should be the main issue,” says McCarthy. “If women come back to work in the industry, they shouldn’t have to take project community manager jobs or other such positions just so they have sensible hours.”

Paul Payne, managing director of specialist construction and rail recruiter One Way, also believes retention is a factor that needs to be addressed.

“While getting more women into construction remains a challenge that many industry spokespeople are vocal about, few discuss how to retain these individuals once they are on board,” he says. “Thankfully, times have changed and we’re now seeing a healthier pipeline of female talent moving into the sector compared to recent years. However, all of this hard work could go to waste if employers don’t think about the impact of the working culture that they’re fostering.”

Payne says the problem this creates is a churn of female talent that limits the number of women in management positions. “What we need to see now is a greater number of employers investing just as much effort into creating a working – and managing – environment that is as supportive of the female talent they have been able to bring into the firm as they would be in attracting these individuals in the first place,” he adds.

That’s not to say that the industry is ignoring the problem – many companies and bodies are actively trying to address the imbalance in the industry and spearheading initiatives to change things.

The CIOB has a number of activities planned this year to support a more diverse industry, among them setting up specific networking groups and professional development networks to encourage greater participation and retention of women and other under-represented communities in the industry.

Ahead of the game in this respect is the BRE, with its BRE Women’s Network. Launched in 2013, it aims to inspire women to join and remain in the construction and property sectors by showcasing the positive contribution that so many are making across the sector.

Thames Tideway Tunnel is another progressive organisation – the first outside the financial sector to launch a “returnship” programme, aimed at helping women professionals back into work after a career break.

Launched in April 2015, all seven professionals who took part in the scheme were offered positions with Thames Tideway Tunnel after they completed the programme, which included opportunities in business planning, legal, stakeholder engagement, operations management, asset management and financial modelling.

At the time, Rachel Tomkins, who took up the role of operations manager after...
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Elecosoft is proud to sponsor the CMYA 2016 awards and wishes good luck to all finalists
Feature Diversity

"Young women should be approached at a young age, in schools and elsewhere"  
Monika Slowikowska, Golden Houses Developments

> completing the returnship, said:  
"The past 12 weeks have provided me with an invaluable opportunity to prove myself, in the workplace, after a considerable career break. With Thames Tideway Tunnel and Women Returners, we’ve been offered great mentoring support and advice to successfully make the transition back to full time work."

With programmes such as these in place and an active drive by companies to recruit women to the sector, one issue that persists is around the elevation of women to prime positions in companies.

Monika Slowikowska, as the founder of Golden Houses Developments, a UK-based construction business that specialises in high-end residential projects, bucks the trend.

Slowikowska believes that in order for more women construction managers to enter the business, it all goes back to education. "For me I think it’s about communication and interaction. Young women should be approached at a young age, in schools and elsewhere and told about a career in the industry," Slowikowska says.

Dan Forbes-Pepitone, capability and talent director at Skanska, also points the finger at education, saying: "Lack of knowledge about different roles in construction is where a lot of the problems lie."

He adds: "We are seeing greater diversity in the built environment, but more so in an increase in engineers than actual construction managers. Unfortunately, there is still that perception about being on site."

Skanska has been particularly prominent among construction companies in its aim to not only encourage women into the sector, but also retain them. This year it has partnered with women Returners to welcome talented professionals, both male and female, who have taken a voluntary career break of two years or more for a 12-week paid return to work programme.

Based in London and surrounding areas and in Cambridgeshire, the scheme is set to start on 26 September, with the view to roles becoming permanent at the end of the period.

Forbes-Pepitone has identified three main areas that he believes the industry needs to focus on: “Number one, we have to keep trying to change perception – reaching out to schools, teachers, guidance counsellors, parents. It is all those things and making women aware about the wider construction industry. There are so many different areas.

"Number two, we have to get more flexible and practical about working on site. Facilities have to be acceptable and female friendly as standard."

His third and final point is that the construction industry needs to think more widely about the output of a job. “Looking at roles, what does it need? Is it a leadership role, rather then construction? You might have someone with, say, 10 years’ road experience, but does that make them the right person? Do they have leadership skills elsewhere? Women and others who might not necessarily see themselves in certain roles should be encouraged to apply.”

CM

A better future?

Jessica Mack, trainee site manager at Hill, talks about her experiences

Being a site manager is a fantastic job – you’re planning resources, co-ordinating issues on site, problem solving, looking after health and safety. There’s lots of variety too and no day is ever the same. I was due to start a law degree until I decided that I actually wanted to get a degree while working and gain experience. Hill’s management trainee programme gives you lots of responsibility, a good salary and perks like a company car once you’ve reached a certain level. There’s no reason why construction shouldn’t be a very attractive career to more young women.

“It can be daunting when you first arrive at a construction site, where there are large groups of male workers but very few women. However once you get to know the team personally it’s a lot less intimidating. As female site workers are relatively rare, there’s still work to be done in terms of changing attitudes – delivery drivers coming to site often assume I’m a receptionist, for example.

"I also think it’s important to change perceptions of construction. The main problem is that there are currently very few female role models, and young women aren’t aware of the opportunities available in construction when they finish school. I’m occasionally at careers events promoting the scheme, and recently a female student came and spoke to me to get more information about the opportunities when otherwise she would not have given a career in construction consideration.

“She’s since done two weeks of work experience at Hill and is now set to join our Trainee Scheme in September. Where women are equipped with information about the sector and the roles available, and can see there are other women already working in construction and making a success of it, they’re much more likely to give construction a chance and jump in.

“Like many other jobs, there are ups and downs when it comes to being a female site manager, but there are definitely many more ups! I’m currently three years into a five-year programme, and really looking forward to gaining more responsibility and managing my own sites.”
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Britain has been in the vanguard of drafting and implementing procurement rules. So don’t expect too many changes to the machinery post-Brexit, says Kuldip Dhanoya

What does Brexit mean for public procurement?

As we continue to grapple with the practical ramifications of the EU referendum decision, one of the questions being asked – admittedly for the most part by procurement practitioners – is how the Leave vote will impact the UK’s approach to public procurement?

In the short term, we expect very little to change. So we are unlikely to expect to see an end to OJEU notices any time yet. Until its exit, the UK remains a member of the EU, which requires its continued compliance with EU procurement directives and their implementation into domestic legislation.

As it currently stands, the main procurement regulations within the UK will remain the Public Contracts Regulations 2015 and the more recently implemented Utilities Contracts Regulations 2016 and Concessions Contracts Regulations 2016. Unless repealed by Parliament, these will continue to regulate public purchasing for, at the very least, the period during which the UK negotiates its exit from the EU. In the longer term, the extent to which those regulations are changed post-Brexit will depend on the outcome of the UK government’s negotiations with the remaining EU member states. In practice, if the UK wishes to continue to trade with the EU on preferred terms, part of that arrangement will inevitably require it to respect the single market and subsequently adhere to an EU driven procurement regime.

So, like Norway, the UK may look to become part of the European Economic Area (EEA), which would keep it in the single market, but which will also bind it to existing EU procurement directives.

Alternatively, should it not join the EEA, then still, by virtue of any ongoing participation within the World Trade Organization’s Government Procurement Agreement (GPA), the UK may have an ongoing obligation to continue to regulate public procurement in some form of GPA-compliant manner.

Either way, public procurement regulation, in some guise or another, is very likely to be here to stay.

Changing legislation

The real question, however, is whether - given the wider market uncertainties - there is, in practice, any real incentive for the UK government to tamper with the UK procurement regime, at least for the foreseeable future?

First, changing UK procurement legislation would be complex and time-consuming, given the number of public sector and industry bodies the government would need to consult with. Second, it is doubtful whether, in practice, there would really be any appetite for a second round of consultation, given the lengthy EU-wide consultation process which culminated in the relatively recent adoption of the current EU procurement directives.

Third, what would be a suitable alternative and where would you draw the line in terms of compromises to be made to the current public procurement regime? As the outcome of the most recent UK-wide consultation process highlighted, it is impossible to please everyone.

Moreover, the UK was very influential in the drafting of those EU directives,
resulting in them largely conforming to the UK government’s requirements. Indeed, this led to the UK enthusiastically enacting the Public Contracts Regulations in February 2015, more than a year before the EU-imposed deadline for implementation.

The revised package was widely hailed by the UK government as an "excellent overall outcome for the UK", with progress made in line with all of its key priority objectives, namely economic growth and deficit reduction. Key successes included, by way of example, the incorporation of provisions dealing with better access for SME’s, breaking down contracts into lots (where permissible), introducing mandatory 30-day payment terms and greater use of public procurement to secure social value.

We also need to bear in mind the UK’s approach to implementing the EU procurement directives, which went beyond the minimum requirements imposed by those directives; the

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**How the process works**

- Public procurement is the process by which public sector organisations buy goods, works or services from third-party suppliers. It can range from routine day-to-day supplies to complex spends such as large scale infrastructure, major IT or organisational change initiatives.

- The underlying aim of public procurement is to ensure competition, which is viewed as a key factor in achieving the twin objectives of accountability in the spending of public money and transparency in decision-making. Those objectives have been underpinned by a succession of EU directives which look to abolish barriers to trade and promote a single market, in particular by ensuring non-discrimination on the grounds of nationality.

- Those directives have been implemented into UK domestic law through regulations: these set out the procedures and practices which public bodies must comply with when conducting procurements for works, services and supplies over a specific financial threshold. The legal framework, as set out within the regulations, is designed to ensure that all public contracts over these financial thresholds are awarded transparently, without discrimination, as well as ensuring that all potential suppliers are treated equally.

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"Replacing the current UK public procurement regime would most likely be a relatively low priority for any government looking to address Brexit"

opportunity was taken up by the government to include additional UK-specific rules on advertising on Contracts Finder, use of the Cabinet Office standard PQs and the incorporation of rules on below threshold procurements.

On this basis alone, replacing the current UK public procurement regime would most likely be a relatively low priority for any government looking to address the overall consequences of Brexit.

It is therefore safe to conclude that, given the ongoing scrutiny of public spending, and the pressure to use public funds effectively and efficiently, even if the current domestic procurement regime was further modified to remove additional red tape, the principles which underpin the EU procurement regime of securing value for money through the holding of some form of competition are likely to remain.

But, in view of the considerable work the UK government has put into securing its priorities within the current EU procurement directives, is there any real incentive for it to look to make any immediate changes? In reality, the key driver for any foreseeable changes is more likely to be the extent to which those domestic rules require, or merit, revision to reflect the outcome of negotiations around the UK’s exit from the EU. This will no doubt depend on the ensuing relationship between the UK and the EU and, more specifically, the extent to which the UK will be able to maintain access to the internal market, post-Brexit.

Kuldip Dhanoya is senior associate with Nabarro LLP.

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**BIM bytes:**

**Brexit, BIM and lessons from the Great Recession**

At the forefront of every aspect of business planning in the UK at the moment are the short- and long-term effects of the referendum result to leave the European Union. Finally, I can contrive a link between the two hottest topics: BIM and Brexit.

