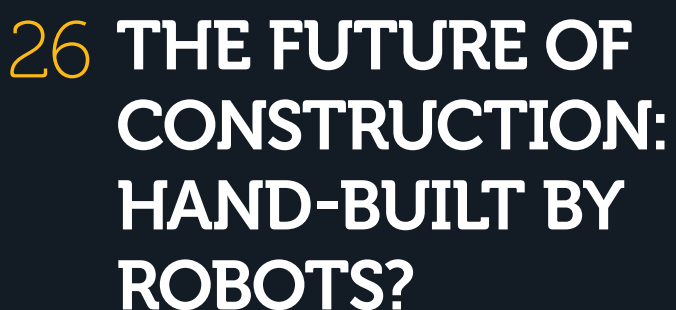




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WELCOME

from the editor

WELCOME to the latest edition of UK Construction Excellence.

In this month's edition we focus on the future of construction.

Where will the digital revolution take us? Is the future hand-built by robots? That is one of the questions asked by Suzanne Gill and Helen Garthwaite, partners at Wedlake Bell and co-founders of Tomorrow's City, Today's Challenge, in their feature.

Technology is often hailed for improving energy efficiency, sustainability and building lifespan, but the fear of robots 'stealing' construction jobs in the future is a startling one.

The benefits of applying BIM technology and digital construction is demonstrated well in the Discovery Building. BIM was instrumental in the design and delivery of this new science and

business hub, catch up with the project team in our report.

On the other side of the coin is the skills shortage, and we look at what can be done to encourage more talent into the industry to fill this gap now.

And, as always, we catch up with the latest contract news, industry movers and our guest contributors, inside.

Victoria Maggiani

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Hand-built by robots?**



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ONS releases 2016 construction statistics

The Office of National Statistics has released its latest statistics for the construction industry to year-end 2016.

Figures show that the value of new construction in Great Britain continued to rise in 2016, reaching its highest level on record at £99,266M, with continued growth in the private sector driving new projects and revenue.

The steady rise in the value of construction new orders seen since 2011 has continued, owing to the increase in all other work in 2016.

However, construction price inflation reached 2.2% in the last month of 2016, above both the CPI and SPPI, at 1.1%.

In materials and components, the trade deficit carries on. Imports are more than double the value of exports and this is concerning in the run-up to Brexit with economic and political uncertainty set to continue. The year resulted in growth in employment, with the skills gaps being filled by 55,831 extra jobs compared with 2015. Most employment is found around London, the South East and the North West, and the number of construction companies is increasing across the country.

Even more positives can be found in the number of construction firms in Great Britain, which increased to its highest level on record in 2016.

The ONS has stated that 2016 was a positive year for the construction industry, and while potential risks lie in confidence in the UK economy post-Brexit, this can be mitigated through government support and investment.

Despite public sector output falling in 2016, low interest rates have facilitated private sector investment in the industry, and the marginal fall in public sector work has been far outweighed by the continuing expansion of the private sector, with growth coming from the housing sector in particular.

Private housing and public other new work provided the main contributions to growth, with only private industrial new orders falling in 2016. The growth in all new housing has come as a result of both private new housing and public new housing increasing.

Construction output grew consistently in real volume terms in every quarter of 2016, resulting in annual growth of 3.8% in 2016. This expansion in construction output comes after two years of relatively high growth in the industry, with construction output expanding by 4.4% in 2015 and 9% in 2014.



National HS2 college launched

The Education Secretary, Justine Greening, has opened a new high speed rail college during a visit to Doncaster.

The new technical education college, the National College for High Speed Rail (NCHSR), is the largest of five new national colleges that have been developed as part of the Government's drive to address the skills shortage. The colleges will provide young people with world-class technical skills such as engineering, design, planning, manufacturing and construction. Education Secretary Justine Greening said: "It has been great to attend the official launch of the NCHSR. It is part of how we are steadily transforming technical education in this country, training up a new generation of skilled young people and the existing workforce so that British business has the skills it needs and people have the opportunities they want – a win-win for everyone."

"We can only do this in partnership with employers – the NCHSR is just one great example of this."

"The impressive new building and training facilities are at the forefront of our ambitions to create a world class system of technical education."

"Doncaster is also one of the 12 Opportunity Areas that will benefit from a share of £72M to raise attainment and aspirations. NCHSR is part of this work, making sure Doncaster's local talent gets the opportunity to fulfil its potential and ensuring a prosperous future for the UK."





£50M flood alleviation scheme operational in Leeds

The initial phase of a hugely ambitious £50M flood alleviation scheme which, in a first for the UK, employs moveable weir technology, has opened in Leeds. Phase I of the award-winning Leeds Flood Alleviation Scheme relies on state-of-the-art engineering techniques and represents one of the largest projects of its kind in the UK today.

Leeds City Council has partnered with the Environment Agency to deliver the landmark scheme, which will safeguard more than 3,000 households, 500 businesses and 300 acres of development space against flood waters from the River Aire and Hol Beck. There's economic benefit too, with 150 jobs and apprenticeship places created during its development and construction.

The scheme itself comprises three core elements: cutting-edge mechanical weirs, merging the river with the canal, and provision of flood walls and embankments spanning 4.5KM through the city centre proper. Crucially, this marks the first use in the UK of moveable weirs for flood alleviation purposes. The new weir

gates are supported by giant inflatable neoprene bladders, which are lowered when high river flows are imminent. It should take around two hours for the gates to lower, and it is now possible to scale flood defence walls down so as not to obscure views of the city's pristine waterfront.

"We are delighted to see this much-needed first phase of the Leeds Flood Alleviation Scheme opened," said Judith Blake, Leader of Leeds City Council. "As could be seen by the devastation at Christmas 2015, providing increased flood protection in Leeds is essential in terms of reassuring our residents and businesses, and this fantastic state-of-the-art scheme provides it for the city centre and downstream at Woodlesford."

Ms Blake continued: "The clever use of the mechanical weirs is a brilliant idea, and they have also brought about environmental benefits with the improved river quality bringing salmon and otters, while the new bridge looks stunning, offering great views of the river and beyond as part of the TransPennine Trail."

According to Emma Howard Boyd,

Chair of the Environment Agency:

"This groundbreaking scheme will not only benefit hundreds of homes and businesses in the city but it will also safeguard 22,000 jobs over the next ten years due to the increased level of protection it provides. It's been great to see Leeds City Council and the Environment Agency working together in partnership to better protect the city – and it is one of many schemes in the Defra programme investing £430M to reduce flood risk across Yorkshire before 2021.

"We're always looking for new ways that we can use technology to reduce flood risk so it's exciting that this scheme is also a first for flood risk management in the UK thanks to the use of the moveable weirs, which can be lowered when river levels are high. On a day-to-day basis, people won't even know they are being protected, and they can enjoy the river, which is a key aspect of the city's South Bank regeneration plans."

Flood alleviation along the River Aire is now complete, though the Hol Beck works will continue into the autumn.

Mott MacDonald appointed to Hitachi Tranista Thameslink roll-out

Network Rail has appointed Mott MacDonald to assist with implementation of the Hitachi Tranista traffic management system as it is rolled out across the wider Thameslink rail network.

For the uninitiated, Tranista is one of several new additions being made to allow 24 trains to run through central London in each direction every hour by 2018. It is fundamental to Network Rail's hugely ambitious £6.5Bn Thameslink Programme.

Tranista will manage the railway in real time and support recovery of operations in the event of inevitable delay or disruption. The integrated system will also provide signallers, maintenance staff and train operators with all the necessary information regarding train operational status, and support the planning and scheduling of services.

Mott MacDonald will now take on an advisory role, offering guidance on proposed changes to operational roles, processes and decision making in support of Tranista. The consultancy will also explore ways to integrate Tranista within existing operational architecture and the possible impact on staff and accommodation.

According to Robert Gray, Mott MacDonald's Project Director for the Thameslink Central Engineering Framework: "This is an important project for us as Network Rail moves forward with the roll-out of new traffic management systems. The award of this contract recognises the skills and expertise of our team and their ability to deal with technically challenging work such as this.

"A key aspect of this project will be our understanding of the capabilities of the system and how it will affect the workload of operational staff. Traffic management is a paradigm shift in the way a railway is operated, so we will need to develop a whole new approach to assessing workload."



£2.5M funding package to speed up UK garden towns

Communities Secretary Sajid Javid has unveiled a £2.5M funding package which will hasten delivery of over 155,000 new homes in garden towns across the country.

Nine garden towns – including those in Bicester and Taunton – are set to benefit from the newly announce funding package, which will fast track construction of each housing development. Varying amounts will be entrusted to the communities and local authorities responsible, granting them dedicated resources and much-needed expertise.

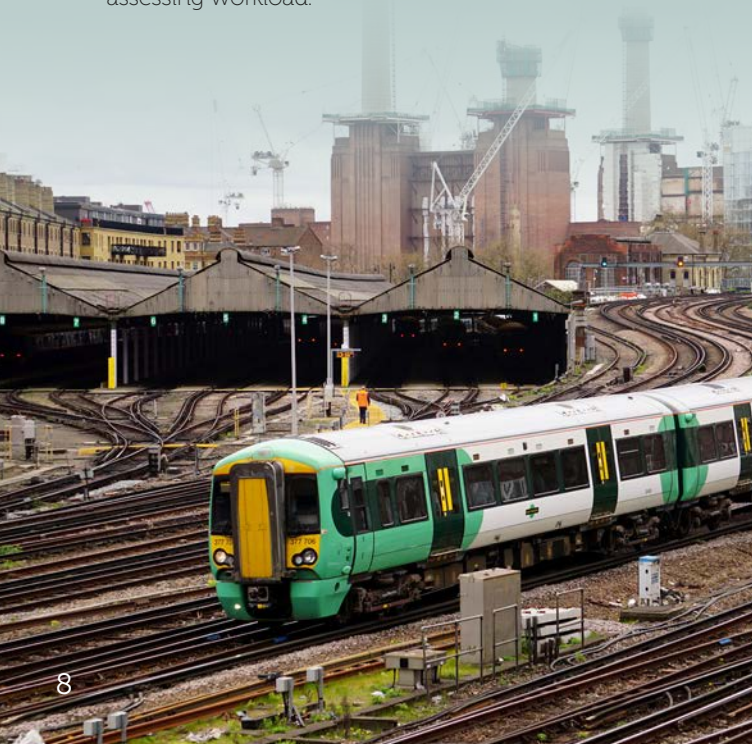
Garden towns are a relatively new concept, spearheaded by central government. They prioritise well-planned and well-designed communities, able to stand the test of time and exemplify housing best practice.

The Government defines a garden town as a development of 10,000 or more homes. Meanwhile, the slightly more modest garden village contains 1,500 to 10,000 households.

"Locally led garden towns have enormous potential to deliver the homes that communities need," said Mr Javid. "This new funding will help support the construction of more than 155,000 homes in nine places across the country. New communities not only deliver homes, but also bring new jobs and facilities and a big boost to local economies."

This week's funding will support locally led garden towns in Bicester, Didcot, Basingstoke, Otterpool Park in Kent, Aylesbury, Taunton, Harlow-Gilston, North Northamptonshire and North Essex.

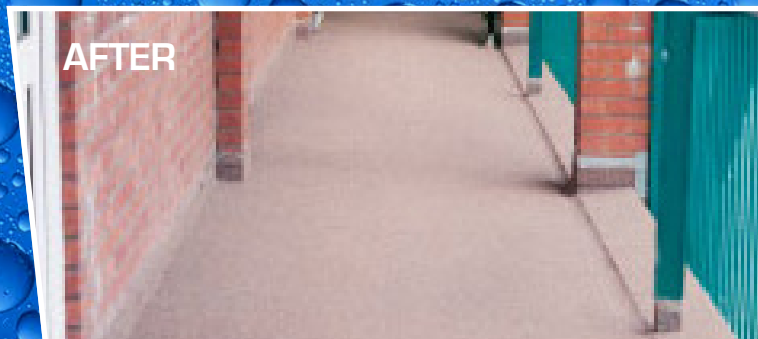
To date, central government is supporting the locally led development of ten garden towns and cities, in addition to 14 garden villages, which have the combined potential to deliver 220,000 new homes across the country.



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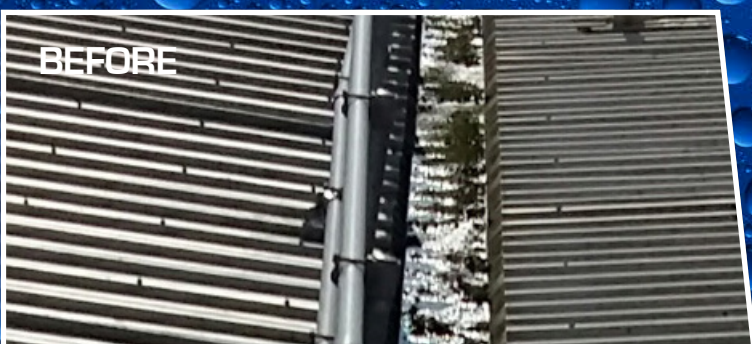
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FMB brands Migration Watch EU worker analysis “wrong”

The Federation of Master Builders (FMB) has said that it is “wrong” for Migration Watch UK to suggest that there is little need for EU workers post-Brexit.

