



# UK CONSTRUCTION<sup>TM</sup> EXCELLENCE

DECEMBER 2017

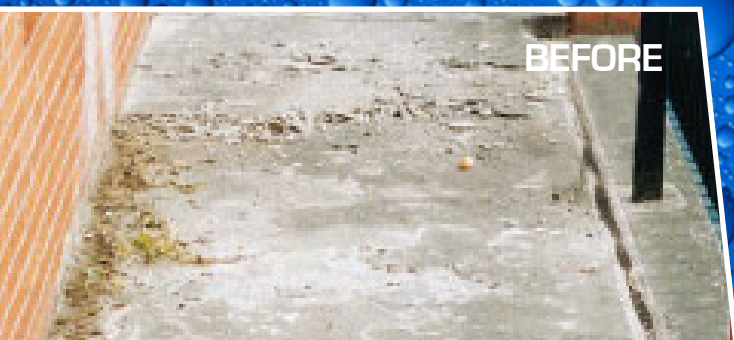
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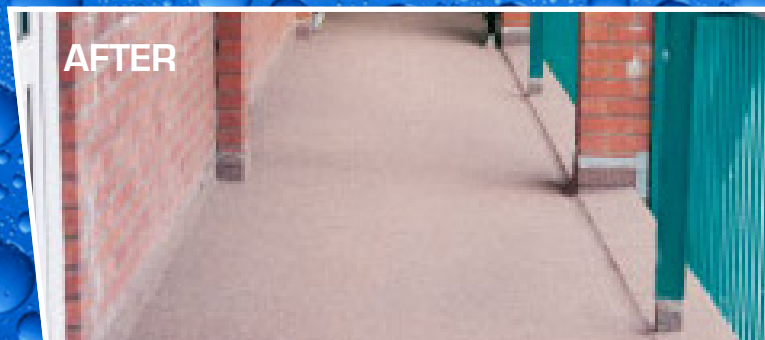
## 32 THE RISE OF ARTIFICIAL INTELLIGENCE IN THE CONSTRUCTION SECTOR



# QUARTZDEK



BEFORE



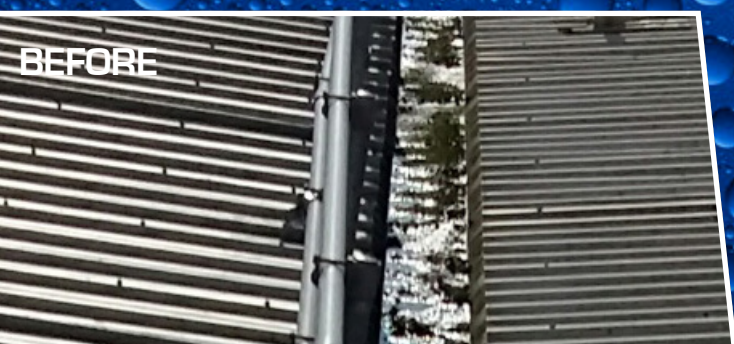
AFTER

**QUARTZDEK** has been developed from proven technology used extensively in Europe during the past 25 years for the renovation of balconies and terraces.

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# WELCOME

## from the editor

**WELCOME** to the December edition of UK Construction Excellence. It has been a busy year for construction, from a turbulent economic and political backdrop, the industry has started to steady itself, with the latest figures from IHS/Markit PMI providing an optimistic end to 2017.

In this month's edition we look to the future and investigate the digitisation of construction; from virtual reality technology to robot bricklayers, and

their applications in the industry. By using new technologies, the construction industry can increase productivity and quality while reducing energy consumption, lowering costs and saving time through creating strong links between designing and making. We take a more in depth look on page 22. The skills shortage is a major concern for the industry, will technology help to address this? Or will sites become

human-free?

We also take a look at how to keep your site safe; from employee safety and public safety through drug testing, to CDM regulations and fire risks on site.

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

**Victoria Maggiani**

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## CONNECT WITH MAJOR INFRASTRUCTURE PROJECTS AT THE UK INFRASTRUCTURE SHOW

### INFRASTRUCTURE AND PROJECTS AUTHORITY CONFIRMS PRESENCE AT UKIS

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. With UK infrastructure investment set to reach a record high of over £500Bn, and a building boom under way in the UK's large regional cities, construction is finally returning to levels last seen before the 2008 financial crisis. Officially supported by CompeteFor – the leading infrastructure supply chain service – UKIS celebrates 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.