The statistics relating to construction throughput and industry insolvencies are as close to the patterns in the lead-up to the last recession so as to indicate that the short-term effect is likely to be the precipitation of a recession which had already appeared to be on the cards. In any case, the immediate direct effects of the referendum result are most closely analogous to recessionary drivers.

On 20 November 2009, Constructing Excellence issued a report called Never Waste a Good Crisis, contributed to by the great and the good (Sir Michael Latham, Sir John Egan and Nick Raynsford, among others) and led by Andrew Wolstenholme. The central tenet of the report was that the then current economic crisis (which I understand is now referred to as “the Great Recession”) ought to be a catalyst for change and innovation in the industry, as well as a focus for a reassessment of the industry’s efficiency.

**Advice for the industry**

The report has some quite striking practical advice which is applicable to the industry as it is to an individual business; however, it does bear in mind that "in the middle of an economic downturn, companies are more interested in survival – saving cash."

And so, where does that leave BIM? There is no doubt that BIM has embedded itself in the UK industry. Its requirement on central government projects has led to an investment by businesses to respond to that need (both in terms of people skills and technologies) which means that there are people in our industry that are personally vested in ensuring that BIM continues to succeed.

However, investment is still required, particularly at the second-tier supply chain level, and for that there needs to be an economic reason.

**Adding value in a downturn**

Now, we are at the critical point: for BIM to be a success it needs to thrive in a downturn; to do that it needs to be more efficient and create more value using BIMs and BIM processes. Without that, when I am advising clients on procuring and building projects, their tender documents and evaluation criteria will not favour the use of BIM.

As the report says: “While many clients say they want a best value solution, they still start out by pursuing the lowest tender price, and end up paying a lot more as a result.”

It is time to dust off your copies.

Assad Maqbool is a partner at Trowers & Hamlin’s specialising in projects and construction.
Game on for a career in construction

The industry increasingly needs digital skills, while gaming experts are looking for different outlets for their talents. Why don’t we marry these needs up, asks David Glennon

In contrast, construction – by tradition a slow-moving industry – is experiencing change at a rapid pace. The emergence of building information modelling (BIM), augmented reality and other immersive technologies is encouraging a global drive towards a digitally enabled sector. The potential impact of immersive technologies is huge, and there has never been a more exciting time to join the industry. The challenge now is for construction companies to make themselves attractive to those entering digital professions. Industry must demonstrate a rewarding career path if it is to entice new people and different skills. A key selling point is the opportunity to work on real-life projects that make a genuine difference to society.

A job in construction involves creating models of buildings and infrastructure that are then constructed, used and enjoyed in the real world and this is something the games industry is unable to offer. An employee is also likely to work on a number of projects concurrently, adding to the variety and appeal of construction.

Exploring immersive technologies

Aecom first looked at the games industry as a potential talent pool to fill a specific position on a major infrastructure project in Sweden. We appointed a games development graduate and the project team were amazed by how quickly he picked up the necessary tools. To assess his modelling capabilities, he was asked to create a simple model of a bridge. Within two days he had created a complete model of London’s Tower Bridge, demonstrating the value he would bring to the project.

While these types of visualisations in no way replace technical models, immersive technologies can supplement conventional working practices and bring many benefits to the design process. Importantly, their use improves communication.

Aecom recently deployed Microsoft HoloLens mixed-reality devices to a number of its offices and is already using them on real projects. Through lightweight headsets, HoloLens technology adds holograms of 3D objects into a user’s view. We can feed 3D engineering models of large or complex projects into the HoloLens environment, allowing team members in different locations to simultaneously explore the same holographic projections. The technology is helping to speed up the engineering design process, giving team members the ability to point out potential difficulties in an evolving design.

Bringing digital models to life

But you don’t need to be an expert to use and understand the models created for use in immersive technologies, which can improve collaboration with clients. Immersive presentations and sign-off experiences, for example, give clients greater clarity earlier in the design review process, which helps them to better understand the impact of their decision-making and aids problem-solving.

Games developers bring valuable skills to the creation of these types of visualisations. The games industry produces entire cities for its consumer products, so those joining construction from the sector will be likely to have excellent spatial awareness. Games developers intuitively add life to digital models, which gives an entirely different perspective on how a space will feel or be used. Crucially, they help tell the story of a proposed project in a language that everyone understands.

As immersive technologies evolve, elements of games and construction will continue to merge. The games industry has identified construction as an important market and there are likely to be further technology advancements focused on the design-to-construction process. To fully embrace these emerging technologies, industry must attract the right skills. With an abundance of talent in the games community, construction companies would be wise to target this largely untapped resource.

David Glennon is director of digital project delivery in Europe, Middle East, India and Africa at Aecom.
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Draw up your plan for work-life balance

The uncertainties of Brexit have increased the stress for construction managers. Now it is even more vital to improve strategies for mental and physical wellbeing, says Mary Sisson

WELLBEING IN THE WORKPLACE is important for a variety of reasons, in particular reducing employee absence, increasing employee engagement and motivation, and ultimately improving organisational performance. Recent research from the CIPD shows that fewer than one in ten (8%) of UK organisations currently have a standalone wellbeing strategy that supports the wider organisational strategy.

Almost two-fifths of employees (38%) are under excessive pressure at work at least once a week, while 43% say that working long hours is the norm (to a great or moderate extent) for their organisation.

While awareness of the importance of employee wellbeing has increased, organisations are at varying stages of developing and implementing a strategy. But unhappiness and stress in the workplace can lead to anxiety or depression, which can progress to cause physical problems such as stomach ulcers and an increased risk of heart attack.

Common challenges

Reflecting on Awbery Management Centre’s experience working with construction businesses, we have identified common challenges for wellbeing – primarily communication, motivation and morale. These can be brought about by a number of factors. Leaders may be promoted without employers establishing that they have the necessary leadership skills – or providing the opportunities to develop these – which can lead to stress for the individual and impact on their wellbeing.

Communication across multiple sites can carry remote management challenges. It is important to make a conscious effort to give and receive feedback to ensure remote workers are okay, particularly to ensure that their workloads are manageable.

The pressure of deadlines from clients and projects can affect motivation and morale. Managers need to be given the skills to understand the core drivers of their team, so that they can lead and guide accordingly.

There may be a lack of opportunity or outlet for leaders and teams to share concerns, stresses or pressures. All too often these taboos are seen as a weakness and inability to cope.

Corporate burnout

Integral to a company’s wellbeing strategy is knowing how to spot the signs of burnout and stress.

Corporate burnout is a unique mental wellbeing, as well as promoting the importance of nutrition, exercise and sleep, and the role of coaching, performance and motivation.

Mary Sisson is business development director at the Awbery Management Centre, which designs and delivers leadership and management, HR and coaching solutions.

Five steps to increase wellbeing in the workplace

● Work hard. Recover VERY hard. Repeat. Ensure you spend weekends and holidays doing hobbies and activities away from work, to allow an effective recovery from the stresses of work in order to be more effective during working hours.
● Take lunchbreaks away from your desk - eat lunch away from your desk, ideally go for a walk outside or take some exercise.
● Don’t accept work from others if it doesn’t meet expected quality standards - if you accept low quality work the burden is on you to amend it.
● Set boundaries around your availability and communicate them - for example, only be contactable by phone or email between 8am and 6pm.
● Practice mindfulness - a great way to reduce stress levels. Mindfulness is the awareness that emerges through paying attention on purpose. It encourages a response to experiences rather than a reaction to thoughts, and can help to reduce stress levels, improve the quality and amount of sleep, and allow greater clarity to help with decision-making.

“Small changes can make a big difference and have a significant lasting, positive effect”
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IT’S BACK: NINE SHOWS ONE WEEK

Bringing together leading brands and industry experts under one roof, UK Construction Week is even bigger than last year. Construction Manager reports.

UK CONSTRUCTION WEEK is back following its successful launch in 2015. Bringing together nine shows under one roof, UK Construction Week will return to the Birmingham NEC on 18–20 October 2016.

In 2015, the show attracted more than 24,000 trade visitors and 650 exhibitors and this year’s show is set to be even bigger.

Organised by Media 10, the show provides visitors with the chance to benefit from exclusive deals from leading brands, learn about the latest legislation and the future of the industry, see the latest innovations first hand and progress their careers by learning new skills.

Sector-specific seminar areas include: the Home Building Theatre (Build Show), the BIM Prospects Theatre (Build Show), the Timber Focus Theatre (Timber Expo), the Infrastructure Hub (Civils Expo), the HVAC Hub (HVAC 2016), the Surface & Materials Hub (Surface and Materials Show), the Energy Hub (Energy 2016), the REA Seminar Theatre (Energy 2016) and the Smart Buildings Hub (Smart Buildings 2016).

On the main stage, day one of the event will kick off with a heavyweight panel discussion centred on the former chancellor George Osborne’s quote that the UK doesn’t “train enough or build enough or invest enough”. Debating reasons for and solutions to the construction industry’s low productivity, investment and inability to attract sufficient new talent, some of the panellists already confirmed include Dr Diana Montgomery, chief executive of the Construction Products Association (CPA), Paul Nash FCIOB, president of the Chartered Institute of Building (CIOB) and Tom Ground, CEO of Legal & General Homes.

The first day will also see the first seminar in a series held throughout the week, entitled “A Tale of Three Cities”. The series will highlight the opportunities, challenges and lessons to be learned from three of the UK’s most active cities: Birmingham, Manchester and London.

The first instalment focuses on Birmingham and will include the views of the infrastructure, commercial and residential sectors plus developers, local authorities, architects and energy professionals.

As the first major event in the industry following the EU referendum, day two of UK Construction Week will provide visitors with their first chance to hear from industry leaders on what’s in store for the sector. This first seminar is entitled “Keep Building: housing in post referendum Britain” and will cover key challenges facing the UK’s house-building market such as funding, planning permission, construction skills and
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One of the most iconic names exhibiting at the show include CEMEX, one of the world’s top six power companies in the country. Scottish Power will be exhibiting at Energy 2016 alongside British Gas and Pavegen. And at Plant & Machinery Live, global provider of construction machinery Case Construction Equipment will be showcasing its latest innovations as well as GT Lifting Solutions.

Another company with a long history taking part in UK Construction Week is timber provider Vandecasteele, exhibiting at this year’s Timber Expo. Other firms attending the show include W Howard Group, Arch Timber Protection and Rothoblaas. Exhibiting at HVAC 2016 will be UK’s leading insulation manufacturer Knauf Insulation as well as Airflow Developments and Hitachi.

Who’s exhibiting at the show?

What’s being said about the event?

Dr David Hancock, head of construction, Infrastructure and Projects Authority:

“Having participated in the first UKCW and been part of the steering group, it was very apparent to me that this event has the potential to change the image of construction. It can act as a catalyst for all of the construction supply chain. It is a place for us all to tackle the challenges we face head on.”