The controversial sentiments underpinned a recent article authored by Migration Watch – an independent, non-political think tank chaired by the former Ambassador to Saudi Arabia, Lord Green of Deddington.

According to Migration Watch, concerns over access to EU workers post-Brexit are unfounded. Rather, the focus should be on engaging with our untapped workforce – the 1.5 million Britons currently unemployed. What’s more, Lord Green claimed that EU workers had long been exploited as a cheap and reliable source of labour – the product of cynical business practice.

“The truth is that some employers have been doing very nicely out of workers who are prepared to work hard while putting up with low pay, poor conditions and little flexibility in their hours,” wrote Lord Green.

“Worse, some employers are being subsidised by the taxpayer to employ migrants from the EU.”

Brexit has the potential to galvanise British industry, however. With fewer EU workers to rely on, business owners will be forced to make decisions that they

would never entertain otherwise.

“One solution for employers would be to invest so as to improve productivity, which has been virtually flat in the UK for nearly ten years,” continued Lord Green. “However, they are hardly likely to take the risks involved in investing in technology when they have a virtually unlimited supply of cheap and flexible labour.”

Like the many millions who voted in favour of it, Migration Watch sees Brexit as an opportunity to place British interests at the head of the table: “Low paid EU workers may be good for profits but the rest of society has to cope with the consequences for housing, public services and the cost of in-work benefits. Brexit is an opportunity to put a stop to this.” It’s all a bit insular, however, and the concerns of the construction sector are not without merit. Has Lord Green failed to recognise the full extent of the skills shortage? For the Federation of Master Builders, the answer is a resounding yes.

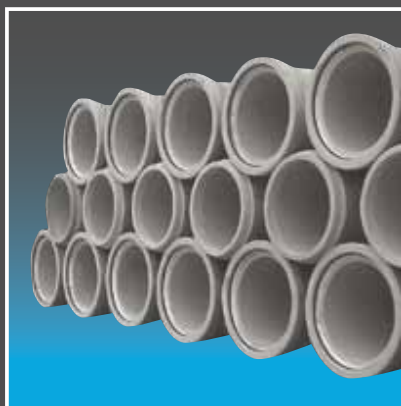
“Migration Watch’s conclusion that there is no real need for EU workers flies in the face of the experience of key sectors like construction,” commented Brian Berry, Chief Executive of the FMB. “The sector is undoubtedly facing serious skills shortages, and in certain

areas of the country ongoing inflows of EU workers have served to mitigate this and help the industry and economy continue to grow. We accept that free movement will end in the years following the UK’s exit from the EU, but the Government needs to be realistic and flexible and take account of the likely ongoing need for key sectors like construction.”

FMB statistics seem to substantiate those concerns. Over a third of SME housebuilders employ EU workers, with that figure rising to 70% in London and the South East. Of those employers, a third believe that the end of free movement will hinder their ability to grow.

“If the Government gets this wrong, there is a real possibility that skills shortages will further intensify, threatening the delivery of new housing with a knock-on effect on growth across the wider economy,” concluded Mr Berry.

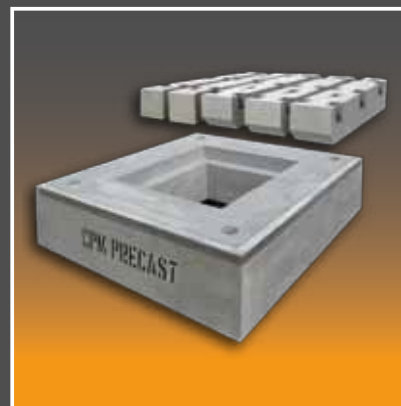
It’s a delicate balance. The UK construction sector is in desperate need of skilled workers, and the EU has made valuable contributions in the past. But Brexit could give business owners the impetus they need to engage with our own reserve of workers. Predictably, only time will tell.



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£300M Preston Barracks transformation takes shape in Brighton



A transformation is taking shape in Brighton, as plans for the regeneration of Preston Barracks – together with the University of Brighton's Moulsecomb Campus – are given the green light.

The £300M public private partnership project comes courtesy of the University of Brighton and U+I, a specialist regeneration and property developer. Around 1,500 new jobs will be created alongside hundreds of new homes, bolstering the Brighton economy by a further £500M over the next ten years.

For two decades or more Preston Barracks has lain derelict. Now, the site will reassert itself as a magnet for enterprise and international investment.

The proposals – authored by HASSELL, Studio Egret West, TP Bennett and Stride Treglown – include 369 new homes with affordable housing provision, while 1,338 purpose-built student bedrooms will be built to address a shortfall in the city. U+I will also provide a 50,000sq ft hub to foster start-up businesses and entrepreneurs.

"The Preston Barracks project is one of the largest and most ambitious regeneration projects to have been brought forward in Brighton for a number of years," said Richard Upton, Deputy Chief Executive of U+I. "We will deliver world-class, imaginative urban design, leaving a lasting legacy that befits such an inspirational city."

Professor Debra Humphris, Vice Chancellor of the University of Brighton, added: "We are delighted that our plans have been approved. This partnership aims to deliver one of the most ambitious and transformational projects for the city in a neighbourhood where meaningful regeneration is long overdue.

"The scheme has the potential to have a huge positive impact both for the local community and wider city, as we look to deliver on our aspiration to create an inspiring place where people can live, work and learn together."

It is thought work will begin in November with overall completion scheduled for August 2021.

Historic Guinness site to be redeveloped

The historic St James's Gate in Dublin, home to the world-famous Guinness Brewery, is to be partly redeveloped to provide a range of housing, offices, shops and hotels. Diaego, owner of the Guinness brand, has revealed preliminary redevelopment plans within the 20 hectare site, designed to create a vibrant urban quarter.

The plans look to develop five hectares within the Guinness site, to be renamed St James's Gate Quarter. Development will include the first Guinness vat house, built in 1798, and Brewery Room No2, which was the biggest brewhouse in the world during the early 20th century.

Oliver Loomes, country director for Diaego Ireland, said: "Our vision will be that this is a dynamic urban quarter with a combination of residential, commercial, leisure – which is a viable, sustainable development.

"Social housing will, of course, be a part of that because any large development has to have it.

"We have got a long-term relationship with the Iveagh trust and our ambition is that we would work with the trust to have it as our social housing partner in this project."

Initial plans see some 63,000sq m of office space, 5,000sq m of retail units and 22,000sq m of hotel and leisure accommodation making up the commercial element, with 48,000sq m set aside for residential development. Diaego will retain ownership of the historic structures within the site, including the famous brewery gate and founder Arthur Guinness's former residence.

Loomes continued: "This unique relationship between past and future makes St James's Gate an extraordinary place. It is rooted in history and its future is one of innovation and creating experiences. We are committed to a long-term sustainable future at St James's Gate and are delighted to be opening streets, creating spaces, and generating opportunity.

"We are transforming our centuries-old vat houses, brew houses and cooperages into incredible spaces that will house and inspire a new generation of entrepreneurs, residents and visitors, dreamers and doers." A tendering process is now under way, with Deloitte Real Estate looking to secure a development partner for the project.



Graham appointed to £73M Stockport town centre access upgrade

Highway connectivity is set to improve in Stockport, with civil engineering specialist Graham appointed to a £13M transport upgrade contract.

Stockport Council has contracted Graham – via the Highways England CDF Lot 2 Framework – to design and construct the brand new Travis Brow link road. This much-needed infrastructure, which links the A6 to the M60 in Stockport, forms part of a £73M Town Centre Access Plan to improve connectivity and ease congestion across the town centre. That plan was masterminded by Stockport Council in partnership with Transport for Greater Manchester, with Growth Deal funding secured through the Greater Manchester Combined Authority. The Travis Brow link comprises a

new classified road with retaining walls, which channel the highway under an iconic Network Rail asset, the Stockport Viaduct – a Grade II listed structure dating back to the 1840s.

From a civil engineering perspective, the project presents a significant challenge. At various points, the link road will interface with Stockport Viaduct, a disused railway tunnel and the A6 – part of the Key Route Network in Greater Manchester. Graham remains unfazed however. “We are delighted that Graham is the contractor of choice to complete the works for the new Travis Brow Link Road,” commented Leo Martin, Executive Director at Graham. “This link road development forms a key part of an extensive access plan for Stockport town centre, with high-

levels of expertise required in order to complete the work – especially when you take into consideration the Grade II listed viaduct and tunnel.” Councillor Kate Butler, Cabinet Member for Economy and Regeneration at Stockport Council, added: “The new link road is vital to our vision of continuing to improve transport across Stockport town centre. It will provide motorists with a new route into and around Stockport, reducing journey times and improving connectivity for thousands of motorists a year.” Graham will now work alongside Mott MacDonald – together with highway specialist George Cox & Sons – to deliver the new link road, with work anticipated to end in August 2018.



GOING IT ALONE

There are times when, for one reason or another, a party to an adjudication decides that it is not going to participate in the proceedings or co-operate with the adjudicator. This has happened to me on at least four occasions I can recall and, coincidentally, I have just issued an adjudication decision where one of the parties in a second adjudication between the same parties concerning a second dispute between them on the same contract, elected, as it did in the first adjudication, not to participate. I can tell you it is quite a strange feeling being ignored by a party in a dispute that you are presiding over. So, when you are faced with such a situation, how should you proceed and is there a risk that your decision might not be enforced?

In answer to the first question, the first thing you must do is to make sure that you make every effort to contact the reluctant party and be careful to record your attempts by email and letter. I would even resort to getting your PA to telephone the reluctant party to make sure they have received your communications. Again, record both your efforts and your PA's efforts in writing.

OK, so let's assume that it has been made crystal clear to you that a party is aware of your appointment and it has, for whatever reason, decided to ignore your directions, how should you approach the adjudication? Is it appropriate to proceed on an "ex-parte" basis? How much investigation into the referral should you make? Should you have a meeting? What should you say in your Decision? All very important questions, the answers to which very much depend on the quality of the Notice of Adjudication and the Referral put before you by the claimant.

Put simply, if the Notice and Referral are well drafted, crystal clear and evidenced then you are probably safe to proceed on a "documents only" basis and, if you are convinced, grant the redress requested by the Referring Party in its Notice, taking care to confirm your attempts to engage the reluctant party and your approach to deciding the dispute based on the claimant's submissions.

The problems arise when there are issues with the quality of the Notice and/or the Referral and you consider that questions need to be asked of the claimant in order to explain a point or provide missing evidence in order to substantiate an unsupported assertion. How far should you go with this approach?

Remember that you have been appointed to make a decision. You are expected to fulfil your duties without incurring unnecessary expense. You must decide what the relevant facts and law are and if there is conflicting evidence decide on

the balance of probabilities which position is more convincing and why? Finally, you must produce a written decision explaining your approach, what matters you have considered and how you have reached your Decision. In reality, these functions should be capable of being discharged without the need for a meeting with only one party. Keep in mind that meeting with one party would incur added cost and could provide problems for you at a later date if your reluctant party then decides to enter the stage and suggests that you might have heard something at the meeting, at which it was not present, which it has not heard or been given the opportunity to comment upon. These are the sorts of problem that might become an issue at a future enforcement hearing and why I have, thus far, never met one party alone during the life of an adjudication.

Speaking of enforcement, will the courts enforce a decision where a Respondent has refused to participate? The answer is yes, demonstrated very clearly in two published decisions of the Technology and Construction Court TCC in cases between Mr Emile Lobo -and- Mr Robert Corich ([HT-2-16-000359] and [HT-2017-000076]) Mr Lobo had obtained an Adjudicator's decision in a case against Mr Corich. Mr Corich hadn't taken part in the proceedings and the adjudicator had decided that a sum of £630,022.66 was due from Mr Corich to Mr Lobo. The decision was enforced against Mr Corich and Mr Lobo had obtained a charging order over a substantial property owned by Mr Corich. Mr Corich had then commenced his own proceedings to have the adjudicator's decision set aside, the enforcement judgement set aside and the charging order on his property removed. It is apparent that much of Mr Corich's case was based on the premise that he was unaware of the original adjudication. The adjudicator had proceeded on an ex-parte basis, which Mr Corich claimed was in breach of the rules of natural justice and

as a consequence Mr Lobo had unfairly received a decision in his favour. All very, very serious stuff.

The judgement handed down by Mr Justice Stuart-Smith makes clear that the court took the view that Mr Corich had ignored the adjudication proceedings and had in reality elected not to take part. The consequences for Mr Corich do not make easy reading as it was decided that there could be no challenge to either the adjudicator's decision, the subsequent enforcement judgement or the charging order granted on Mr Corich's property. If this case doesn't serve as a stark warning to parties not to ignore an adjudication and the Adjudicator's directions, I don't know what will. As for my fellow adjudicators, out there in the construction jungle, it is OK to proceed on an "ex-parte basis" if you have to, but be careful!