James Fairclough, UK marketing manager at Cemex:

“The show has given us a great opportunity to showcase our products and customers and end users. Everybody at UKCW was extremely professional and helpful, and we’ve thoroughly enjoyed meeting so many customers face to face at the event.”

Nicola Bagworth, general manager at JCB Industry:

“We are looking forward to exhibiting at the Build Show and highlighting the unique benefits of JCB’s telescopic forklift, the JCB Teletruk. It’s a platform to show the time and space saving benefits this innovative product offers the industry.”

Howard Flood, projects director at Warmup:

“UK Construction Week has provided an excellent platform for us to meet all the right people. We were able to raise the profile of Warmup as a brand and generated a real interest in our products. The atmosphere was brilliant and Warmup is delighted to have exhibited at UKCW this year.”

Alan Siggins, managing director at Airflow Developments:

“UK Construction Week has enabled us to reach key specifiers, contractors and installers in the field. Everybody at UKCW was extremely professional and helpful, and we’ve thoroughly enjoyed meeting so many customers face to face at the event.”

What else is there to see at UK Construction Week?

Free for all UK Construction Week visitors and exhibitors to enter, the beer and ale festival will provide a vibrant and social way to unwind at the show, with live music and more than 30 craft ales to try. The world-renowned Genting International Casino at Resorts World Birmingham will be hosting a dedicated UK Construction Week casino night on the second evening of the show (19 October). In addition, UK Construction Week will host several new industry awards. These include: the Manufacturing & Materials Awards, the Concrete Awards as part of the Surface & Materials Show, in partnership with World Architecture News (WAN); the Structural Timber Awards as part of the Structural Timber Awards in partnership with the Structural Timber Association (STA); and the BIM Awards in partnership with the Building Research Establishment (BRE).

UK Construction Week will also host a number of Innovation Hubs. Construction is an innovative industry and there are many exciting products and services in the pipeline that will revolutionise how we build. These hubs will showcase the latest products and prototypes, many of them seen for the first time.

Registering to attend UK Construction Week can be completed by visiting www.ukconstructionweek.com.
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When the glass roof of one of Britain’s most iconic postwar buildings had to be replaced, the solution was to wrap it in a high-performance skin designed to meet the needs of regulations and heritage bodies. Stephen Cousins reports.
Among the many experiments and devices that fill workshops at the University of Leicester Engineering Building, one in particular draws the eye. Suspended in mid-air are a series of open-topped plastic containers connected to thin copper pipes that snake off towards the perimeter.

These strange contraptions were developed, by the Department of Engineering, as an ingenious solution to a longstanding problem with the 1960s-constructed building – a badly leaking roof. Water drips down from broken and damaged panes in the vast glazed roof above into the containers, then trickles along the pipes into permanent internal drains, keeping students and their work nice and dry.

This is no ordinary leaking roof, it is the iconic sculptural saw-tooth glass roof that covers the Grade II*–listed building, designed by renowned British architects James Stirling and James Gowan.

Plagued by problems since completion in 1963, the structure is now the subject of an ambitious £19.5m refurbishment project that will see all 2,500 glass panels on the roof and the glass facade of the laboratory block replaced with the intention of extending the building’s use for another 50 years.

The project must be a contender for the most technically challenging roofing job ever attempted and has pushed the construction team, led by construction manager Lendlease, lead consultant and facade engineer Arup and Austrian roofing/facade specialist Fill Metallbau to the limit of their abilities.

It involves stripping back the original roof to expose its triangular trussed steel frame, then wrapping it in a weathertight glass and aluminium skin – a visual simulacrum of Stirling and Gowan’s original, but compliant to contemporary thermal performance, longevity, safety and access standards.

Every double-glazed panel in the prefabricated system had to be unique, to enable the skin to mould around subtle curves and twists in the steel frame, which had moved and warped over time.

The tight tolerances required during installation led to the development of bespoke parametric modelling software that “exceeds what is currently possible in BIM”. To complicate things further, all the refurbishment work, including disassembly of the original structure, is being completed while the faculty is fully operational, with students working directly below.

Peter Bale MCIOB, project manager at the University of Leicester’s Estates and Facilities Management Division, told CM:

“The idea of removing the old roof and installing a new one, with the same shape and using similar materials, might sound simple but in reality it is incredibly difficult”

Peter Bale MCIOB, University of Leicester

Landmark building
Architects travel across the world to see the Engineering Building, which stands on the edge of the University campus flanking B9ha of open green space in Victoria Park. The first example of postmodern architecture in the UK, it has appeared on postage stamps and artworks and effectively launched Sir James Stirling’s stellar career.

“Main picture: The iconic saw-tooth roof, built in 1963, incorporates 2,500 panes of glass
Above: Tensioned netting enabled operatives to remove the old glazing”

Image: University of Leicester, Lendlease, Arup, Pick Everard
Technical Refurbishment

The factory-like construction was a declaration of war against the predominant trend for dour functionalism. Critics were wowed by the dramatic 12-storey tower with two auditoriums cantilevered from its side - the tallest in the north at the time - and the bulging rooftop with its rows of diamond-shaped skylights, set at a 45-degree angle to allow north light into workshops and research laboratories.

But the geometrical ingenuity of the design was far ahead of its technical performance and from day one the building was plagued by problems stemming from the basic palette of low-cost materials and technologies employed. The roof was fabricated using a flimsy and lightweight stick system of aluminium sections, transoms and mullions - all hand crafted, and cut and installed by hand.

The glazing comprised just two thin sheets of float glass, separated by a fiberglass matt. Much like a greenhouse, it caused intolerable extremes of hot and cold in summer and winter. The thin glass and lack of safe access made it too risky to send anyone up to carry out repairs, hence the ad hoc system of containers and pipes.

Stuart Savage, senior construction manager at Lendlease, comments: “It is questionable how the original system lasted as long as it did - the aluminium was screwed into rotting blocks of wood cast into the concrete frame. The building leaked in 1963 and has leaked ever since.”

The refurbishment is being part-funded by the University of Leicester, with a loan from the European Investment Bank, and delivered under a construction management contract. The form of contract is the first ever implemented by the client, which Peter Bale admits “could have been an absolute nightmare” were it not for the “passion and dedication” of everyone involved.

A special “project charter” was drawn up by the University and signed by Lendlease, the trade contractors and other stakeholders, to commit them to work in partnership to maintain the historic status of the building.

The new system is similar to the stick system used in 1963, and comprises an off-site manufactured subframe of anodised aluminium, plus individually installed mullions, transoms and insulated double-glazed panels. The intricate structure will include 84 new “diamond ends” - geometrically complex frames at the end of each truss with glass intersecting at various angles.

High-tech heritage

Designing a system to meet the needs of a Grade II* listing while achieving 21st century levels of performance required a balancing act of historic proportions.

Thomas Pearson, senior designer and conservationist at Arup, told CM: “The changes we are making had to be legible but seem entirely natural. The new glazing has to look ‘right’, but establishing what that means has taken a long time. There have been many important factors to consider, such as the appearance of the translucent glass, but the finesse of the aluminium framing has always been our top priority.”

The new A-rated double-glazed units, manufactured by Okalux, replicate the grey tint and interlayer of fiberglass matting used in the originals, but increased in thickness, from around 9mm to just under 30mm - doubling the weight of glass on the building.

The glass and its support structure are robust enough to resist a person falling onto it from above without collapsing or shattering into shards, and to counter the negative pressure of wind trying to suck the glass out, something the previous roof, with its leaks and cracks, had avoided. As a result, the aluminium glazing bars are 38mm wide, 6mm wider than the originals, but well below the equivalent...
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“We managed to get the width of the gasket down to 10mm and could not go any lower because it is holding the whole thing together”
Mark Brennan, Lendlease

> standard facade solution of around 50mm wide, says Peter Bale.

Efforts to refine the design bordered on the obsessive. Discussions over what was visible behind the line of the pressure plates on the glazing took almost two months to resolve, says Mark Brennan, senior design manager at Lendlease: “We managed to get the width of the gasket down to 10mm and could not go any lower because it is holding the whole thing together and we had to be able to deliver a warranty to the University.”

Apart from heritage requirements, the building imposed physical limits on how much the new roof could expand in size. For example, the base of the diamond ends had to align with permanent cast-in concrete gutters along the top of the brick walls to allow rainwater to run off. Every component of the structure had to be assessed and passed by the client and the heritage stakeholders before installation. The star rating on the Grade II* listing required that certain fixtures and fittings were renewed or refurbished to maintain their original appearance. Bespoke heritage replicas of several air-handling units in the facade were produced at a cost of £27,000, as part of the new mechanical ventilation strategy.

The new roof is designed to trap warm air in winter, but heritage experts rejected a plan to integrate automated windows to naturally ventilate the workshops in summer because the openings would be visible from the tower. Instead, the air-handling units and new chillers installed under the roof will cool the spaces.

Two full-scale mock-ups of the diamond ends were produced, an initial visual mock-up and a test rig, built in Austria by Fill Metallbau to industry standards, to demonstrate to the heritage stakeholders that the lines of geometry and the structural system would function effectively.

A spokesperson for Historic England told CM “The challenge has been to preserve the architectural significance of the original design while sustaining the building in its original use by improving technical performance and longevity. The achievement we hope will be a faithful recreation of the different geometric forms and aluminium profile with a new bespoke patent glazing system.”

Ready for lift-off

The refurbishment works are being carried out under a giant white tent of fabric-wrapped scaffolding, designed by Lyndon Scaffolding, to weatherproof the building and allow the workshops and laboratories to remain occupied. A layer of tensioned walk-on netting under the roof line, with protective matting below, has enabled operatives to remove the old glazing and install new glass without dust or screws dropping on students or staff beneath.

Every component of the roof, including glass and screws, had to be removed without damage then stored, ready for reinstalation should the new structure fail. “The challenge of having a kite the size of a football field hovering over the building is not only holding it up, but holding it down,” says Peter Bale. “The scaffolding is designed to resist large uplift forces created if wind gets underneath.”

Below: The new glazing has to meet heritage and performance standards
Bottom: Work is carried out under a white tent of fabric-wrapped scaffolding

The roof of the scaffold over the workshop is supported on towers that plunge through the trusses below onto the workshop floor. Large amounts of knowledge ballast weights were inserted around the base of the scaffold to hold it in place. The complex scaffolding structure took a lengthy eight months to assemble.

All about the lines

Installing a precision-engineered roof with many complex intersections on top of a 1960s-built structure with multiple large deviations and misalignments has been a huge challenge for Fill Metallbau. Historic England insisted that the original lines of geometry flow into one another across the entire skin. Taking into account any expansion in the aluminium and settlement in the trusses during deconstruction and installation, installers are working to tolerances of +/-2mm.

Numerous point cloud surveys were carried out to map the trusses and develop a detailed three-dimensional model. The complexity of the challenge prompted Fill Metallbau to develop a new form of 3D parametric modelling software to monitor the installation procedure and identify any issues in real time.

Individual panels are temporarily fixed in position, then sample co-ordinates are recorded by on-site operatives and relayed to Austria. The figures are then run through the software to assess the impact on the overall system and ensure that cumulative errors are not adding up and sending those all-important lines of geometry out of kilter.

As work progresses, more than 50% of the new roof is complete and the first diamond ends are currently being installed. The level of complexity has resulted in a few teething problems, and the expected completion date has been extended to March 2017 from the end of this year.
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Technical Facades/building envelope

NEW FACES

Advances in technology are enabling a panoply of approaches to facade design and construction. Tudor Pop, associate director in CBRE’s Facade Consultancy team, highlights the five trends we might expect to see more of on UK construction sites.

This curved glass facade in London’s West End takes inspiration from the classic vase designed in the 1930s by architect Alvar Aalto. Architect Allford Hall Monaghan Morris (AHMM), worked closely with Westminster Council and contractor Wates to create an iconic focal point that sets the bar for the ongoing redevelopment of the area. The building’s distinctive wave design tapers up to a bespoke glass lantern at the top, accentuating the corner location and providing a modern successor to the original Victorian masonry of this building type.
FROM TIMBER TO TILES  that flutter in the wind to curved glass and complex composites, modern facade technology means that architects looking for statement designs are simply spoilt for choice.

The move away from glass and aluminium curtain walling as the automatic choice for any self-respecting modern office block has been driven by three developments: new technology has brought alternative materials into reach financially; tighter energy regulations have prompted a move away from standard glass; and a desire to make buildings stand out from the crowd – or, for that matter, blend into their surroundings – has sparked demand.

The adoption of new facades is happening all across Europe, paving the way for the exchange of new ideas. Here are the five big talking points:

1. Kinetic facades
 kinetic facades, as the name would suggest, are dynamic facades which change, rather than being static. Elements can be programmed to respond to climatic factors, to improve energy efficiency or reduce solar heat, or for aesthetic reasons such as an art installation.

Buildings that fall into this category include the Al Bahr Towers in Abu Dhabi in the United Arab Emirates which has computer-controlled facade made of umbrella-like panels which open and close in response to the sun’s movement through the day, to achieve optimal shading and light entering the building.

A more recent phenomenon is the appearance of new type of rainscreen cladding mainly used to overclad existing buildings, but also used on a smaller scale on new buildings. In this arrangement, thousands of aluminium tiles are hung off a framework in a way that allows them to move in the wind and create a fluid facade.

The technique has been pioneered by US artist Ned Kahn, who has collaborated with architects around the world to install the rainscreen cladding on a number of buildings, including a car park at Brisbane Airport. In the UK this type of facade made its debut with the 2014 refurbishment of the Debenhams store on London’s Oxford Street.

These kinetic facades represent a wider range of aesthetic opportunities without providing a major improvement in thermal performance, although these facades do provide some protection against rain.

Take-up potential: This is a great idea for creating impact and iconic status – and novelty value, particularly on an existing building. It’s perfect for a retail store, like Debenhams, which wants to create interest.

We can certainly expect to see greater take-up in the UK, though because the system is bespoke costs will be at the high end. Because the system has not been used on a large scale we still know little about long-term performance – though because the tiles are anodised aluminium one would expect them to perform quite well.

2. Curved glass

If you walk around London, one of the most notable trends, in both commercial and high-end residential buildings, is the growing use of curved glass. New CAD technology and advanced manufacturing techniques have brought down costs, making this possible on a larger scale.

The glass comes with a number of finishes and can be modified using dichroic glasses. These display two or more colours in certain lighting conditions or viewing angles. These characteristics are achieved by using a special interlayer in laminated glass or applying a window film – so the iterations are almost endless.

Curved glass is also being used in double-skin facades – where the inner layer is monolithic glass or another material – which opens up the possibility of different suppliers on the inside and outside.

“A computer-controlled facade made of umbrella-like panels open and close in response to the sun’s movement through the day”
Technical Facades/building envelope

Take-up potential: Costs for curved glass are three times more than flat glass – so we’re still talking high-end curtain walling for buildings that want to show off a little. This approach could store up expensive service charges for residents – as certain elements need replacing every 25 years.

Something else to bear in mind is that few manufacturers can supply in large quantities. This can put a strain on the construction programme: glass will need to be ordered well in advance, meaning everything needs to be designed that will impact the facade. There is also the tricky issue of how to get hold of replacement curved panels should one of them break.

3. Fibre-reinforced materials

Advances in manufacturing techniques have increased the choice of materials, with new fibre-reinforced materials increasingly used in rainscreen systems. Glass fibre reinforced plastic (GFRP) and glass fibre reinforced concrete (GFRC) are now being used in various forms that have been made possible by new technologies.

Curved GFRP panels or extruded GFRC standard profiles are also used to increase sustainability credentials – the energy used in manufacturing is much lower than that in aluminium or glass production. Recent research found that fibre-reinforced materials may be used in innovative designs which carry improved thermal performance. But the longevity of the material and finishes require further testing.

Extruded GFRP profiles have been used in Thin Environmental Cladding (TEC) panels, which aim to achieve a similar structural performance as aluminium, at a fraction of the cost.

Take-up potential: This technology is not used as widely yet in the UK as in Europe, the United States or Middle East. This is mainly because of cultural reasons and traditional construction methods.

4 Weathered steel

Weathering steel, best known under the trademark COR-TEN steel, is a group of steel alloys which were developed to eliminate the need for painting, and form a stable rust-like appearance if exposed to the weather for several years.

The beauty of the material is that because it is already weathered and “rusted”, even in 200 years it will still perform to 99.8%. There are very low maintenance costs and no requirement for a protective paint system or extended service life.

Weathered steel is not suitable in marine or coastal environments. Its use requires careful design of interface details as run-off water may have a detrimental effect on other materials, especially in the first years after installation.

Heydar Aliyev Center, Baku

The Heydar Aliyev Center is a 57,500sq m building complex in Baku, Azerbaijan, designed by Iraqi-British architect Zaha Hadid and noted for its distinctive architecture and flowing, curved style that eschews sharp angles.

Glass fibre reinforced concrete (GFRC) and glass fibre reinforced polyester (GFRP) were chosen as ideal cladding materials, as they allow for the powerful plasticity of the building’s design while responding to very different functional demands.

Broadcasting Tower, Leeds

Broadcasting Tower is a university building in Broadcasting Place in Leeds, housing Leeds Beckett University’s Faculty of Arts, Environment and Technology, with student flats in the main tower.

Designed by Stirling Prize-winning architects Feilden Clegg Bradley Studios, the tower is distinctive, with comfortable and contemporary interiors and stylish decor. The exterior is clad in COR-TEN weathering steel, which gives it the rust-like appearance for which it is known.

“Costs for curved glass are three times more than flat glass, so we’re talking high-end curtain walling for buildings that want to show off a little”
Take-up potential: This material is increasingly used in diverse contexts. Its main appeal for architects is the finish, for developers the low maintenance costs and for contractors the ease of installation and lack of a requirement for painting.

A number of buildings have used weathered steel with materials like glass and terracotta. But these have not been without problems. CBRE has been involved in instances where the run-off from wet rusted steel has stained the glass badly.

5. Procurement routes

Brexit and the fall of the pound is bound to make the issue of where to source cladding largely manufactured in Europe, even more an item for discussion.

Chinese cladding has been used on flagship schemes across London since 2013, including curtain walling for a 37-storey tower at the Elephant and Castle as well as British Land’s Cheesegrater in the City and the St George Wharf tower in Vauxhall.

Chinese facade contractors are looking to increase their share of the UK market. It is large, well established and has potential for growth. There are good chances of making a profit and no requirement for a large UK base as almost everything can be manufactured outside the UK.

Their focus will not just be London but in other cities like Leeds, Manchester and Liverpool where there are other large high-rise schemes in the pipeline. There can be differences in “expectation of quality” and anyone going down this route would do well to inspect in the factory.
Continuing Professional Development
Cold-applied waterproofing

- Inverted roofs have the waterproofing layer below the coverings
- Long-lasting waterproofing options require heavy plant and hot works
- Proteus’ Cold-Melt offers a cold-applied waterproofing alternative

Cold-applied membrane is a watertight solution

Technology in the waterproofing industry has advanced enormously in recent years. In this CPD, Proteus’ Justin Pitman explains the choices open to specifiers of protected membrane roofs and the applications of its Cold-Melt cold-applied system.

WATERPROOFING TECHNOLOGY has advanced enormously in recent years in response to health and safety concerns and the need to provide new advanced membranes that can deliver fast, cost-effective solutions for specifiers designing protected membrane inverted or warm roof applications.

What is a protected membrane (or inverted) flat roof?
A protected membrane inverted or warm flat roof is a typical flat roof construction in which the waterproofing layer is placed below the coverings, protecting the membrane from environmental conditions and traffic. Often insulation is included above the membrane which can be secured by a layer of ballast or paving, or a living green or biodiverse roof.

Such roofs are usually around 20% heavier, around 10kg per sq m, without taking into account ballast or other coverings – as compared to 8kg per sq m for a traditional cold roof where insulation is below the structural deck and the exposed waterproof membrane on top.

In addition, because of the need for ballast, paving or vegetation, inverted roofs will vary in weight and although there are lightweight solutions such as timber decking, much heavier coverings such as green roofs when saturated can be over 150kg per sq m.

Even with standard ballast or paving the weight will be typically around 90kg per sq m, which means that the structural load can be an inhibiting factor for a specifier.

However, inverted roofs are able to exceed Building Regulations Part L requirements, and have many advantages. Placing the thermal insulation above the waterproofing membrane helps to maintain waterproofing at an even temperature, protects waterproofing from UV radiation and impact damage and enables the waterproof layer to act as a vapour barrier, eliminating the risk of condensation.

Rain that falls on the roof percolates through the ballast and insulation until it reaches the membrane. It then drains away through rainwater outlets. The build-up of the roof means that some water is almost always trapped beneath the insulation boards by capillary action. Consequently, the insulation is expected to be wet for the majority of its lifetime. This is taken into consideration when determining the U-value of the roof.

Condensation risk calculations are carried out assuming that the membrane is on the warm side of the insulation. This is generally fine, but during heavy rainfall the membrane can become “chilled” by the water that percolates through the ballast and insulation and then sits on top of the membrane.

Eventually, the standing water will be warmed up by the roof deck, but until this happens, the temperature of the membrane may be below the dew point.

In recent years, polypropylene water-reducing layers have been introduced to the build-up directly above the insulation to control the flow of precipitation. These membranes ensure that the volume of water surrounding the insulation at any point in its lifetime is less than the volume of condensate that can form during the driest conditions.

“Placing the thermal insulation above the waterproofing membrane helps maintain an even temperature and protects from UV radiation”
Continuing Professional Development
Cold-applied waterproofing

Waterproofing membranes
A wide range of waterproofing membranes can be used in inverted roof applications, including built-up felt, single-ply membranes, cold-applied liquid membranes, mastic asphalt and hot melt monolithic waterproofing and now Cold-Melt.