Peter Vinden is a practising Arbitrator, Adjudicator, Mediator and Expert. He is Managing Director of The Vinden Partnership and can be contacted by email at pvinde@vinden.co.uk. For similar articles please visit www.vinden.co.uk.





The Mayor of London's draft London Housing Strategy



Claire Fallows, Partner
at Charles Russell
Speechlys

In September, the Mayor published his draft London Housing Strategy for consultation until 7th December 2017. We spoke to Claire Fallows, Partner at Charles Russell Speechlys, about Sadiq Khan's strategy for London and her opinion on the effectiveness of such a plan.

The draft is wide-ranging and there is much to be welcomed, she said, including, as a starting point, the Mayor's acceptance of the extent of the housing crisis in terms of the quantity of new homes needed and issues around affordability. However, at this stage, it offers little radical by way of solution. Claire highlighted a number of issues with the plan that will need to

be addressed before it is pushed ahead.

Planning policy support: The draft outlines a need for the Mayor to work with the London Boroughs and Government to ensure that planning policies support additional housing land supply, including through clear housing delivery targets for Boroughs. Housing-led regeneration of London's town centres and high streets and maximising opportunities arising from new infrastructure make for sensible planning. On the other hand, the Mayor's continued support for protection of the Green Belt will disappoint those who consider a wholesale review of Green Belt policies and boundaries to be in the best

interest of the capital.

Higher density: A shift to higher density development via new design-led density policies is to be encouraged. However, planning policy alone will not deliver the increase in density required. Too often authorities accept the theory of denser development but find reasons to reject detailed proposals, failing to work with developers to produce viable solutions. The Mayor will need to be ready to intervene directly and to use his powers to take over decision-making where appropriate, to drive a more positive attitude towards higher density schemes.

Co-location of uses: To make more efficient use of land, the draft provides support for greater co-location of uses within buildings, sites and neighbourhoods. This will present opportunities for those prepared to look at and invest in new models of combining commercial or industrial and residential uses.

The Mayor also wishes to explore new fiscal incentives to encourage landowners to release inefficiently used land for redevelopment, such as surface car parks and single storey retail stores. The idea sounds promising. Yet incentivising landowners could well conflict with the desire to increase affordable housing delivery, the cost of which, when added to community infrastructure levy payments, drives down returns to landowners.

Small sites: Recognition of the need to help small builders is positive and follows recent Government support for smaller developers in the White Paper. In particular, a planning presumption in favour of appropriate residential development on small sites, alongside specific Borough-level targets for such sites, could be helpful and is likely to increase the number of permissions

granted. Boroughs may well be concerned about the impact on their ever-decreasing stock of industrial and commercial land and their rightful desire to maintain an appropriate balance of uses across their area.

Direct intervention: The Mayor himself promises to refocus City Hall resources towards projects releasing more land for housing and, where necessary, to adopt a more hands-on approach by intervening directly to co-ordinate key projects and assemble land, including through compulsory purchase. He continues to look to public sector landowners to lead by example. Direct public investment in site assembly, infrastructure, site clearance and remediation is to be welcomed and could act as a catalyst for complex brownfield redevelopments stalled due to the burden of upfront costs – but only provided any repayment terms imposed are not unduly onerous. **Investment:** The draft highlights the need to target investment to accelerate and de-risk housing and regeneration sites, including through supporting access to finance for home builders and lobbying for a sustainable successor to Help to Buy when it comes to an end in 2021. The role of Help to Buy in London's low to mid value housing market should not be underestimated and the Mayor's support for a replacement scheme will be welcomed by residential developers.

Construction skills: With current and future concerns about a construction skills shortage, the Mayor is eager to encourage more Londoners to take up a career in construction. Initiatives include a Construction Academy for London and a London Skills Strategy. With Brexit ahead, the draft Strategy highlights the urgent case for certainty over the rights of EU nationals to

continue to work in London and the importance to the Mayor of the UK remaining in the Single Market.

Transport: It is no surprise that the draft Strategy acknowledges that a step change in housing delivery requires a step change in investment in new and improved public transport. The opportunities that arise for the unlocking of new housing sites by schemes such as Crossrail are obvious. The draft refers to consideration of mechanisms for raising investment including by forms of land value capture. The future of the Community Infrastructure Levy remains uncertain, but with public spending stretched, land value capture looks set to remain a hot topic in the future.

Build to rent: The Mayor remains keen to support build to rent, including through planning guidance and policy. The recognition of the distinct economics of this sector, including its reliance on a revenue stream funded by rents rather than upfront return on sales, is to be acknowledged by the embodying of guidance from August's Affordable Housing and Viability Supplementary Planning Guidance within the draft London Plan. Whilst it is too early to judge the effect of the guidance, those looking to invest in the sector will take some comfort from the Mayor's continued support. All in all, the draft Strategy includes much by way of positive intent and there is a lot to support. It will be interesting to see how Boroughs respond. The Mayor's willingness to intervene in the planning system to deliver new housing and the balance he strikes between achieving delivery of more houses overall, as against more affordable houses, will remain under scrutiny.







Flagship Midlands development models itself on BIM application

Building Information Modelling (BIM) is becoming an influential process within the construction industry. This practice, which is now fundamental in the design, creation and development of public sector buildings, is increasingly being applied to schemes across the UK. Within the East Midlands, the construction of a new £30M science and business hub benefited from the use of BIM, which after three years of planning and development opened its doors earlier this year and now supports hundreds of specialist jobs in Nottingham.

BIM was instrumental in the design and delivery of the Discovery Building, which was built next to the city's existing BioCity complex as part of the UK's largest bioscience incubation centre. Matt Greenhalgh, lead architect on the project, said: "CPMG Architects was appointed to design the contemporary five-storey facility, which features state-of-the-art laboratories, open plan offices, and meeting rooms on the upper levels as well as a lecture theatre and office and conference spaces on the ground

floor. It is an impressive 6,830sq m with three of its five floors occupied by the project's main tenant, Sygnature Discovery – an independent provider of integrated drug discovery resource and expertise."

CPMG is an architectural practice with offices in Nottingham, London and Hangzhou in China, with extensive experience in both the public and private sectors.

Instrumental to the successful delivery of this complex and high-profile project was the adoption of BIM Level 2 to bring the scheme to fruition.

CPMG acted as the focal point between the contractor and design teams to ensure industry best practices in BIM were adopted across the project for the successful co-ordination and delivery of design and construction information.

Informing design development

A 3D modelling environment was used to quickly accommodate operator and tenant design changes post-tender without impacting on the design or construction programmes. For example, shortly before

construction began, the quantity of fume cupboards required increased from 80 to 120. This meant a full redesign of the mechanical and electrical services in lab areas and doubling the size of the fume extract risers. Traditionally this would be extremely difficult to accommodate at such a stage in the project – however, as BIM requires an accurate 3D representation of all building elements, the design team confidently redesigned the ventilation and extraction systems to accommodate the increased requirements without compromising the internal quality of lab spaces.

Working collaboratively with the structural engineers, CPMG rationalised the central service and circulation core enabling the service risers to be doubled in size whilst improving the net to gross ratio of the laboratory and office accommodation.

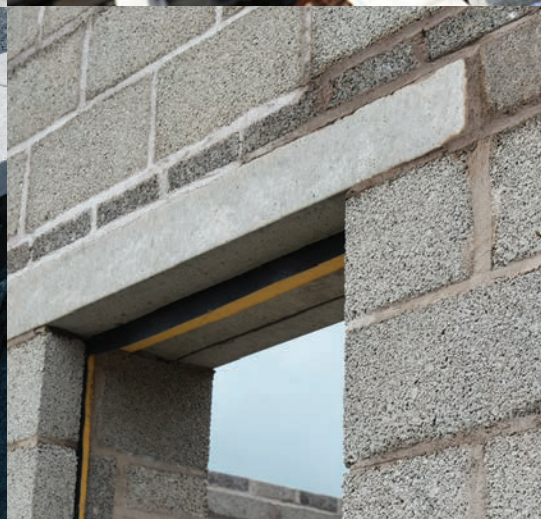
Incorporating unique design elements

CPMG designed the building to make it simple yet elegant. It consists of a stone ground floor podium which accommodates the irregular shape of the site, and an attractive four-storey



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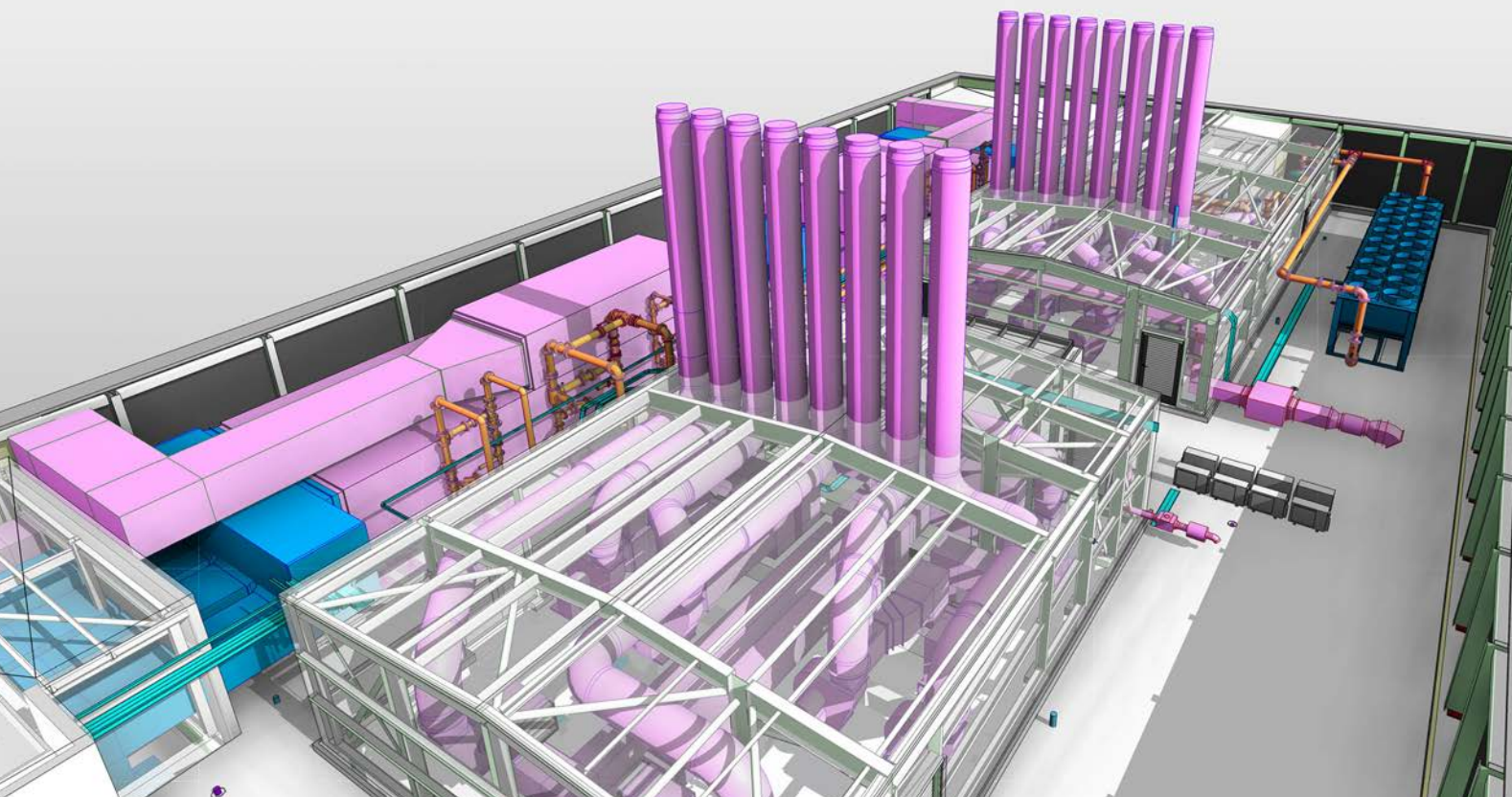
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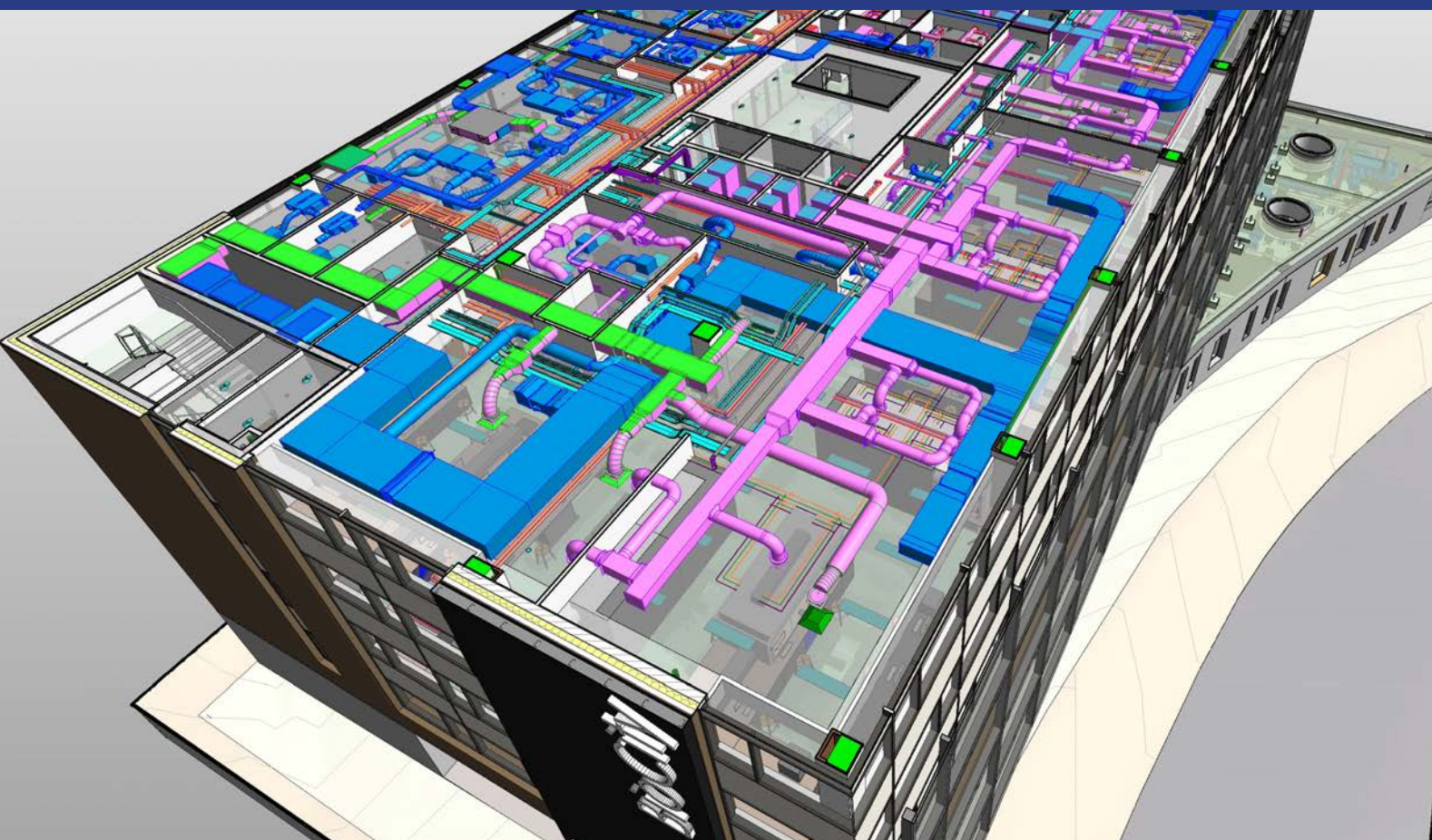
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A stand-out feature of the design is the solar screen designed by artist and sculptor Wolfgang Buttress – constructed from more than 1,000 stainless steel cables, which wrap around the southern and western façades of the building, providing it with solar shading and a distinct identity.