Built-up felt systems
Built-up felt or reinforced bitumen membranes – traditionally the first choice for inverted roofs – are increasingly losing out to other types of waterproofing which are quicker to install, particularly around detailed areas, and often less expensive. These systems require a two-layer application which can be fully bonded or loose laid, and from 6-8mm thick.

- Built-up felt systems are not seamless and bituminous laps suffer from attack from algae which form in standing water, meaning that this type of membrane choice has long been overtaken by other, more robust, technologies. Specified in the right situation, bitumen membranes typically last for 20-35 years.

Single-ply membranes
Single-ply membranes are mostly suited to warm roof applications, however some have been historically specified for inverted roofs. Their thickness ranges from 1.2-2mm, which combined with their composition makes them prone to damage by following trades, so it is usually advisable to add a fleece membrane.

- Single ply is not seamless and some types of membrane suffer from algae attack. In addition, the seams between the sheets are susceptible to failure if the initial weld was not perfectly achieved at the point of installation. Single-ply membranes typically last for 20-30 years.

Liquid applied membranes
Until recently these were mostly used in refurbishment applications but are increasingly specified for new-build, though many are not suitable for inverted roofs. Thicknesses are typically 2mm minimum and once cured are generally tougher than single-ply membranes.

Roofing section using Cold-Melt

1. Deck
2. Pro-Prime SA
3. Pro-Carrier SA
4. Cold-Melt
5. Pro-Root Barrier
6. Proteus Pro-Therm XPS
7. Proteus Cement Topped XPS
8. Pro-Therm Low K
9. Proteus Drainage Layer
10. Proteus Filter Fleece
11. Pro-Living Roof
12. Ballast
13. Proteus Pedestal
14. Pavers
15. Pro-Drainage Trim
16. Metal Capping

Where is it installed?
Inverted roofing is typically installed on a concrete deck because a loading of 80kg per sq m is required to retain the insulation on the roof. Timber decks are frequently used for ancillary areas such as balconies.

- In-situ concrete is the easiest to apply, ideally without a screed to falls, as this can complicate the application and delay the installation programme. In-situ concrete typically requires a minimum of 28 days to cure before roofing works can begin, although this depends on the type of membrane specified. In the case of Proteus’ Cold-Melt system, for example, this can be applied to green concrete three days after it has been installed.

- Precast concrete can also be used, with or without a screed, but the installation method will alter slightly as the panel gaps must be considered if not using a screed. If screeded, it will require a drying time. The relevant standard is BS EN 13693:2004+A1:2009.
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Cold-applied waterproofing

They are fully bonded and usually need a two-coat application, and installation times are usually quicker than single-ply or built-up felt. Because of their seamless application, robust detailing is easier to achieve than with felt or single ply.

Most liquids are not suitable for inverted applications as they can suffer from osmosis, where water molecules pass through the finished waterproofing and cause it to break down and fail over time.

Once cured and correctly specified, liquid membranes provide a seamless, robust penetration resistant surface with a design life of 20-35 years.

**Mastic asphalt and hot melt monolithic membranes**

Traditional mastic asphalt and more recent hot-melt rubber systems are the most common waterproofing for inverted roofs. Thicknesses from 8-10mm mean minimal risk of damage by following trades. They are fully bonded to primed substrate, preventing water tracking if punctured. The two-coat application is easy to apply, and they accommodate high volumes of penetrations easily.

Heavy plant and melting equipment, including agitating mixers, are required to facilitate the material prior to application which requires gas and hot works. Smaller balcony areas can be hard to access due to the size of the machinery involved.

Most of these systems are certified by the British Board of Agrément (BBA) for “the design life of the roof or structure in which they are incorporated”.

**Cold-Melt waterproofing membrane**

Cold-Melt, available exclusively from Proteus Waterproofing, is a cold-applied two-part elastomeric polyurethane waterproofing system that provides seamless protection for concrete, asphalt, metal, wood and other substrates, including decks with zero falls.

It is suited to inverted roof applications, with fast, value-for-money installation, and is particularly good in areas of detail. It is BBA certified to last for the lifetime of the building it is protecting and is one of the greenest membranes in the world.

The trademarked Cold-Melt liquid roof system incorporates recycled rubber crumb, castor oil and other organically grown products to create an elastomeric, seamless, cold-applied membrane that is quick, simple and safe to apply.

The Cold-Melt system incorporates inverted roof insulation and, with or without insulation, can be designed as a paved, decked, ballasted, green or brown roof. The membrane does not become brittle with age and, when protected from UV exposure, it is certified to last the life of the structure.

Cold-Melt exhibits no odour and can be applied in confined spaces. As well as inverted roofs, it can be used on a range of decks including concrete, asphalt, timber/plywood and metal balconies and roofs.

**How is it installed?**

Cold-Melt is a tough and very flexible monolithic waterproofing membrane. As its name suggests, no naked flame or boiler is involved. Unlike other membranes, it can be installed over green concrete after three days or over damp surfaces.

The first layer, Pro-Carrier Membrane SA, is a self-adhesive bituminous waterproofing membrane that forms a barrier against vapour and gases and is laid over a pre-primed surface.

It comprises a self-adhesive, low thickness bituminous compound which is self-protected by an aluminium film. Glass fibre and polyester reinforcement provide excellent puncture resistance.

It is applied to provide a reinforcing layer to all areas receiving the Cold-Melt application and provides instant waterproofing. This layer can be left for several weeks while trades complete their works before the top Cold-Melt coat is roller applied.

The seamless Cold-Melt layer enables details such as drainage areas to be quickly completed. Once cured, it is BBA certified to last the lifetime of the building or the substrate on which it is installed.

The Cold-Melt membrane can be trafficked once cured, for applications such as balconies or podium decks, or take insulation, ballast and other materials to complete the inverted roof. Cold-Melt can be trafficked by other trades prior to being covered but would not be left as an exposed membrane - other than exposed upstands which are protected by a further coat of Cold-Melt UVR top coat.

**Insulation for inverted roofs**

There are two main types of insulation for inverted roofs: extruded polystyrene (XPS) and expanded polystyrene (EPS).

Specifiers should check that products are certified by the BBA for inverted roof applications, green roofs and roof gardens. They should also check that the declared thermal conductivity (or lambda value) is calculated to BBA specifications, and that the moisture conversion factor and rainwater cooling factor required by European standard ETAG 031 are applied.

XPS is the traditional choice for inverted roof systems. It should be manufactured to BS EN 13164. Some manufacturers have improved the lambda value of boards to 0.034W/m²K, enabling a 200mm-thick board to achieve a U-value of 0.15. ETAG 031-1 states that XPS is suitable for untrafficked or pedestrian areas, green roofs, roof gardens and parking decks.

EPS should be manufactured to BS EN 13163. The thermal performance is lower than for XPS with a lambda value of 0.038W/m²K. ETAG 031-1 states that EPS is also suitable for trafficked or pedestrian areas, but not for green roofs, roof gardens and parking decks.

**Design considerations: zero falls**

The Building Regulations refers to BS 6229:2003 in the case of falls on flat roofs. It specifies minimum finished falls of 1:80, achieved by designing to 1:40 to allow for a 25mm deflection every 1m.

In 2016, BS 6229 will be updated to include zero falls applications as defined...
Even waterproof membranes need to evolve if they are to work in tandem with modern technology – so welcome to the future – it’s Cold-Melt®.

Cold-Melt® from Proteus Waterproofing - is a membrane so tough that it is BBA certified to last the lifetime of the building on which it is installed - and so gentle that it will work in perfect harmony with intricate heat sensitive detailing such as plastics, wiring and modern communications equipment.

Cold-Melt® is installed in two advanced waterproofing layers – the first, a self-adhesive sheet which provides instant waterproofing for up to several weeks to allow other trades to work – the second a seamless cold applied layer to seal the roof – for the life of that building.

No naked flame, no heat, no molten material – say goodbye to the past – the future is Cold-Melt®.

Find out more, call: 01268 777871
or email: enquiries@proteuswaterproofing.co.uk

21a Sirdar Road, Brook Road Industrial Estate, Rayleigh, Essex SS6 7XF
www.proteuswaterproofing.co.uk  @Proteus_UK
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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
Cold-applied waterproofing

1. What is another name for a protected membrane roof?
   - A living roof
   - A cold roof
   - An inverted roof
   - A pitched roof

2. What is the life expectancy of Cold-Melt once covered?
   - 20-35 years
   - 50 years
   - The lifetime of the building or substrate

3. Is heat required in any part of the Cold-Melt installation?
   - In no part of the installation
   - During the application of the first Pro-Carrier membrane
   - During the application of the final top coat
   - Only when used on certain types of decking

4. What type of insulation is traditionally used in an inverted roof build-up?
   - Mineral wool
   - Vacuum insulated panels
   - Expanded polystyrene
   - Extruded polystyrene

5. Can Cold-Melt be laid over damp substrates?
   - It can be, but only once three days have passed
   - It can be laid over damp substrates
   - It should never be laid over damp substrates
   - It can be, but not within confined spaces

Sustainability
The thermal insulant and the deck type have the biggest impact on an inverted roof’s Green Guide to Specification rating. Most inverted roof insulation boards have an A or A+ rating, but as an inverted roof is usually on a concrete deck, the overall rating will be C or D.

The Green Guide informs BREEAM ratings, and here the biggest additional contribution will be the ISO 14001 certification for the manufacture of the waterproofing and the insulation. Biodiverse and intensive green roofs can also add points. In recent years, the BRE has linked its BES 6001 Responsible Sourcing of Construction Products assessment to BREEAM.

Cold-Melt on site in the City
So how does Cold-Melt work in action? A highly innovative vertical application of 1,000sq m of Proteus’ Cold-Melt waterproofing membrane provided a watertight finish at the £53m Moorgate Exchange – a landmark 12-storey development in the City of London, which created 21,000sq m of Grade A office space built to BREEAM Excellent and Platinum LEED environmental standards.

With works undertaken at a height of 3.5m on a vertical surface, it was vital that any waterproofing application followed a strict regime to ensure the health and safety of site operatives. Cold-Melt ensured minimal disruption on site, exceptional health and safety standards and a quality, watertight finish.

For a waterproofing application within the building’s oil tank storage room, exceptional chemical resistance was a prerequisite. Cold Melt offered a fast, hassle-free and high quality solution, meeting strict application restrictions and enabling exceptional attention to detail.

Keeping fit for purpose
Some 750sq m of Cold-Melt liquid roof membrane was used to provide waterproofing protection for a state-of-the-art health and fitness centre – built as part of the £2m regeneration of Charlton Lido in south-east London.

Opened in 1939, the historic lido was closed for a two-stage refurbishment which saw a new reception, cafe and seating areas built and the 50m heated outdoor pool reopened to the public. For phase 2, a new gymnasium was created to provide leisure facilities all year round.

To waterproof the new concrete deck and provide seamless protection around perimeter details, Cold-Melt was specified to provide high performance from the concrete deck to perimeter details and hand rail brackets.

Justin Pitman is sales director with Proteus. proteuswaterproofing.co.uk

CM

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Key events by region for the month ahead
Paul Nash, a director of Turner & Townsend Project Management Ltd, has become the 113th President of the Chartered Institute of Building and one of the few Presidents to have worked in both the contracting and the consultancy side of the industry.

Delivering his inaugural address to politicians and industry leaders, Nash highlighted the role professionals play in today’s industry, citing as one of his objectives to make ethics a central theme for the year ahead.

“We are all responsible for the reputation of this industry and for the wellbeing of the people who work within it. No matter what country we work in,” he said.

“Ethics defines what it means to be a professional. Behaving ethically entails tough decisions. And we have a responsibility to help our members make those right decisions.”

Over the next 12 months the CIOB is set to release a new, simplified Code of Conduct to describe clearly what the public and the industry should expect of a CIOB member. New learning modules on ethics and governance will be developed by the CIOB Academy to help support members and other professionals in the industry.

Nash welcomed the CIOB’s involvement with the International Ethics Standards Coalition, made up of more than 60 organisations, which will develop and implement the first set of globally recognised ethics standards for property and related professional services.

During the week-long CIOB Members Forum and conference in Hong Kong, where Nash took up his Presidency, the CIOB announced the publication of its Building A Fairer System: Tackling Modern Slavery in Construction Supply Chains report which focuses on how industry, NGOs, clients and governments can collaborate to create more ethical and sustainable supply chains for labour and materials around the world.

To learn more about the new president visit www.ciob.org/about/meet-president-paul-nash

CIOB SUPPORTS ARMED FORCES INTO CONSTRUCTION MANAGEMENT

The CIOB has created a route into membership for those with military experience, and is backing an initiative to increase recruitment from the armed forces into construction.

This follows a CIOB survey of more than 700 construction professionals, in which 77% of respondents said that ex-service personnel could help plug the management skills gap in the industry. 230,000 new recruits are needed in construction by 2020 with skills shortages no longer confined to the trades; demand for professional, technical and managerial staff is escalating. Roughly 20,000 men and women leave the armed forces annually, having developed strong team-working, leadership and communications skills making them ideally suited to many managerial roles in construction.

The CIOB is supporting BuildForce - an initiative to raise awareness of the construction careers with armed forces leavers - by promoting to armed service leavers accessible routes into a professional qualification that will help them gain management roles in construction.

To learn more about the armed forces careers visit www.ciob.org/arming-construction-industry-future
Students from Glasgow Caledonian University win CIOB Global Student Challenge

Cali Construction from Glasgow Caledonian University has won the third annual CIOB Global Student Challenge competition. The team collected the award from CIOB President Paul Nash at the President’s Inaugural Dinner on 15 July, having beaten five other finalist teams to the coveted top spot.

They will also receive £2000 in prize money along with access to mentoring from industry leaders. In the final, held at the Grand Hyatt Hong Kong, Cali Construction held off the challenge from five teams from around the world in the process of becoming champions. Alongside the UK, the other countries represented in the final were Australia, Hong Kong, South Africa and China.

The annual CIOB Global Student Challenge invites teams to compete at running a virtual construction company in a simulated environment using the MERIT software. Developed at Loughborough University, it has been used to train young professionals since 1988 as part of in-course modules in degree programmes.

The software enables students to develop business management skills, requiring them to take decisions on staffing levels, estimating and bidding, managing cash flow and capital and seeking investment opportunities.

Around 50 teams from universities all over the world entered the 2016 competition, which began back in March. After six rounds of competing, the top six ranking teams travelled to Hong Kong for the finals in July.

Cali Construction team member Peter McElroy said: “Winning topped off what was a fantastic event. Everyone involved was part of something very special. Our team had a real blend of personalities, but with a common purpose. The clear strategy, listening and compromising gave us our best results.”

Cali Construction from Glasgow Caledonian beat Bond Agents from Bond University to the top prize while Prestige Worldwide from the University of Cape Town came third. The other three finalists were: BRE Team 4 from The Hong Kong Polytechic University, Oath Keeper from Chongqing University and AGBA from Deakin University. Cali Construction managed to match the achievement of last year’s entrants from Glasgow Caledonian, Saltire, who also won.

To find out more about Global Student Challenge head here: gsc.ciob.org

I&R AWARDs

APPLY NOW FOR THE CIOB INTERNATIONAL INNOVATION & RESEARCH AWARDS 2016

The CIOB International Innovation & Research (I&R) Awards recognise outstanding achievements in the built environment from academic research to industry innovation. Encompassing six award categories, the Awards are open to recent graduates, academics and industry practitioners:

1. Innovation Achiever’s Award
2. Digital Innovation Award
3. Innovation in Education & Training Award
4. Research Paper Award
5. Undergraduate Dissertation Award
6. Masters Dissertation Award

The awards are free to enter and open to CIOB members and non-members at any stage in their career. Cash prizes of up to £2,000 are on offer. The entry closing date is 7 October 2016 (Masters Dissertation Award is 11 November 2016).


For inquiries, contact iandrawards@ciob.org.uk
Long term teamwork rewarded with excellence award

Huddersfield Royal Infirmary with partners Lendlease and Interserve scooped the award for Integration and Collaborative Working, beating strong competition from 10 other finalists at the Constructing Excellence awards night for Yorkshire and Humbers held in Leeds in July.

This award celebrates the long term relationship of the whole team, over 11 years, with professional service provider Lendlease and P21+ PSCP Interserve. The team delivered a programme of capital works in the challenging environment of a live hospital. Projects have included ward upgrades, five theatre refurbishments, training facilities, improving privacy and dignity and the physical condition in both the A&E and X Ray departments.

The gala presentation evening included 12 awards hosted by Danni Hewson - BBC Look North’s award-winning business and money correspondent.

Interserve secured the biggest prize haul of the night walking away with two further awards: Achiever of the Year and the much coveted Project of the Year award for the regional finals in London later this year.

The evening also included a business card draw, which saw three lucky winners take home prizes including: a helicopter ride over London, a tour of the state rooms at Buckingham Palace, and a champagne trip to The Shard.

London, a tour of the state rooms at Buckingham Palace, and a champagne trip to The Shard.

The evening’s headline sponsor was Berkeley Homes with secondary support from, J Coffey Construction and Mace.
Sustainability scholars shine as applications for next year open

In June the two CIOB Sustainability Scholars for 2015/16 presented their research. Emma Gains from Faithful+Gould and Szilvia Zakar from Sir Robert McAlpine.

Emma is a sustainability consultant at Faithful+Gould. She holds an MSc in Sustainability from the University of Leeds and is a BREEAM assessor managing projects for the University of Cambridge, Crossrail and Met Police.

Emma’s research highlighted two key climate change risk areas for London: increased temperatures and elevated precipitation levels. The research analyses the industrial response within the fit-out office sector to mitigating these changes. The principal findings of the research show tools and guidance can provide an array of different topic areas around adaptation and present ideas to deal with possible climate change risk aspects. The analysis concludes the content of the guidance is only reaching a selective audience and is restricting the application to the wider industry. The findings recommend more needs to be done to provide a combined guide that has a broad outreach.

Szilvia is a sustainability manager with Sir Robert McAlpine currently working on the flagship Bloomberg London project. Szilvia has 14 years’ experience, advising and monitoring site construction teams with regard to environmental protection and the implementation of ISO 14000 and BREEAM. Her paper explores the applicability of Natural Capital Accounting to the construction industry by first placing Natural Capital thinking into a theoretical framework in order to show how it differs from other approaches to environmental preservation. It then goes on to elaborate on the key financial and accounting concepts involved and looks at some objections from within the wider environmental movement. A number of practical examples are examined, by way of case studies and interviews, both within the construction industry.

Established in 2007, the Sustainability Scholarship supports research in the field of sustainable construction and offers an annual award of £3,000. The Sustainability Scholarship Panel invites UK construction-related companies to identify and nominate talented graduates who have demonstrated exceptional skills, motivation and drive, to apply for this one-year research project, focusing on a topic that will be of benefit to industry, the scholar and their company. Applications for the 2015/16 scholarship open this month (September).

For full details contact: Dr Gina Al-Talal on gal-talal@ciob.org.uk
Many construction projects are getting larger and more complex which increases the need for collaboration and information sharing. Every party needs to be involved from day one and maintain their visibility throughout the construction to keep everything in balance. Doing this without a single shared view of the project is nearly impossible. This is why project planning and management solutions, which have always been the mainstay of keeping projects on track, have expanded their role so significantly.

"Where today’s construction leaders are working to understand the potential of cloud, social media and big data, tomorrow’s construction companies will be digital to the core"

4D construction planning and scheduling is now enriching the construction planning process and delivering improved communications and stakeholder engagement. Construction planners working in 4D can create animated sequences that show a structure’s components being built up, including both permanent and temporary works, and in doing so create a robust delivery approach that can be understood and implemented by the project delivery team. These digital construction run-throughs allow ‘what if’ scenarios to be tested and can help pinpoint how best to accommodate major equipment and teams on site.

As a software developer we reshaped our project management tool, Asta Powerproject, to fit a BIM-centric future. We have expanded our focus from project planning to 4D BIM and onwards to 5D BIM with the recent integration of our cost management system, Bidcon.

We are seeing growing interest from customers in 5D BIM to integrate cost management with our 4D solution. This integrated view enables cost estimators and quantity surveyors to act as part of the core BIM team, adding not only their information but their cost control expertise. It results in much tighter cost management overall, with the ability to respond quickly to price changes and provide better cost reporting to stakeholders. This, in turn, drives more informed decision-making and the ability to extract and analyse costs throughout the entire project lifecycle.

A digital construction future
The construction sector has been regarded by some as a bit of a dinosaur but I disagree with that. As a technology provider to the industry we have seen major steps forward in recent years. We expect the pace of change to keep accelerating as wider digital construction takes hold. BIM is only part of the digital transformation of this sector that we will see in coming years.

The barriers to BIM and digital construction will melt away over time.

Where today’s construction leaders are working to understand the potential of cloud, social media and big data, tomorrow’s construction companies will be digital to the core. There’s a new generation coming in which sees none of the fears or barriers to using digital technology or sharing information. They will look to embrace technology to give them competitive advantage and this challenger generation will make digital construction a universal reality.

Whilst the short term priority is about grappling with BIM Level 2, there is a need to focus on what skills will be required in the future. Digital building techniques will only continue to progress further. It is incumbent on the entire construction industry to ensure all their employees become conversant in BIM and provide ongoing training to take in all new developments. The future of digital construction offers much and by embracing it now we will prepare the ground for a bright digital future.
Construction Manager of the Year Awards

WHO WILL IT BE?