bronze aluminium structure above. Offices and conference facilities are on the ground floor level and upper storeys are dedicated to laboratory and associated office space.

Matt continued: "A stand-out feature of the design is the solar screen designed by artist and sculptor Wolfgang Buttress – constructed from more than 1,000 stainless steel cables, which wrap around the southern and western façades of the building, providing it with solar shading and a distinct identity."

Streamlining the construction process

Navisworks, the preferred clash detection software for the project, was used which resulted in a streamlined, efficient and well-managed construction process. Successful co-ordination of architectural, structural and service elements resulted in numerous time savings, most notably the construction of the concrete frame three weeks ahead of programme. Matt commented: "The use of BIM by mechanical and electrical contractors and supply chain partners enabled the manufacture of many components to be carried out off-site, whilst work was simultaneously taking place on-site. This provided many benefits, including improved quality control of all modules constructed, reduced waste and a more efficient installation process. Off-site manufacturing resulted in a two-week saving on the mechanical and electrical first fix."

Integrating the solar screen was particularly challenging and required significant changes to the structural frame, building envelope and cladding setting out. BIM simplified these tasks and provided a level of design accuracy that was essential to the successful installation of this key feature.

Delivering a sustainable building

Sustainability was an important consideration when constructing the Discovery Building, which was designed to achieve BREEAM Excellent. The facility's power and heating are provided by the local district heating system. The solar screen also controls thermal gains and solar glare.

Matt said: "Particular attention was paid to the building envelope where a fabric-first approach was taken. This not only increased thermal performance, but also significantly reduced air permeability to lower the building's heating and cooling loads."

Providing benefits and improvements to the wider community

This new building has put Nottingham on the map for leading bioscience and biochemistry career opportunities. More than 300 jobs have been created, boosting the city and wider Midlands economy.

The wider community and passing pedestrians are also benefiting from much-needed external amenity space which has established greater links to the east side of the city centre – an area which is expected to improve from further regeneration.

An award-winning project

The Discovery Building has been hailed as a flagship project as part of the Midlands Engine initiative, and three quarters of the building is already occupied.

The use of BIM has been a monumental success, which was recently recognised by industry experts at this year's prestigious RICS BIM4SME Awards, where CPMG scooped the prize for subcontractor engagement. It also won the Judges' Special Award at the 2017 East Midlands Property Dinner. Furthermore, CPMG has been

recognised by BSI (British Standards Institution) for its capability in the use of BIM to PAS 1192-2:2013.

The firm, which employs a BIM manager and a large team of expert users, joins just a small group of other British architects to hold this prestigious accolade.

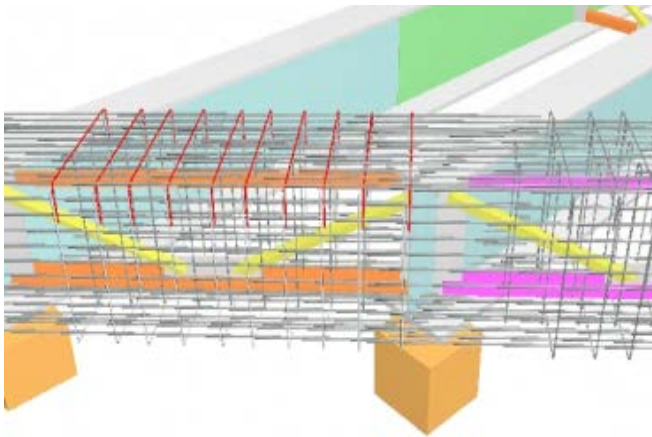
Nick Gregory, director for CPMG Architects, added: "Our team has been using BIM technology for a number of years. This is just one example of several varied Level 2 projects we have delivered whilst working with clients, design teams, contractors and supply chains."

"We're committed to growing our BIM expertise and capability in-house to comply with managing information for the delivery phase of construction projects. Recognition of our capability is a testament to the hard work of the team to continually improve the way we support teams to deliver building projects."

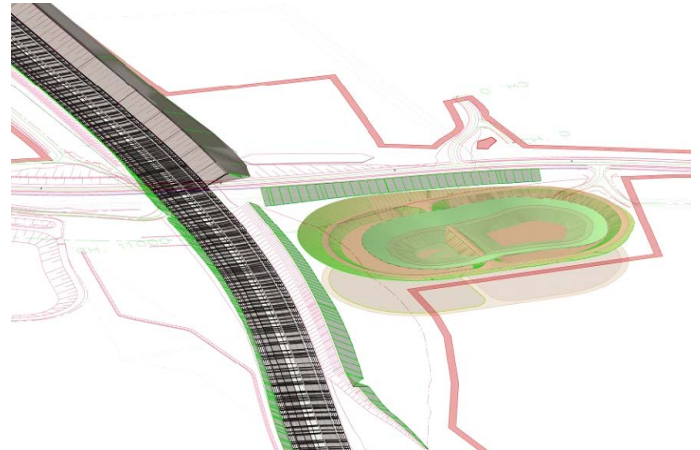
Partners involved with the Discovery Building project

The Discovery Building was delivered by a number of local partners under the Scape Major Works Framework. The site was bought, cleared and decontaminated by Nottingham City Council and the project funded by the city council and the D2N2 Local Enterprise Partnership. Other partners involved were contractor Willmott Dixon, M+E contractor Briggs & Forrester, consulting engineers Morgan Tucker, electrical engineers Couch Perry Wilkes, construction consultancy Gleeds, and multi-disciplinary practitioner Pick Everard.





Reinforcement clash detection



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These models will show all 3d elements, such as pavement layers and street furniture, allowing quantities to be extracted directly from the model and 4d schedule simulation to be carried out. The models created will capture the design intent and will facilitate clash detection.

The models will also feature elements which are capable of being attributed with information for asset management purposes, which is a key requirement of BIM level 3.

Are you still designing the same way as you did in the eighties ?



Are you still using a computer like this to do your highway design ?

No – of course not – it's antiquated and not up to the job.

So why do your highway designers still want to design using software which was created around the same time ?

Why do your designers want to write input files which were designed to run on computers like the one shown ?

In the early eighties, the industry standard software programme for highway design was called MOSS. MOSS was written using Fortran and BIM wasn't even a dream.

To use MOSS you had to write an input file, run it and then come back tomorrow to see if it had worked. Unfortunately, many highway designers have held on to this way of working and won't move on.

One of the problems with 3d models created using this way of working is that it isn't suitable for BIM and isn't BIM compliant in any way.

One of the basic ideas of BIM is that you can attribute data to the elements you design, so that the information can be harvested at a later date.

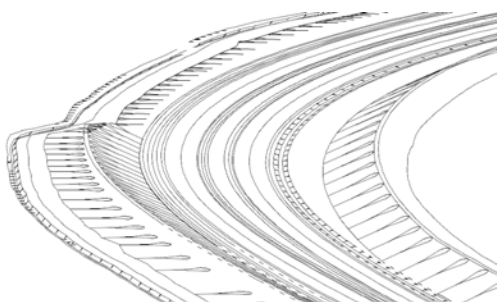
This is impossible with a 3d model created using MX (formerly MOSS).

Bentley Systems, who are the current owners of MX, realised this and have completely rewritten the software using modern computer language and called the new package Openroads.

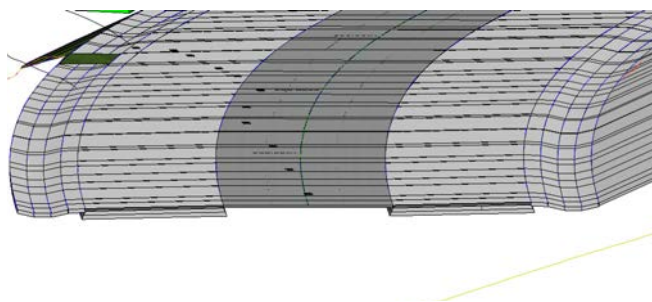
Models created using the Openroads technology allows elements to be attributed with data which can be harvested at a later date.

Openroads also remembers your design information and retains on the drawing for design checking purposes. The latest version of the software is called the Openroads Designer Connect Edition and does not include the ability to create input files.

Bentley have eventually removed the link to the past and produced a modern software package which is fit for purpose.



A 3d string model created using input files



A 3d model created using Openroads

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The future of construction: Hand-built by robots?

Technological convergence and disruption is driving innovation, and raising new challenges, for industries across the economy. We speak to Suzanne Gill and Helen Garthwaite, partners at Wedlake Bell and co-founders of Tomorrow's City, Today's Challenge about the ever developing technological landscape.

According to the World Economic Forum, however, construction and engineering have to date been hesitant to 'fully embrace the latest technological opportunities'. This has, in many cases, led to productivity stagnation, with McKinsey estimating that if global construction sector productivity achieved its potential it would boost the sector by \$1.6Trn – adding two per cent to the global economy.

Technologies that previously existed only in the realms of science fiction – drones, augmented reality, autonomous equipment, 3D printing, to name but a few – are now mainstream and are beginning to be adopted by construction operators to enhance output and productivity. Perhaps the biggest success story to date in this setting is Building Information Modelling (BIM), with the UK government and Digital Built Britain putting BIM at the forefront of achieving the goals set out in the Construction 2025 strategy: including 33% reduction in the upfront and lifetime costs of built assets, as well as lowering built environment emissions by 50%.

Alongside this, technology is also disrupting the construction method itself. Offsite and modular techniques are promoted as an enabler with construction able to learn the production-line lessons from the manufacturing space.

Many in the industry argue that this change is long overdue and indeed essential. Other industries such as automotive have long been at the forefront of production-line manufacturing, while, looking further afield, the maritime and aerospace industries have demonstrated how far remote and robotic construction methods can be pushed.

Meanwhile, a number of international businesses are turning to blockchain technology to track and manage payments and commercial contracts. In an industry with so many moving parts, this technology brings with it the opportunity to increase the efficiency of developments whilst also near eliminating costs associated with procurement fraud and contractual disputes. The creation of 'smart contracts' allows information to be shared securely at speed, by way of a continuously reconciled database, ensuring all parties in the blockchain are informed, and providing control to what can be incredibly complex payment structures. Just this year, the Republic of Georgia committed to use the bitcoin blockchain network to authorise property-related government transactions. Other countries are set to follow suit, seeing the potential to revolutionise supply chain management in the property industry and bring together multiple

contractors and disparate suppliers across geographies and sectors. With the pace of technological change rapidly increasing it is little wonder, therefore, that some are predicting worker-free building sites by 2050. Where once we saw hard hats and high vis jackets, there could well be autonomous bulldozers coordinated by drones circling overhead with 3D printers churning out new designs at a pace beyond that of human skill. However, there remain real challenges to make today's fiction tomorrow's reality. Not least the threat of cyber attacks, that come with increased digitalisation and the fast-paced adoption of emerging technologies. This year saw 200,000 organisations in 150 countries hit by the 'WannaCry' ransomware, with the NHS in the UK being particularly impacted, partly due to its outdated systems and under-investment in cyber security. Real estate business and buildings themselves are similarly under threat, particularly as smart becomes normative.

In an industry that is traditionally risk-averse, it is understandable there has been hesitancy to fully embrace the opportunities new technologies bring. Indeed, blockchain is still classified as an 'emerging technology' and take-up has been slow, perhaps partly due to the negative connotations associated with early crypto currencies in addition to privacy concerns around sharing data. Furthermore, such technology requires significant changes to be made to existing systems as well as a complete cultural shift to a decentralised network, requiring the opt-in of all parties – a potential logistical nightmare in itself. Technology solutions are often trumpeted as improving energy efficiency, sustainability and building lifespan, but in an industry that accounts for three million jobs, equal to 10% of total UK employment, the fear of robots taking over and 'stealing' construction jobs is a startling one. However, industry age demographics and the likely impact

of Brexit points to a shrinking workforce, providing a compelling case to embrace change. In a survey recently undertaken by the Institution of Civil Engineers (ICE), nearly 80% of respondents believe that AI will have a positive impact on the infrastructure sector, leading to substantial improvements to design and delivery, in turn boosting productivity. Indeed, the future is closer than we think with September seeing construction begin on Europe's first 3D-printed building. Likewise, the precast 'Tech Crete' method used at Victoria Gate, Leeds, has taken BIM to whole new levels of design intricacy, though as stated "the machine to replace human creativity has not yet been invented". Legal, financial and insurance organisations have a role to play in enabling modernisation, and traditional procurement and contract structures, as well as debt financing models, will need reviewing. In particular, any increase in off-site construction (for instance) will require the consequential realignment of construction and new approaches to development risk. The support of professional bodies will also be key to direct the refocus of design into early stage manufacturing and to recognise the requirements of an off-site modular approach in the tender process, if delivery cost and productivity benefits are to be maximised.

The Farmer Review has promoted the consideration of the opportunities and challenges for the construction industry in the digital age with the headline call to the industry to "modernise or die". The pace of technological innovation is rapidly increasing and as a relative latecomer to the digital revolution, the construction and development industry requires proactivity to ensure procedures and policies are in place from the outset. Today's challenge is not only to keep up but also to think ahead and future-proof the industry for tomorrow's city.



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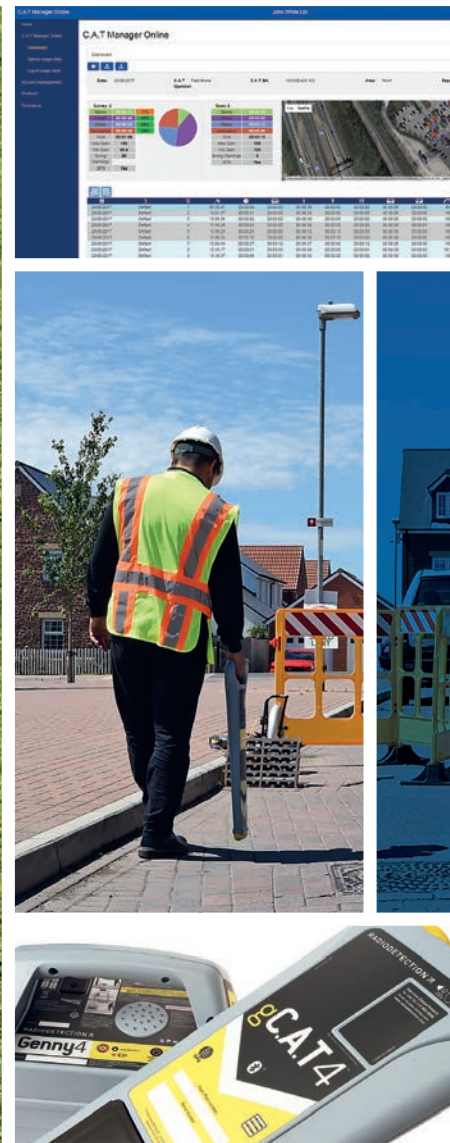
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Improving worker safety with physiological monitoring



Construction workers accept that certain risks to health and safety are an inherent part of their job and/or working environments. While health and safety standards have certainly improved, mitigation of all risks and dangers within the job cannot be comprehensive. Yet, despite new health and safety fines being introduced in February 2016, the value of fines collected by the Health and Safety Executive (HSE) in the last year has dramatically increased to £12.96m, up 83% from £7.09m for the same period the year before (according to a recent report by law firm, Clyde & Co). And this is on top of the already high insurance premiums that construction companies have to pay.

Moreover, HSE reported 27 construction worker deaths at work last year, with the majority of those attributed to falls from a height or vehicle accidents. The three biggest safety hazards on construction sites are widely acknowledged to be excavations, working at height and movement of vehicles and plant machinery. Falls and tumbles account for a significant number of incidents each year, and if a lone worker falls, it may go undetected for a longer period of time. A recent high-profile case at EDF's Hinkley Power Plant saw a worker fall and crack vertebrae, resulting in the Office for Nuclear Regulation investigation citing 'gaps in compliance of legal requirements'; EDF was served an improvement notice. Other risks to construction workers' health may include heat stroke or cardiac strain,

resulting from confined, overly hot or fume-filled environments. Beyond these immediate symptoms, noise induced hearing loss following regular exposure to excessive noise from machinery or plant equipment is becoming a commonplace concern for employees and their employers.

With so many factors to take into consideration, it makes for an incredibly complex and potentially costly problem for health, safety, environment and quality managers to solve. Clearly more needs to be done to prioritise health and safety, and elevating the discussion to board level is the first step to engender change and improve upon current solutions. Fostering and promoting a culture of safety from the top down is important to reduce risk, and for many construction organisations it's

New physiological monitoring innovations are undoubtedly a large part of the answer. Wearables like smartwatches and health and activity trackers have gained huge momentum in the consumer world, and now industry is keen to understand what benefits wearables could offer them too.



embedded software and can be sent wirelessly to a smart device, such as a ruggedised tablet, a smartwatch or via a communications device, or is simply stored on the device for download later if appropriate. Perhaps more importantly, immediate alerts can be raised by the earpiece to enable timely intervention to significantly reduce the risk of injury or, for example, other physiological stresses, or from falling.

The transmission of personal data may be a concern for some construction organisations, especially as they consider the new General Data Protection Regulation (GDPR) coming into play next year. Data communication strategies are implemented to ensure that only data that raises an alert is transmitted to the supervisor, enabling immediate actions to be taken, either on site or remotely.

Full data can then be sent in real time or retrospectively, if required, directly to a medical practitioner or occupational health, for example, for a quicker and more informed response to an emergency or to improve potential return to work strategies.

Forward-thinking construction companies implementing new technologies as part of a health and safety management system or risk safety strategy demonstrate they are taking worker safety and well-being seriously, and embedding it into their culture. The automated and intuitive experience of an in-ear device means minimal training is required for each construction worker, meaning adoption rates are high. Given the complexity of health and safety in the construction sector, a single in-ear device that can monitor the well-being of every individual on a site at any given moment is a significant breakthrough, and a cost-effective one at that.

Measuring multiple physiological vital signs, fall detection and noise exposure within a single device and in real time means warning signs can be identified early, enabling rapid intervention, whilst in the longer term improving the worker's overall health and well-being, and perhaps reducing the risk of injury as well as costs in fines, compensation and even insurance premiums.

By Leon Marsh, CEO at Bodytrak

also necessary to educate workers to ensure they actively participate in safety procedures and adhere to guidelines and regulations, even without supervision. Technology is increasingly becoming a realistic consideration for construction companies looking to significantly improve worker safety. Automatic auditing systems are already going some way to simplify compliance and ensure that health and safety guidelines are met. But what about workers' personal safety and well-being?

New physiological monitoring innovations are undoubtedly a large part of the answer. Wearables like smartwatches and health and activity trackers have gained huge momentum in the consumer world, and now industry is keen to understand what benefits wearables could offer them too. Such technology is already being trialled in the defence, security and public safety sectors, where small body-worn trackers are used to monitor the vital signs of soldiers and workers in real time, providing automated alerts to ill health, with the aim of preventing injury and protecting lives. Could this technology become a reality on construction sites too?

For industrial well-being, a new wave of ear-worn – rather than wrist-based – physiological tracking devices (known as 'hearables') is emerging. The ear is the only place in the body where all vital signs like core body temperature (CBT) and heart rate can be accurately and unobtrusively monitored continuously and in real time. Devices are also capable of measuring heart rate

variability, VO₂, distance and cadence. Importantly for construction workers, fall detection is possible from the same ear-worn device, meaning earlier intervention or faster treatment could minimise injury, or even save lives. For example, a worker experiencing a raised CBT could indicate they are suffering from heat stress, which can lead to dehydration, delirium or in the worst cases, hyperthermia; while abnormal heart rate readings could detect fatigue or stress, which frequently leads to severe injury, especially when operating machinery or vehicles.

Another important consideration for construction workers is reducing noise induced hearing loss (NIHL). Currently hearing protectors such as ear defenders are single-purpose, and construction workers need to remove these to communicate. In-ear devices integrate hearing protection with existing radio communication, providing a more effective barrier to noise. In-ear devices can also include noise metering capabilities, which measure the sound exposure of the wearer to determine the risk level of NIHL. At the same time, such devices can allow ambient pass-through of sound at safe levels to ensure the wearer can maintain a safe level of hearing for communication and situational awareness needs.

Bodytrak® is one of the few in-ear monitoring devices available for industrial use. From a single earpiece – which sits snugly under protective headgear – physiological factors, fall detection, fatigue levels and NIHL data is processed onboard via



Benefits of immigration to construction

As globalisation gathers pace, so immigration is an increasingly hot topic. The breaking down of national borders is largely business driven, as international companies pick and choose where to base their operations. This decision is often motivated by factors including local labour costs, legal and tax regulations, and proximity to raw materials and consumers – although these last two factors are diminishing in importance as fast transportation and e-commerce become the norm.

Free movement of labour is also beneficial to business and to some degree this has followed on from globalisation. Just as companies will often move to locations where they can employ skilled or unskilled labour at the lowest cost, so skilled and unskilled workers will head for those territories where they can earn the most money for their toil. This movement is made easier by the expansion of integrated labour markets such as the European Union.

But migrant labour is nothing new, especially within the construction

industry. Construction work could be described as a moveable feast, and most of the great construction projects worldwide have historically been built by migrant labour. The great pyramids at Giza are now believed to have been mostly constructed by skilled migrant labour, and certainly the railways, bridges and viaducts of Britain's industrial revolution were largely the work of skilled Irish navvies, though frequently suffering from appalling employment conditions.

While recognising the benefits of immigration, governments should act to protect the rights of workers both at home and from abroad. Providing appropriate training structures and opportunities will help native workers find jobs, while fair competition can be ensured by tackling exploitative employers rather than by obstructing or penalising those traveling in search of work. Enforcing a minimum wage is another step that governments can take, with unions acting as watchdogs on behalf of their members. There are advantages from the construction sector's point of view to a points-based managed migration system, where

points are awarded in line with local labour market needs. However, this must be flexible and adaptive enough to allow for sufficient movement to quickly meet changing requirements.

Construction is a naturally itinerant industry, reliant on migrant labour to meet its needs. The work moves around; as a result, so do the workers. Integrated labour markets and increased mobility have generally been beneficial to the sector. The construction industry in a country with closed borders will suffer as major projects will simply not get off the ground due to the lack of available labour. Obviously this will mean fewer jobs for native workers too. We can see then that if a level playing field is established via the processes outlined above, immigrant labour benefits the interests of native labour, rather than being detrimental to it.

Construction workers must go where the work is, and the industry relies on them doing so. As a result, immigration has kept the sector vibrant and profitable. Hopefully it will continue to do so for generations to come.

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The Optimum Offsite Solution

Steve Thompson, MD of EOS Facades – specialists in the design, manufacture and supply of a wide range of steel section solutions – shares his views on why offsite manufacture is vital to the construction sector.