After four months of rigorous judging across the country, the 2016 CMYA finalists have been announced. The judges have decided, who, amongst the top Construction Managers’ nominated this year, will contest the silver and gold medals over eleven categories at the Awards dinner on 15th September. Who, from the eleven gold medal winners will the 2016 Construction Manager of the Year be?

To find out and celebrate the very best in the industry with us, reserve your places now! Demand for places at the Award dinner is always high and space is limited. Please call Lesley Curtis on 01344 630802 to reserve without obligation or simply download a booking form from www.cmya.co.uk.

Thursday 15th September 2016
The Great Room
Marriott Grosvenor House Hotel
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London
W1K 7TN

Finalists

NEW BUILD & REFURBISHMENT
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Concorde House,
London Gatwick Airport

Michael Castle ICIOB
Raymond Brown Building
Hounsdown School East Block, Toncas

Peter Griffiths
Coniston Ltd
Epping Forest Museum,
Waltham Abbey

Andrew Hopewell MCIOB
Nottsngham Trent University
Bectory, Nottingham Trent University

Ben Longworth MCIOB
Fellthor Construction
6th Floor Centre, Little Heath School, Tidworth

Mark O’Callaghan
Warrs
Smarden Primary School

Mark Penny MCIOB
ISG
Lutworth & Wiffrich Primary School

Phil Steele
Skylar Group
Rail Royce Goodwood Plant,
Chichester

NEW BUILD & REFURBISHMENT
BETWEEN £3 - 5 MILLION

Richard Attley
Sir Robert McAlpine
The Glade, Middlesbrough

Leigh Bennett
Interserve
Longley Centre, Northern General Hospital, Sheffield

Rakesh Chavda MCIOB
Voller Fitzpatrick
41 Welbeck Street, London W1

Declan Doherty MCIOB
Farrat
Edgwick Community Primary School,
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Learn all about CMYA and book your table at

Dennis Wilcox, Lend Lease, Construction Manager of the Year 2015

The Awards evening will be hosted and presented by Steph McGovern

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ISTS

Allen Greenslade
Geoffrey Osborne
The Alston Building, Downview
Primary School, Bognor Regis

Marat Mugutinov MCIOB
Simons
AG Barr Factory & Distribution
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Tony Shervane
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Wayne Mears
Willmost Dixon
Osmoston Primary School,
Derby

Mark Wolverson MCIOB
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Primary & Nursery School,
Plymouth

NEW BUILD & REFURBISHMENT BETWEEN £7 - 10 MILLION

Matthew Anderson
Wates
Eden Boys School, Bolton

David Clarke
Wates
Multi Storey Car Park,
University of Leeds

Adrian Colman
Willmost Dixon
Lincoln University Technical
College

Jamie Denham
Interserve
Gringley Leisure Centre

Ian Knight
McAlpine
Cotey Primary School,
Bridgend

Chris Martin MCIOB
Kier
Wellesley Road Care Home,
London

Stephen Paice MCIIOB
Morgan Sindall
Sports, Business and Arts
Blocks, Carers College

Mike Walsame MCIOB
Willmost Dixon
Ryton Leisure Centre,
Oldham

Clive Watson MCIOB
Kier
The Archer Academy, East
Finchley

Jim Wilson MCIOB
Morgan Sindall
Luton Upping Primary School,
Kirkwall

NEW BUILD & REFURBISHMENT BETWEEN £10 - £14 MILLION

Matt Bidwell
Morgan Sindall
All Saints Green, Norwich

David Disney MCIOB
Shayler
Birmingham Institute of
Forest Research

Christopher Hickman
Geoffrey Osborne
Portobello SEN School,
Camberley

Neil Locke
Willmost Dixon
Fairfield Pools & Leisure
Centre, Dartford

David Norman MCIOB
Wates
Downe Propellers, Mistelbeck

Bill O'Meara
BAM
Investcorp Building, Oxford

David Rice
Sir Robert McAlpine
Statoil Aberdeen Headquarters

NEW BUILD & REFURBISHMENT BETWEEN £14 - 20 MILLION

Simon Dovener MCIIOB
Interserve
Factory 2050, Sheffield

Mark Elliott MCIOB
Wates
Building 33, Southampton

Tim Green
Simons
Nuffield Health Cambridge
Hospital

Ben Heath
Willmost Dixon
Skills Park & Environmental
Buildings, NESCOT, Epsom

Glyn Jones MCIOB
Willmost Dixon
Hobburn Central, Tyne & Wear

Will McElhany
MCIOB BAM
The Queen Elizabeth Teaching &
Learning Centre & Stratified
Medicine, Glasgow

Phil O'Brien MCIOB
Morgan Sindall
University Campus,
Aylesbury Vale

Sawne O'Harre MCIOB
O'Hare & McGovern
Welcome-Walsall Institute
for Experimental Medicine, Belfast

Mark Pittman MCIOB
Willmost Dixon
The Fusion Building, Poole

NEW BUILD & REFURBISHMENT BETWEEN £20 - £30 MILLION

Noel Caferley MCIOB
Willmost Dixon
100 Space Technology Centre,
Didcot

John Cole
Sir Robert McAlpine
The Grange Development,
Aberdeen

Nick Howdle MCIOB
BAM
Airdrie International Air
Conditioning, Leeds

Stuart Johnstone
RCS Management Consulting
Kidzania, London

Paul McClement MCIIOB
Farrans Construction
Ellon Academy Community
Complex, Aberdeen

Anthony Mitchell
BAM
TPP New Headquarters
Building, Harworth, South

Mike Outter
Kier Construction
The Ogilvie Building, Hinckton

NEW BUILD & REFURBISHMENT ABOVE £35 MILLION

Paul Fowles
Kier
Cheleham Racecourse
Re-development

Geoff Grant MCIOB
Balfour Beatty
199 Westminster Bridge Road,
London

Stephen Harnett MCIOB
Willmost Dixon
Heartspace Development,
University of West London

Stove Holland MCIIOB
Ling O'Rourke
The University of Oxford
Bisenvan School of
Government

Ian Rchetti MCIIOB
Land Lease
King's Gate & the Zigzag
Building, London

James Williams
Mace
12-14 New Ferret Lane, London

Marten Woodhouse
Mace
Birmingham New Street
& Grand Central Station
Redevelopment

RESIDENTIAL 7 STOREYS AND UNDER

Lawrence Baxter MCIIOB
Wates
Ersh Park Recreation

Nick Cuffe FCIOB
Colmar
One Shore Road, Poole

James Donnelly
Willmost Dixon
Oakwood Gardens, Bedworth

Anthony Gallagher MCIIOB
Durkan
The Academy, Woolwich

Wayne Jackman
McCarty & Stone
Hillborough House,
Beckton-on-Sea

Steven Matthews MCIOB
Willmost Dixon
Bunns Court, Thirrouc

Huws Mense MCIIOB
Balfour Beatty
Elm Tree Court, Bradford

Peter Tannian MCIIOB
Bouyges UK
River View, Plymouth

Clara Tiffny MCIIOB
McAlpine & Rushe
73 Great Peter Street, London

Tom Tracy
CCG (Scotland)
Sighthill, Glasgow

RESIDENTIAL OVER 7 STOREYS

Damian Barden
Telford Homes
Unex Tower, Stratford, London

Bradleigh Coker MCIIOB
Gilford Fry
Broom House, Tottenhu

Ian Coryder
Cardissa
The Flinsollul Building,
King's Cross

Derek Gillam
Durkan
Verros, Croydon

Matthew Kemp MCIIOB
Willmost Dixon
Carronary Quay,
Southampton

Alan McGinley
Berkeley Homes
Benham House, Woolwich

Paul Marlow
McAlpine & Rushe
UNITE Angel Lane,
尔斯福

Barry Rowlands
Telford Homes
Holland Estate,
Kensingtom Apartments,
Stoke, Burnley, London

David Rowsell MCIIOB
Wates
Pure Aldgate, London

Jim Wates
Wates
Greenwich Peninsula
MOI 14 & MOI 15

RESTORATION

Vince Finnegan
Wates
Royal Chelsea Hospital

Richard Myatt MCIIOB
Infield Hall
Astro Webb Student Hub,
University of Birmingham

David Pachham MCIIOB
BAM
The German Gymnasium,
London N1

Mike Saddington MCIIOB
R. L. Davies & Son
Harlech Visitor Centre and
Bridge

With Gold and Silver Medals to be won in each category these CIOB Awards reward individual
management excellence. They're also recognition of the quality of the contractors and clients
who demand the highest standards and employ only the best people.

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www.cmya.co.uk

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Case study

A shipbuilding company handled the building of the pod’s steel plate shell which was assembled offsite in Holland as a monocoque construction.
creation of local labour opportunities and workforce development initiatives, and the formulation of projects with schools and colleges. Interserve also won a Considerate Constructors Gold Award in recognition of its community engagement throughout the project.

This latest addition to the University’s city centre campus is part of a £100m campus development plan, due for completion in 2020.

Matthew Chancer MCIOB
Senior site manager, Kier Construction Western and Wales

Q Tell us about your career to date
As a fresh faced post-graduate I started my career in construction when I joined Kier Group as a graduate site manager in 2007. Since then I’ve worked for Kier across the South Wales area on numerous projects ranging from new builds to refurbishment schemes and within a number of different sectors e.g. education, MOD, MOJ, commercial etc. I’m currently managing Scape Framework projects at the Swansea University campus. I was fortunate enough to be nominated for the Construction Manager of the Year Awards in 2014 and became a finalist for ‘New build & refurbishment below £2 million’. After achieving MCIOB I have continued my involvement with the CIOB mentoring and offering support to those looking to apply for their Professional Review with peers within Kier and also Professional Review workshops. I have also been the Swansea CIOB Committee’s vice chair for the past year.

Q Why did you choose construction as a career? What else would you have done?
Growing up I had been fascinated by the diversity and complexity of the construction industry and the challenges offered by the industry always excited me. Every day there is a new challenge, you’re constantly meeting new people, establishing new relationships and there are always new things to learn and skills to develop.

I’m a complete foodie (or food snob!) and probably naively, fancy myself as a bit of a chef. So if it hadn’t been construction I probably would have ended up trying my hand at cooking in some form or another.

Q What do you do in your spare time?
I do love my food, so I cook whenever can and I’m always on the lookout for somewhere decent to eat out. To satisfy my competitive edge and keep up the fitness I play local league football. I also love film and music.

Q Any embarrassing work moments to share?
I did spend my early years within the industry sporting a rather long scruffy head of hair. There was many a name given to that hairstyle, so it was not much an embarrassing moment but more a period of embarrassment!

Q What are your future career aspirations?
In the immediate future I’m setting my sights on project managing some exciting and challenging schemes. I’ll also be continuing my involvement with the CIOB and am keen to progress towards FCIOB. Longer term, senior project management and contracts management really appeals to me.

MEMBER BENEFITS

FULL CORPORATE MEMBERSHIP OF CIOB brings with it many benefits, not least the descriptors Chartered Construction Manager or Chartered Builder, the right to vote or to become a trustee. Being a member or fellow also gives you 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...