Light steel framing is used in offsite construction for a wide range of building types and can be developed in the form of panelised or volumetric systems. Following several years of relatively flat growth, contractors have long been anticipating an impending rise in material costs. The most recent increase in material prices has been referred to by Associated Builders and Contractors (ABC) as, 'the calm before the storm'.

This is further exacerbated by a rise in labour costs – threatening what are already tight margins. The industry is able to counteract the rise in labour costs through innovations in construction technologies. Businesses that have not yet recognised the benefits of such innovations and have not adapted to the changing environments, could potentially be forced out of mainstream construction activities. Technical change is without doubt taking place but apparently at a slower pace than in other sectors of the economy.

Offsite construction, where buildings are manufactured in factory controlled environments, for onsite installation – provides a viable alternative. Employment is factory based and therefore permanent and a more attractive proposition for securing and maintaining a skilled workforce. Wherever a factory is based, the local economy will thrive through the provision of long-term sustainable jobs and income.

Offsite construction technologies reduce the reliance on traditional labour – mitigating the impact of skills shortages and increased wages. A study carried out by the Steel

Construction Institute (SCI) on a four-storey residential building estimates that the total amount of site labour can be reduced by as much as 75% simply through using offsite construction.

This process is also significantly less weather dependent – avoiding possible setbacks to the build schedule. Fast installation reduces labour requirements and time on site, as well as reducing health and safety risks from working at height. The factory application of coatings and bending reduces the risk of delays to follow-on trades and helps minimise the onsite construction programme, thereby making savings on labour costs. The combination of accelerated handover times combined with reducing repair and maintenance costs throughout the lifecycle of the building, are two major financial advantages to offsite construction which are particularly important for public sector health, education and social housing providers.

Another financial benefit gained from offsite construction is the improvement of the cash-flow for contractors and developers. Through the use of offsite technologies, a building schedule can be reduced, delivering a faster return on their investment. Buildings can be on-stream and operational or sold faster, crucial to retailers and commercial housing developers.

New technologies allow lower capital requirements and deliver cost and programme assurances. Management of materials is a vital element in project planning and control. As materials now represent a growing expense, minimising procurement or purchase costs plays a significant part in the

reduction of overall costs.

Our approach to design and value engineering is inclusive – working side-by-side with our clients and their designers to create a complete solution incorporating design with structural calculations. Including the supply chain in the design phase enables developers to expediently procure materials to avoid issues with lead-in periods. This allows time to substitute materials, if those originally specified are at a higher cost than anticipated or cannot be secured to meet the brief or programme. Steel offers architects greater versatility than other building solutions, particularly in terms of cost. Productivity advances have been achieved throughout the steel supply chain and such cost-saving benefits can be shared with contractors.

The manufacture of steel in factory controlled conditions enhances build programmes, eradicates the risk of onsite variability, and improves onsite health and safety – and these combined benefits provide more predictable outcomes. Contractors and developers that go down the route of procuring offsite manufactured steel solutions will reap these benefits. As an advanced high-performance offsite solution, steel is not susceptible to shrinkage, warping, cracking, rot infestation or moisture absorption. Steel is a robust, rigid and dimensionally stable material that does not suffer from movement created by moisture-related issues. In my opinion, light gauge steel is perfectly positioned to meet construction industry demands – it is future proof and future ready.

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Enterprise Contractors



Estimators



House Builders

Contractors

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Estimators

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Three ways construction can cut the skills shortages

It's not an easy time to be working within the construction industry. There's simply not enough talent in the market, projects are being put on hold and firms are being more selective about what they invest in, largely because of workforce-related issues. The cost of hiring construction professionals on a contingent basis has skyrocketed which means that many employers could even be forced out of business in the coming years. Traditional approaches to end the crisis have all but failed because of a lack of focus on actually getting more people into the industry. However, help is at hand and we've outlined our top three ways to tackle the construction skills crisis.

Promote a better image of the industry to the public

If you asked the average person what they thought of the construction industry, chances are their answer wouldn't be overly positive. We're behind the times and most would probably think of standing in a trench getting dirty and not being paid a lot. However, as we all know that's not a fair representation of the industry, not all of the time anyway. Instead of promoting that outdated view we should be focusing on the good things construction has to offer. That means talking about the potential to contribute to game-changing infrastructure or a major new skyscraper, rather than just digging trenches. We also need to think about the way potential recruits are attracted to the

industry. How many people know that the skills of an accountant and a quantity surveyor, for example, are remarkably similar? From our experience it's very few, but you can guarantee that more people would rather have the chance to be on-site, outdoors and contributing to something visible and impactful than being sat in an office every day working on a spreadsheet. The construction industry has so much more potential to attract people – we're just not talking about the right things.

Widen talent pipelines into the industry

This can only realistically be achieved by promoting a more positive image of the industry as, currently, few youngsters actively seek out a career in construction. This is a major issue – there are more workers aged over 60 than any other age group and around 400,000 professionals are set to retire within the next five years. To put it bluntly, it's highly unlikely we'll be able to find anything close to the 400,000 entry-level professionals to replace them in the current market. That means something has to change. Firms need to take the bull by the horns and start being proactive. This isn't a completely altruistic move, it's one that can make recruitment much simpler and remove some of the headaches – and costs – from hiring professionals on a short-term basis. Employers need to engage with schools, colleges and training providers and actually speak to youngsters about what a career

in construction really means. They could offer mentoring or shadowing opportunities, work experience or apprenticeships, anything that shows youngsters that construction is even an option on the table for them. Currently, schools get visits from legal firms, accountants, technology companies and almost everything else, except for construction. We're trying to change that and our One Way into Construction initiative attempts to explore the true potential that a career in the field can hold. Hopefully, more employers will start to do the same.

Improve gender diversity

This suggestion could certainly provide the biggest long- and short-term impact to the construction industry. The levels of gender diversity within the industry are incredibly low. Just one per cent of onsite roles are held by women and construction trails behind almost every other industry when it comes to gender diversity. At a time when skills shortages are rife, this is bizarre and frankly, negligent. The industry essentially rules out half of the workforce from working within it because so little is done to attract women to it outside of initiatives like #GirlsAllowed. As mentioned above, construction has one of the most outdated and unappealing external images around and this has to change if the industry is to tackle its recruitment woes and get back to profitability.

Paul Payne is managing director and founder of One Way, the construction and rail recruitment specialist.





How to make a successful career change within the construction industry

For years, the construction industry has been plagued by an acute skills shortage. The Federation of Master Builders' State of Trade Survey Q4 2016 revealed a shortage of skilled workers in carpentry and bricklaying with roles in plumbing and roofing also identified as being particularly difficult to fill.

Meanwhile, figures released by the Mayor of London earlier in the year showed that one in four construction workers in London are from the EU. This makes up an enormous 95,000 workers throughout the sector – many of whom may choose to leave the country as Brexit negotiations wage on.

This means that the capital's construction industry is set to need 13,000 new workers each year until 2021 to close this skills gap and to meet the market's demands.

And it's not just London where demand for skilled staff is high. The Queen's Speech earlier this year demonstrated an ongoing commitment to infrastructure projects across the country, with plans to continue working on the HS2 rail network and promises of more new homes to be built announced in the speech in June. Taking each of these factors into account, the construction industry offers incredibly attractive prospects at this specific moment in time. Regardless of the area of the industry you wish to work in, there are countless opportunities to

progress and grow your career at a fast pace.

Unfortunately, there has long been a broad lack of understanding about what jobs are available in the construction industry, with jobs in the sector often portrayed as being limited to manual labour roles based on a construction site.

You may have found yourself in a line of work that doesn't feel right for you, or perhaps you're simply feeling disinterested with your job after years in a role that has started to become monotonous – but are keen to stay working within the construction industry all the same.

It might be time to make a move. You can start by looking at vacancies throughout the construction industry, but with such poor education and information around what jobs are on offer this can be overwhelming, to say the least. Instead, you should start by considering where your existing soft skills and personal attributes could be put to best use. Would you be happier managing an entire team on a construction site, for example, or working alone on tasks as a plumber or a painter?

Of course, you shouldn't pursue a specific career path simply based on your ability to manage others, or your preference to work unassisted and manage your own workload.

You need to think carefully about how

each of your soft skills can work together harmoniously to support you in finding a rewarding new role. For example, you'll need strong communication skills in order to work as either a site manager or a bricklayer – however, the other soft skills you'll need to succeed in each role are widely different aside from this.

If you're finding it hard to connect each of your soft skills together, try speaking to a construction recruitment specialist to talk through all of your options at greater length. You could also use Randstad's construction career match tool to help you narrow down your potential career paths, which works by allowing users to select their top three soft skills, and then suggests job matches based on each of these. The results will also provide a comprehensive job description, experience and requirements, typical career routes and a salary guide. Once you've found a role that appeals to each of your abilities, try speaking to colleagues or reaching out to those in your wider network who have experience in that area. You can then begin building a personal career plan outlining the appropriate skills and experience you'll need to develop in order to succeed in your chosen career path.



'Big Data' will streamline fleet efficiency

Big Data puts Fleet and Travel Management on collision course to an efficient business mobility as a service future.

The worlds of fleet management and travel management are colliding at a rapid rate driven by technology and 'big data' that will underpin Business Mobility-as-a-Service (BMaaS). ICFM's 'Big Data' Masterclass analysed the changing landscape and how the unprecedented stream of information with the arrival of the 'connected car', the Internet of Things and the concept of BMaaS would help managers drive "unbelievable efficiencies" across their businesses.

Justin Whitston, chief executive of Fleetondemand, one of Europe's BMaaS leaders, told Masterclass delegates that a "paradigm shift" was taking place in fleet explaining: "Today managers are focussed on owned assets, but by using 'big data' they could look at introducing alternative modes of transport and analyse employee movements.

"The company car is hyper convenient so it is only when BMaaS is as convenient as the company car can managers make the move from one to the other. They are complementary at

the moment."

However, he told the Masterclass, that change to a total cost of mobility solution was happening at a rapid pace and by mining 'big data' for information the hyper convenience required by employees would bring the corporate costs of fleet and travel on to one platform giving managers a "single company view".

Some employees with fleet management responsibility had an "inability to measure, manage and monitor vehicles and drivers" and that, said Martin Evans, managing director of Jaama, the UK's leading fleet and asset management software company and an ICFM director, was "a recipe for disaster". However, he told delegates: "The benefit of 'big data' will enable the management of an efficient and compliant fleet in a complex environment, while satisfying the demands of stakeholders including travelling drivers."

But, said Mr Whitston, the volume of 'big data' from multiple sources - notably relating to driver behaviour and vehicle performance - available to fleet and travel managers could be daunting. Therefore, he advised managers: "Understand and define your objectives

and then look for the 'big data' required."

He advised: "It is not the amount of data that is important. It is what is done with the data that matters. Managers should be focused on small incremental pockets of mobility and using 'big data' to make a start and step into BMaaS. Implement, evaluate, refine and implement again."

Employee engagement is at the "epicentre" of business mobility - not just drivers but all employees - and Paul Hollick chairman of ICFM, which is dedicated to advancing the profession of car and light commercial fleet management through a range of externally endorsed qualifications, said: "The fleet manager ecosystem is changing. Currently it is quite messy and not particularly streamlined.

"But that is changing with telematics becoming far more key and far more reliance on a communications platform. The business model is shifting to car services because of 'big data'. The industry is moving from being asset - the vehicle - driven to be focused on employees and their movements."

Mr Hollick, who is managing director of global mileage audit and fuel expense management specialist TMC, said as



a result of a range of factors including increasing urbanisation, pollution, congestion and the impact of the changing behaviour of generation Y - those born in the 1980s and 1990s - managers had to consider "the future shape of their fleets".

Moving into what he called "the fourth industrial revolution" underpinned by the internet and the smartphone, he said: "Technology is ballooning out of control. It is evolving at an exponential rather than a linear pace and that is impacting on fleets and in particular what managers are doing with 'big data'. "Massive momentum is being built so fleet managers need to think about their operational model."

Fleet managers will "cease to exist" unless they embrace 'big data', says expert

Fleet managers will "cease to exist" unless they embrace 'big data' to make better informed decisions enabling them to become "less doing and more strategic" in their roles.

That's the view of Paul Hollick, ICFM chairman and managing director of TMC, the global mileage audit and fuel expense management specialist, who believes managing all employee journeys via a single access online platform will enable businesses to set a mobility budget for individual staff. Business could already make 'big data' impactful by, for example, overlapping in-vehicle telematics derived data with

fuel purchasing data, but by working with a wide range of suppliers, including vehicle manufacturers as well as leasing and rental companies and travel management specialists, the volume of mobility management data would accelerate.

He outlined a vision in which all journey costs - private and public transport-related as well as associated fines, road tolls, car parking and taxi fares - would be automatically collated on a per employee basis with an automatic 'payroll feed' to deduct costs from an employee's mobility budget.

That strategy, said Mr Hollick, would both "manage and steer employee behaviour" by influencing their salary and reducing the administration burden of "chasing" drivers to complete documents relating to, for example, driving licence validation checks. He pointed out: "If employees don't comply then they won't get paid."