OPPORTUNITY | ITN | Be the star of the show in online programme

ITN Productions and the CIOB have partnered once again to produce a news and current affairs-style programme exploring the projects, people and stories that are shaping the future of the construction sector. With a skills shortage, especially at management level, the online programme will focus on people in senior positions who have been delivering projects to a high standard, examining the essential and new emerging skills needed to cope with future challenges in construction.

For more information, or to participate in the programme, please contact James Linden, Programming Director at ITN Productions on 0207 430 4228 or james.linden@itn.co.uk

LEARNING | PRACTICAL SCHEDULING DELAY ANALYSIS COURSE

Premier London, October 5 & 6

The construction industry has one of the highest numbers of delayed project completions. Each year, millions of pounds are lost through poor time management, project controls and record keeping. Therefore, a clear understanding of the principles underpinning project delay and the range of techniques that are used to demonstrate these matters, is key to organisational stability. This two-day residential course – Practical Scheduling Delay Analysis – provides a solid framework for delegates, equipping them with a theoretical and a practical understanding of the key principles, tools and techniques of project delay and disruption. It is suitable for anyone engaged in project delay analysis or NEC3, JCT, or ICE contracts.

For more information on the course, www.astapowerproject.com/services/training/

LEGAL SERVICES | CITATION | Taking the strain with legal issues

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To find out more, call 0345 844 1111 or visit www.citation.co.uk/construction

SOFTWARE | CUBICOST BY GLODON | Free trial and training in cost software

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Contact us to book a demonstration. E: uk@glodon.com. W: www.cubicost.com T: 0203 808 4669

FINANCE | CIOB INSURANCE SERVICES | Premier BusinessCare

As the approved business broker to the CIOB, Premier BusinessCare specialises in finding CIOB members the best insurance covers available in the market at competitive prices. Working with a variety of UK insurers, they are able to give you a quick quotation to cover your profession and your business, including Professional Indemnity, Directors and Officers, Liability covers, and many other construction and commercial insurances. As an added bonus, products purchased through Premier BusinessCare’s CIOB Insurance Services directly support the work of the Institute across the UK.

Call 0330 102 6158 or visit www.ciobinsuranceservices.com for more details

LEARNING | IHS | Have you tried the new Construction Information Service?

The Construction Information Service (CIS) has been thoroughly refreshed and optimised to provide an indispensable source of key information that can help you realise significant time and cost savings. The online tool delivers current regulations, construction standards and industry news covering building, engineering, design and construction processes. Data covers construction stages from design to completion for projects in the UK and Republic of Ireland. Users have access to technical data from 500+ publishers including full text copies of British Standards and CIOB documents. Using the CIS, you will be able to:

- Ensure design compliance and sustainability
- Innovate designs and construction methods
- Support construction lifecycle from start to completion

For further information see www.ihs.com/products/uk-construction-information-service.html or email michelle.judd@ihs.com
**FRIDAYS TO SATURDAYS**

**EAST OF ENGLAND**
Visit to University Arms Hotel
7 September, 6pm, UAH, Cambridge
Contact: mix@ciob.org.uk
Visit to Energy Recycling Facility Peterborough
15 September, 3pm, ERF, Fenny Gate, Peterborough
Contact: mix@ciob.org.uk
Aggregates Site Visit
15 September, 4pm, Bardon Hill Quarry, Leicestershire
Contact: coh@ciob.org.uk
SuB & The Role of Permeable Paving
20 September, 7pm, ARU, Chelmsford, Essex
Contact: coh@ciob.org.uk
Payment Disputes
21 September, 7pm, Beales Hotel, Hatfield
Contact: coh@ciob.org.uk
Planning your Ecology Work
22 September, 6pm, Lancaster House, Norwich
Contact: mix@ciob.org.uk
Industry Gala Dinner
23 September, 7pm, St. Catherine’s College Cambridge
Contact: mix@ciob.org.uk
How to Write your PR Report Workshop
29 September, 6pm, Hallmark Hotel, Bar Hill, Cambridge
Contact: mix@ciob.org.uk

**LONDON**
Introduction to Management – ISO50001
21 September, 6pm, Union Jack Club, Sandell Street, London, SE1 6UJ
Contact: chierlehy@ciob.org.uk
Workshop
29 September, 4:30pm, Mace Business School, 155 Balsall Common, Birmingham
Contact: jawhite@ciob.org.uk
Planning your Ecology Work
22 September, 6pm, Lancaster House, Norwich
Contact: mix@ciob.org.uk
Industrial Dinner
23 September, 7pm, St. Catherine’s College Cambridge
Contact: mix@ciob.org.uk
How to Write your PR Report Workshop
29 September, 6pm, Hallmark Hotel, Bar Hill, Cambridge
Contact: mix@ciob.org.uk

**MIDLANDS**
Legal Update
12 September, 6pm, Nottingham
Contact: Jane Newton jnewton@ciob.org.uk
Drones in Construction
13 September, 4:30pm, Balsall Common
Contact: jnewton@ciob.org.uk
Demolition & Regeneration in Worcester
14 September, 5pm, Worcester
Contact: gflloyd@ciob.org.uk

**SCOTLAND**
Glasgow
Professional Review Workshop
7 September, 9am, Competence Matters, 56 Deaconslie View, Westfield Park Cumbernauld G68 9HN
Cost: £90 +vat
Contact: wmarshal@ciob.org.uk

**WALES**
Professional Review Workshop – Part 1
5 September, Holiday Inn Cardiff North, Merthyr Road, Tongwynlais,
Contact: vcoxon@ciob.org.uk
Legal Talk by Robert Shawyer
5 September (provisional), West Wales TBC
Contact: vcoxon@ciob.org.uk

**YORKSHIRE**
Novus Committee Meeting with tour of award winning Barnsley College 6th form Centre
29 September, 6pm, Barnsley College
Contact: sgiles@ciob.org.uk
BIM Breakfast Seminar
13 September, 8am, Sheffield Hallam University
Contact: sgiles@ciob.org.uk
Sheff & South Yorkshire Centre Meeting
22 September, Sheffield Hallam University
Contact: sgiles@ciob.org.uk
Leeds & West Yorkshire Centre Meeting
25 September, time and venue tbc
Contact: sgiles@ciob.org.uk
CCISY Awards 2016
7 October, 6.30pm until late, Sheffield Cutlers Hall
Tickets are £60+vat each, tables of ten guests £600+vat.
Contact: sgiles@ciob.org.uk

To find out more about events in your area go to www.ciob.org.uk/regions or look out for our electronic news and event updates from your CIOB branch or CIOB centre. To receive information from the CIOB visit www.ciob.org.uk and log on to the members’ area to update your details and preferences.

If you have a smartphone, iPhone or tablet, why not search your apps for a free downloadable QR reader and scan our details.

If you would like to talk to us about an event not on this page, please contact Chris Holford
cholford@ciob.org.uk 01344 630801
Announcements

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EGGER UNVEILS A LIGHTER, STRONGER ALTERNATIVE TO 38MM CHIPBOARD

EGGER UK has launched OSB HDX a brand new 30mm heavy duty, load-bearing OSB panel suitable for use in humid environments.

It replaces EGGER’s 38mm HDX chipboard and is the ideal solution for heavy duty load-bearing environments such as mezzanine flooring, racking, shelving, working platforms and decking, where P5 or P6 38mm chipboard would typically be used.

S & L United Storage Systems Ltd in Essex, specialists in the supply and installation of shelving and racking systems and mezzanine flooring for warehouses, distribution centres, retail environments and self-storage facilities, have been quick to see the benefits.

“Our fitters were extremely happy with the performance of EGGER’s new OSB HDX product. They found the panels easy to handle over what they normally use, were surprised by how light in weight the product is given its superior structural properties and how well the boards fitted together. They were able to complete the installation quicker and are happy to use OSB HDX on future projects,” said Robert Wray, contracts manager at S&L United Storage Systems Ltd.

The low swelling properties of EGGER OSB HDX means it is less likely to pick up moisture which can lead to uneven floors. Another benefit for installers is it’s easy to fit. With a tongue and groove profile on the two long edges, the panels are laid the same way as 38mm chipboard.

Due to it only being 30 mm thick, it’s 20% lighter, despite it being wider than a typical chipboard panel (675 mm as opposed to the standard 600 mm), the wider board means that it is easier to manoeuvre and quicker to lay. EGGER OSB HDX board dimensions are 2400 x 675 x 30 mm TG2.

To find out more, contact the EGGER building products hotline on 0845 602 4444 or e-mail building.uk@egger.com or visit www.egger.co.uk

Tender

Main contractor required for building works to house new bearing testing machine

The Tun Abdul Razak Research Centre is the UK R&D rubber laboratory of the Malaysian Rubber Board and situated at Brickendonbury, Hertford.

The contract consists of the construction of a single storey building adjacent to an existing industrial size laboratory area that requires a major internal refurbishment to house a new seismic bearing test facility, the first of its kind in the UK.

Building works include:

- Single Storey Building 120sq metres with internal oil spillage bund for 3 hydraulic power packs (2.4T each) with ventilation system (4.2 cubic metre airflow).
- Electrical cable from switch room to new build requires 600kW.
- Internal refurbishment of industrial size laboratory 216sq metres.
- Construct floor service ducts from new building to existing laboratory to house hydraulic pipework.
- Strengthen loading of floor for 12.5T overhead crane and testing machine of 100T.
- Replacement of asbestos roof above laboratory.

For further information on the above works and if you are interested in tendering for the contract please visit our website at www.tarcc.co.uk

The closing date to register is Friday 9th September 2016.
Project of the month
Land Rover BAR HQ, Portsmouth

DESIGNED BY HGP ARCHITECTS and built by contractor Allied Developments, Rover Ben Ainslie Racing’s (BAR) headquarters in Portsmouth has achieved a coveted BREEAM Excellent award.

The architecturally striking 6,875sq m building, which opened in June 2015, is a base for the team to use for racing in the Solent leg of the America’s Cup World Series and has a number of special features designed to minimise energy and water consumption and generate renewable energy.

The £12m building’s prominent atrium allows a direct source of daylight to filter from the top floor down through the building to the heart of the workshop.

The atrium also draws air up through the building, releasing it through glazed louvres to help regulate internal temperatures – all while providing visual interest and physical connection between the various functions and teams within the building.

A bespoke building management system is used to monitor 15 different points across the building, including energy and water consumption, and renewable energy generation.

Phil Ward, associate with environmental consultant Couch Perry Wilkes, says: “A gigantic fabric wrap has been applied to much of the building facade. Its translucency will still admit natural light to the interior, while reducing solar glare. It provides a layer of insulation, protecting the building fabric and retaining heat in winter like a coat.”

The building has also help to improve the local environment, through the installation of 9sq m of artificial reef and oyster cages, with support from base supplier MDL, to boost the declining population of oysters in the Solent.

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