Mr Hollick continued: "Setting a mobility budget for each employee will influence the mode of transport they take. Employees will be able to access travel options via their own portal, make bookings and keep a track of their budget. The journey to mobility on demand is occurring very quickly." Employee mobility objectives underpinned by 'big data' Companies must work with employees to understand their mobility objectives with "choice being key", Justin Whitston,

chief executive of Fleetondemand, told the Masterclass audience.

The company's Mobbileo platform, claimed to be the first MaaS technology platform dedicated to business, offered organisations the ability to assess any corporate journey, compare the available modes of transport and allow the user to find, book and pay for most suitable whether preference-based, travel-policy based or on a cost reduction basis.

He described the "four pillars" of mobility as being: fleet and whole life costs, on-demand mobility, business travel and expense and the output of 'big data' and insight.

"By bringing those together we can drive 'big data' initiatives and empowerment. 'Big data' underpins the whole world of mobility," said Mr Whitston.

The benefits of 'big data' included, he said: Increased employee engagement, smart decision-making, cost and time reduction, the introduction of new mobility services and greater corporate social responsibility.

He continued: "An essential part of recruitment is working with employees on their mobility objectives. Choice is key and they must feel empowered and trusted. The ability to converge all modes of transport - public and private - means better business journey management,"



'Big data' explosion puts corporate focus on tough new law compliance

'Big data' enables fleet managers to understand in real-time vehicle performance and driver behaviour, but the explosion in available information means employers must be vigilant in complying with tough new laws.

The General Data Protection Regulation (GDPR) comes into force on May 25, 2018 replacing the Data Protection Act and, reflecting the move to a digital age in which 'big data' is powerful, it will have a significant impact across organisations, and particularly for fleet introduction of connected cars.

Martin Evans, managing director of Jaama and an ICFM director, said: "Much can be achieved with 'big data' to enable fleet managers to make informed decisions by understanding driver behaviour and vehicle performance and utilisation.

"But the flipside of that is fleet managers being mindful of businesses holding large volumes of data, which will contain information deemed personal under GDPR."

GDPR builds on existing data protection legislation with a particular focus on digitalisation and technology. Core

to the 1998 Data Protection Act are eight data protection "principles" and GDPR reforms those and introduces new "principles" of transparency and accountability with the ability to "prove consent" a significant pillar of the new regulations.

"Fleet managers are worried about data protection. In conversations with customers it is a real concern because legislation is tightening and the potential for fines is increasing," said Mr Evans. "Responsible companies should have systems and processes in place to keep data secure.

"Understanding and embracing 'big data' is important, but it is also vital for businesses to protect themselves." Furthermore, Mr Evans warned that fleet operators could find themselves capturing so much 'big data' that a failure to act on the information obtained could prove to be counterproductive in terms of ensuring compliance with, for example, road traffic and health and safety legislation.

"It is therefore vital that businesses have in place good systems that will take vehicle and driver information and digest it. In turn that will enable fleet managers to make informed decisions

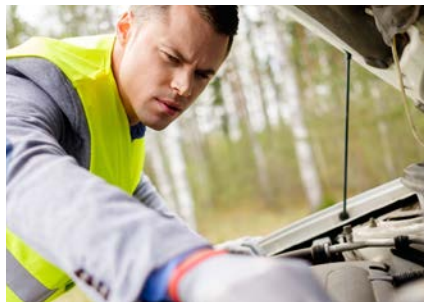
as they will have a holistic picture," said Mr Evans.

Penalties for breaching the core "principles" of GDPR are potentially huge with a maximum fine for companies of €20M or four per cent of total worldwide annual turnover of the preceding financial year, whichever is the higher. What's more, while the financial cost of data breaches is potentially huge reputational damage of businesses misusing data or losing it must also not be underestimated.

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Apprenticeships

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A-Plant is 'highly commended' at National Apprenticeship Awards 2017

A-Plant, the UK's largest plant, tool and equipment hire company received glowing recognition at the National Apprenticeship Awards 2017.

The Company was awarded the Large Employer of the Year at a glittering awards ceremony held at the Titanic Hotel in Liverpool. Organised by the National Apprenticeship Service, the awards recognise excellence in businesses that grow their own talent. A-Plant's Head of Training Bob Harper said: "We are extremely pleased to have received this recognition which reflects A-Plant's exceptional commitment to training the next generation of future leaders."

"Last year we invested more than £1.8M in our apprenticeship programme and we currently have 147 apprentices in all areas from engineering and customer service to plant maintenance and driving. "The programme creates a healthy

dynamic between experienced employees and future talent - apprentices are keen and motivated while experienced employees have an opportunity to pass on their extensive skills and knowledge. "A-Plant's apprenticeship programme has become much sought after and is widely recognised across our industry." Sue Husband, Director of the National Apprenticeship Service, said: "The National Apprenticeship Awards allow talented apprentices and committed employers from across our regions to receive well-deserved recognition for their apprenticeship achievements. "The highly commended finalists at these awards show the range of sectors and variety of job roles apprenticeships are available in, and how they can deliver the skills employers need. I congratulate all highly commended finalists on their success in this competition."

Hillhead 2018 gets special guest

Hillhead 2018 will be visited by a very special guest. The premier construction plant show will see a special appearance from the largest mechanical puppet ever constructed in Britain, The Man Engine. Powered by a Volvo L220 Wheel Loader, The Man Engine, was voted the UK's Best Arts Project and presented with a National Lottery Awards trophy this summer.

The ten metre high 'miner' spectacular mechanical puppet will be in residence for the duration of the 2018 event taking place at the Hillhead Quarry near Buxton from 26 – 28 June next year.

The Man Engine will be located in the newly redeveloped Registration Area which has been expanded to meet strong demand for exhibition space at the show. The demonstration area has been redesigned for 2018 to accommodate additional stands showcasing working plant, including EvoQuip, a new brand launched in the UK from Terex Mineral Processing.

Other companies joining Evoquip in the newly expanded area include among others; Weir Minerals Europe Ltd, MDS International, Red Rhino, Rees Machinery Group, MEKA Crushing and Batching Technology, Renault Trucks, Gap Hire Solutions and Indeco.

Event Director Richard Bradbury explains: "Outdoor space is already 90% sold with the newly extended area nearly full. "We are very excited by the changes we have made at the top end of the site to accommodate more exciting working demonstrations which are synonymous with Hillhead, and the Man Engine will provide a spectacular focal point to the area."

The 2018 event takes place from 26 – 28 June at Hillhead Quarry near Buxton. Exhibitor rebooks for Hillhead 2018 are already 30% ahead of where they were at the corresponding period two years ago. This follows on from a record-breaking 2016 event which attracted over 18,600 visitors and more exhibitors (476) than ever before.

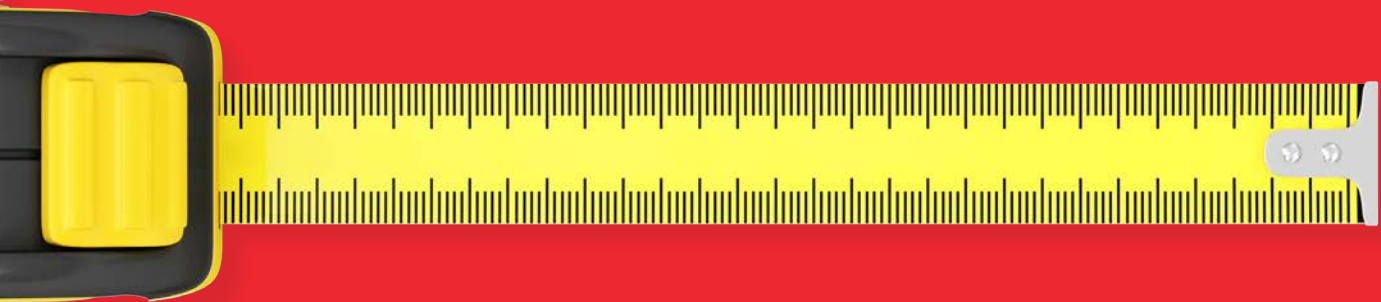
FORS reaches out to SMEs

FORS, the Fleet Operators' Association, participated in a roundtable event, hosted by Brake and Ambit, on 19th October in Birmingham. The event was aimed at educating small and medium-sized enterprises (SMEs) on how they can maintain and enforce fleet safety policy. By following these guidelines, companies can protect themselves

against the financial, reputational, legal and human cost of road traffic collisions. With the cost to employers of at-work road incidents hitting billions of pounds a year, investing in fleet risk management tools can create savings in the long run – particularly for SMEs, with their tighter budgets and profit margins.

Guests heard from FORS Business Services Manager, Paul Wilkes, along with Jeremy Hubbard from Aviva Insurance Risk and Drew Spellar from Ambit.

The event centred on three core themes: employer's responsibilities, driver's responsibilities, and what to do should the worst happen.



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Following an investigation by the HSE, an Essex-based road haulage firm has been fined.

Southend Magistrates Court heard how an HGV driver employed by YCT Limited suffered fatal injuries when his vehicle rolled forward out of control whilst he was coupling the HGV tractor unit to a trailer.

The incident, which occurred on 20th October 2015, was investigated by the HSE, who found that YCT Limited failed to implement safe systems of work. Monitoring arrangements to ensure that its drivers were consistently undertaking coupling and uncoupling operations safely, in line with widely available industry guidance, were also neglected. As a result of this, a culture developed whereby its drivers

were not always applying trailer parking brakes.

YCT Limited, previously of Port Centric House, Thurrock Park Way, Tilbury, pleaded guilty to breaching Section 2 (1) of the Health and Safety at Work etc Act 1974. The company has been fined £170,000 and ordered to pay costs of £6,268.80

Speaking after the case, HSE inspector Jessica Churchyard said "This tragic incident led to the avoidable death of a young man, and was caused in part by the failure of his employer to implement and monitor safe systems of work to prevent vehicle runaways. "This death could have easily been prevented if his employer had acted to identify and manage the risks involved, and followed the industry guidance."

HSE prosecutes road haulage company

TfL unveils draft of Direct Vision Standard

TfL has released initial direct vision star ratings for Euro VI HGVs as part of the proposed Direct Vision Standard (DVS) draft. The Mayor of London, Sadiq Khan, launched the DVS to improve the safety of road users, particularly vulnerable road user groups.

The star system rates HGVs from zero (lowest) to five (highest) based on how much HGV drivers can see directly from their cab, as opposed to indirectly through cameras or mirrors.

Under the proposals 'zero star rated' HGVs would be banned or restricted from London's roads by 2020, and only HGVs rated three star and above would be allowed into the capital from 2024.

The plans are part of steps being taken to directly tackle the amount of cyclist and pedestrian deaths caused by HGVs.





FTA issues checklist for no-deal Brexit

"Business cannot be expected to sort it all out at the last minute. It is not just about the Government being ready." James Hookham, FTA's Deputy Chief Executive

Prime Minister Theresa May and her government might think they are ready to walk out of the EU talks but the UK logistics sector is urging caution to ensure that UK trade and industry can continue to operate seamlessly post-Brexit.

Following the publication of White Papers on trading and customs agreements to be implemented in the event of a "No Deal" outcome to the ongoing EU talks, the Freight Transport Association, the UK's largest and most active membership body in the logistics sector has issued its list of conditions which it says are required to Keep Britain Trading:

- Customs systems big enough to cope with the 255 million additional declarations that will need to be made each year, including fast-track arrangements for approved traders, pre-clearance of goods before a journey begins and post-payment of duties to avoid detention in ports.

- Learning support for the 185,000 UK businesses that currently trade solely with the EU and will need to learn how to do Customs declarations for the first time.

- Equally frictionless arrangements by other EU countries – our exports are their imports so it's not just a question of getting the goods out of the UK, they will need to clear EU Customs as well.

- Avoid vehicle checks at "roll on, roll off (ro-ro)" ports at all costs – an additional two minutes in clearance times at Dover will create a motorway queue 17 miles long, and delays in the days following the UK's departure from the EU could be significantly longer than this at peak times.

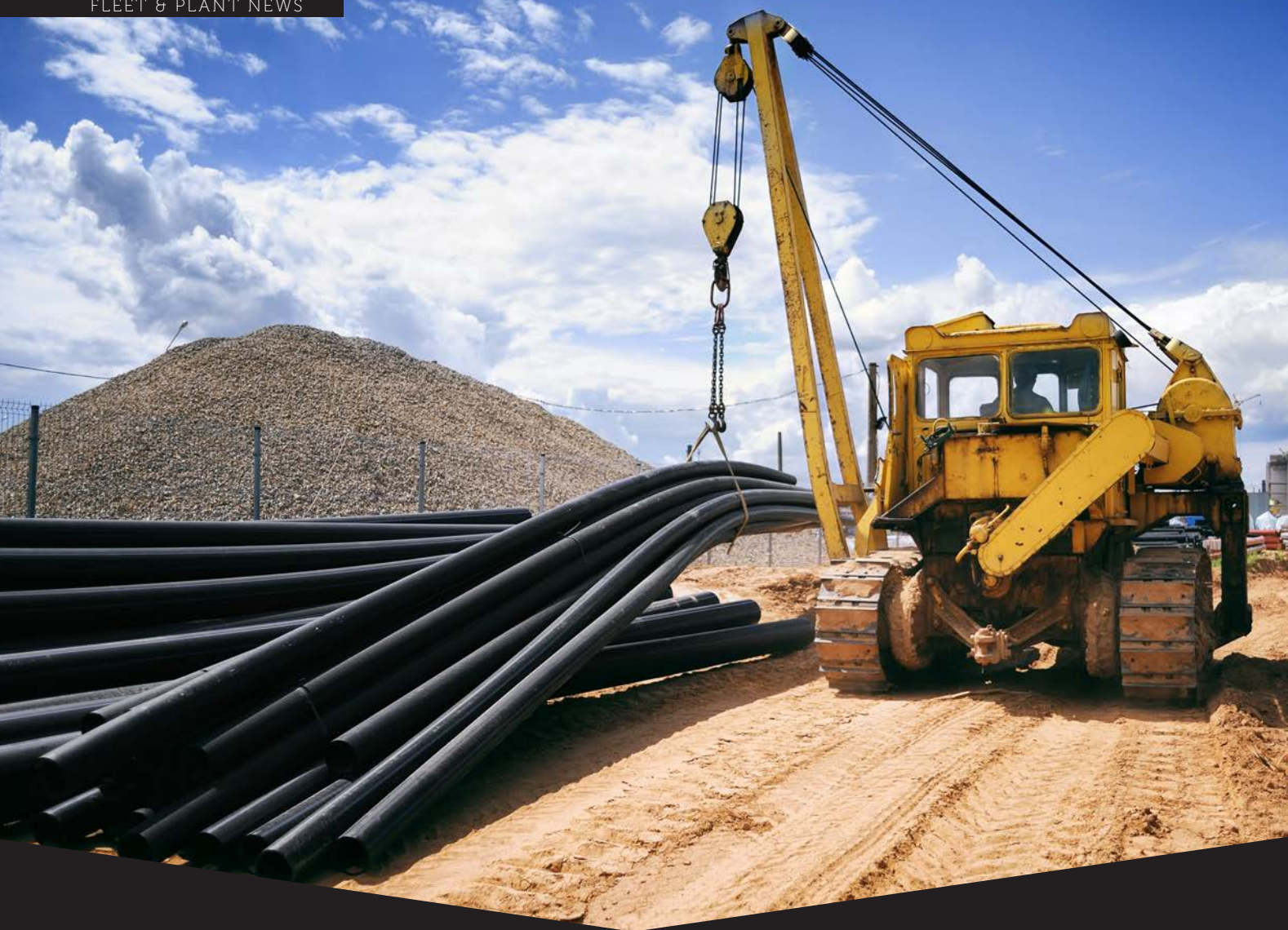
No-cliff edge. Exporters and importers will need time to learn what they have to do under the new trading regime, as well as changing their procedures and instructing their staff. As James Hookham, FTA's Deputy Chief Executive says, so far these businesses have no details of what is expected of them beyond the broad statements in yesterday's White Paper: "Business cannot be expected to sort it all out at

the last minute. It is not just about the Government being ready."

Mr Hookham continues: "The customs White Paper is also silent on the need to agree a quota with the EU over the number of trucks that will be permitted to travel between the UK and the EU after Brexit. This is currently unlimited, but the automatic right to send a truck abroad will end upon Brexit. There is also a need to agree to continue to recognise the licences and qualifications of the drivers driving them.

"But by far the bigger issue, given the balance of trade, is with imports and the White Paper says very little about how the UK will impose Customs tariffs and border checks on freight flows from the Continent and Ireland. Disruption to imports will be felt far quicker by businesses and consumers than will a disruption to exports.

"None of these issues need be showstoppers but it is urgent that the Government commences detailed discussions with the logistics and supply chain sector immediately. FTA and its members await their call."



CPA sets out recommendations to the Chancellor

With the Autumn budget on the horizon, Dr Diana Montgomery, Chief Executive of the Construction Products Association, has written to the Chancellor. Whilst welcoming the renewed commitment to an Industrial Strategy, she acknowledges industry's responsibility to work with government to ensure the competitiveness of UK plc on a new global stage. Outlining the contribution the construction products industry makes to the UK economy; directly providing employment for almost 300,000 people across 22,000 companies; the letter urges the Chancellor to consider a range of short and long-term measures covering housing, infrastructure, and investment and UK competitiveness. She says: "Approximately 78% of construction products used in the UK are made here, reflecting a sector that plays a central role in nearly every construction project in the country.

In addition, manufacturers in many of our sub-sectors have invested heavily here to establish a competitive global advantage with advanced manufacturing and innovative products. As we prepare for Brexit, we recognise industry's responsibility for working in partnership with government to address key issues and ensure the competitiveness of UK plc on a new global stage."

The letter outlines the industry's readiness to support government initiatives with tools and resources. The CPA also suggests a range of measures the government could adopt back this growth.

Housing: In order to meet the government's house building ambition, the CPA therefore recommends the government commit to Help to Buy beyond 2020/21.

Infrastructure: The government's National Infrastructure Delivery Plan

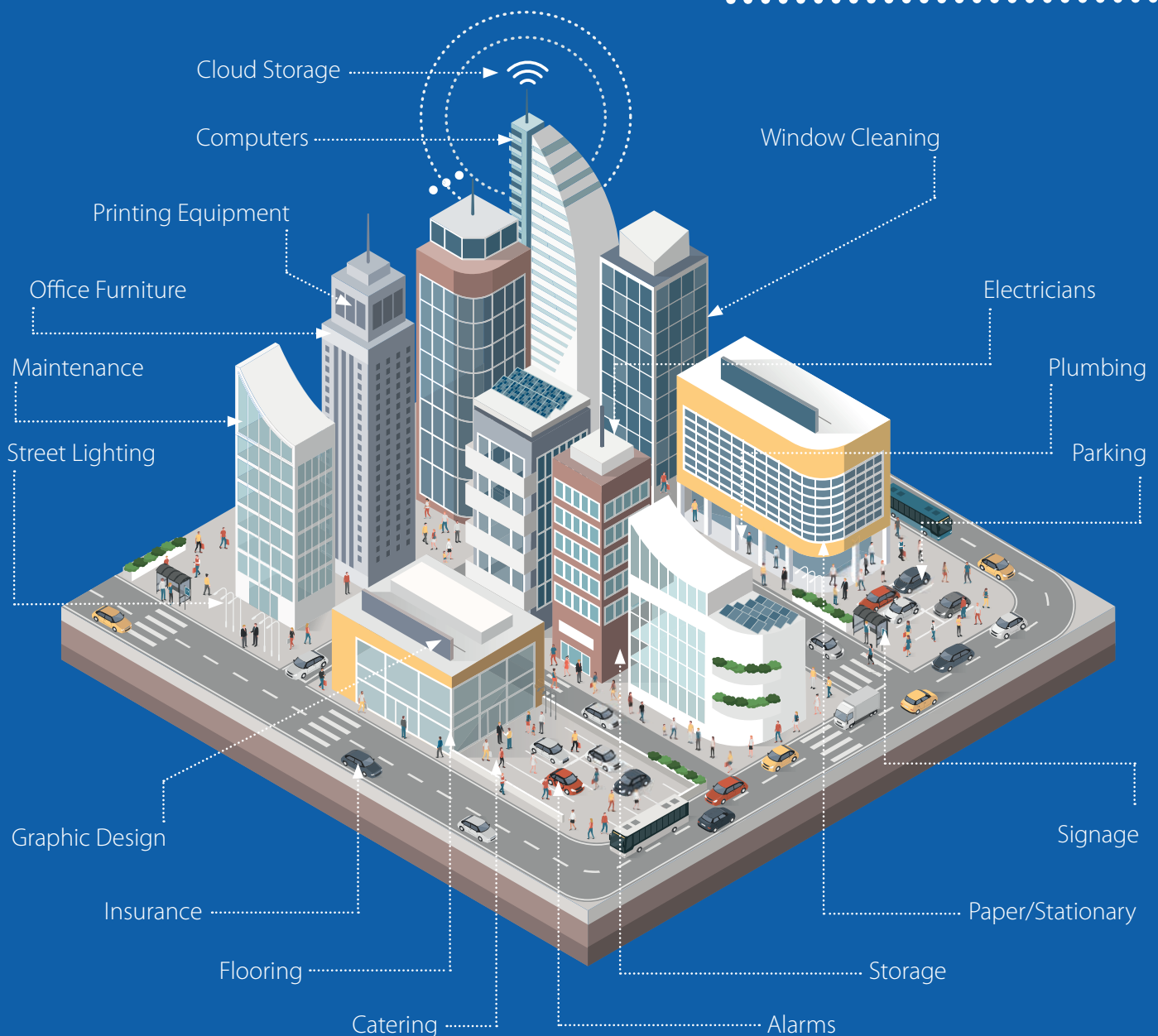
(NIDP) and National Infrastructure and Construction Pipeline must be commended for encouraging longer-term planning for skills, materials and plant investment in the infrastructure sector. However, without major projects coming through in the short-term, total construction output will contract in 2017, 2018 and 2019, consequently adversely impacting on UK economic activity and productivity.

Investment and UK Competitiveness:

The vast majority of our largest construction product manufacturers are foreign-headquartered, with overseas boards making major investment decisions. It is imperative that the UK is viewed as an attractive, competitive place to do business. Policies must offer our industry a level playing field with international competitors to ensure further investment in new plant and machinery.

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CONNECT WITH MAJOR INFRASTRUCTURE PROJECTS AT THE UK INFRASTRUCTURE SHOW

The UK Infrastructure Show – Constructing the Future, taking place at NEC, Birmingham on Tuesday 17 April, is a must-attend event for those working in all areas of infrastructure - from construction to technology - as UK infrastructure investment is set to reach a record high of over £500Bn and a building boom is under way in the UK's large regional cities, with construction finally returning to levels last seen before the 2008 financial crisis. Key findings from a recent Crane Survey report that the volume of office construction in London has increased by 4% over the past six months to an eight-year high of 14.8 million sq ft. Birmingham and

Leeds are also building offices at the highest rate in a decade. Officially supported by CompeteFor – the leading infrastructure supply chain service – and celebrating major ongoing and future infrastructure projects including HS2, Tideway and Crossrail, the second annual UK Infrastructure Show 2018 will provide exhibitors, sponsors and delegates with a unique opportunity to engage, connect and collaborate with a vast array of key projects, a captive audience of 1,000 decision makers and influencers representing all areas of the supply chain. Make your business known, build

valuable relationships and develop market insight that creates lasting competitive advantage by exhibiting or sponsoring at this event. All on one day, in one place at the UK Infrastructure Show 2018.

For early bird exhibition and sponsorship opportunities call the UK Infrastructure Team on 0845 270 7066 or email exhibitions@ukinfrastructureshow.co.uk

The UK Infrastructure Show 2018 is **FREE** to attend for anyone working in the infrastructure sector – SMEs, Prime Contractors and representatives from major projects across the UK. To register for your complimentary place, simply [click here](#).

WHAT CAN YOU EXPECT AT THE UK INFRASTRUCTURE SHOW 2018?

KEYNOTE ARENA

The Keynote Arena at the UK Infrastructure Show 2018 will showcase presentations from some of the organisations charged with setting the strategy of future infrastructure plans as well as some of the major projects currently under way across the UK. Do not miss out on this unique opportunity to hear from a range of the most important speakers in the infrastructure industry.

OPPORTUNITY AND TRAINING ZONES

Designed to educate delegates on the key issues common to large-scale infrastructure projects, these zones will take you through all you need to know in order to make the most of the supply chain opportunities available in this sector. You will also hear from representatives from some of the

UK's leading projects, both those under way and those planned, with details of supply chain opportunities available to organisations like yours.

COMPETEFOR SUPPLY CHAIN ADVICE HUB

CompeteFor is a free service that enables businesses to compete for contract opportunities linked to major public and private sector buying organisations. The CompeteFor Supply Chain Advice Hub is the go-to place for any organisation looking to improve their procurement capability, get a complimentary profile check-up or have your questions answered.

PROJECT PARTNER PAVILIONS

We are delighted to be working with some of the largest infrastructure projects currently under way across the UK.

Our project partners will each have a dedicated pavilion within the Product Showcase Exhibition. Come along and meet with representatives from

these projects to learn more about the supply chain opportunities open to organisations like yours.

PRIME CONTRACTOR ENGAGEMENT VILLAGE

The UK Infrastructure Show Prime Contractor Engagement Village will allow visitors the opportunity to meet directly with many of the key Prime Contractors currently engaged in the delivery of live projects, providing an insight into possible opportunities for developing ongoing working relationships.

The UK Infrastructure Show 2018 is FREE to attend for anyone working in the infrastructure sector – SMEs, Prime Contractors and representatives from major projects across the UK. To register your complimentary place, simply [click here](#).

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