Organisers, BiP Solutions, have recently announced new partners for the event, including the Infrastructure Projects Authority. The IPA works with Government and industry to ensure infrastructure and major projects are delivered efficiently and effectively, giving it exclusive insight into the sector.

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](mailto: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 underway 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 underway 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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# Government outlines housing vision

Following Prime Minister Theresa May's assertion that she will personally oversee plans to fix the UK's 'broken' housing market, the Government has released its future 'vision for housing'. This month, the PM acknowledged the lack of affordable properties in the UK and that a generation is missing out on being home owners. She said too few homes have been built, and too slowly, forcing prices to rise.

"The number of new homes being delivered each year has been increasing since 2010, but there is more we can do," she said on Wednesday.

"We must get back into the business of building the good quality new homes for people who need them most. That is why I have made it my mission to build the homes the country needs and take personal charge of the Government's response."

The comments preceded new figures that show the number of new homes in England has risen by 15% over the past year, with the Government beginning to see the results of efforts to tackle the housing crisis – such as the Cameron pledge to build a million new homes. The figures show 1.1 million additional homes have been built since 2010.

Communities Secretary Sajid Javid welcomed the figures, and set out the next steps the Government will take to fix the housing market and boost building more homes.

Speaking in Bristol, which in the past year has seen one of the largest increases in England – 30% – in the number of new homes, the Communities Secretary set out his vision for housing.

Mr Javid said: "These latest figures are clear evidence that this Government is turning things around with over 1.1 million homes delivered since 2010.

"Steps have been made in the right direction – but I want to see a giant leap, and hundreds of thousands more homes. We owe it to our future generations to fix this broken housing market and help them find a home of their own.

"Whilst some councils are recognising their responsibilities and stepping up to meet the housing challenge, too many are still not acting. That's why I'm stepping in now to make sure they act."

A local plan scheme was introduced in 2004, which asked councils to set out how and where they expect to meet their residents' needs for new homes.

Latest figures show that more than 70 local authorities have still not adopted a local plan with 15 of these showing particular cause for concern, having missed deadlines and failed to make progress.

The Government is taking this commitment seriously, and these councils will have action taken against them, with the Government beginning the formal process of intervention as set out in the Housing White Paper.

Not having a local plan in place can mean uncertainty for local people and piecemeal speculative housing development. It can also mean the right investment in local infrastructure isn't made.



## Croydon town centre redevelopment gets green light

The redevelopment of Croydon town centre was given the green light this week, with the approval of the town's planning committee secured.

Following three years of discussions, since the design was first proposed, the regeneration will be backed by both the UK Government and international investor support. Numerous meetings have been held by Minister for London Greg Hands at the Department for International Trade, to encourage and secure global investment in the town.

The final proposals were put to the planning committee after a series of meetings chaired by the Minister for London, where Croydon Council, Westfield Group and the Greater London Authority (GLA), along with all three of Croydon's MPs, agreed the funding needed to move the project forwards.

The Westfield Group will now undertake the redevelopment of Whitgift, joining Stratford and Shepherd's Bush as one of the company's 17 shopping centres worldwide. The Australian group has committed a massive £700M to the redevelopment, to create a global retail destination.

Construction work is set to commence in 2018, creating 7,000 new jobs and 1,000 new homes for the borough.

Mr Hands said: "I am delighted that after convening two meetings of all concerned parties, here at the Department for International Trade, we will now see construction taking place. This major redevelopment of the Whitgift site will bring huge benefits to Croydon and London with thousands of new homes and jobs.

"This is a great example of local and central Government working together with private investors, and as Minister for London I'm delighted to be supporting the project, and seeing it secure planning approval.

"As Minister for Trade it is also yet another example of London and the UK's appeal to international investors, bringing much-needed regeneration projects to life. Croydon will join locations across the world, from San Francisco to Sydney, with a flagship Westfield site, once again proving London's enduring strength as a leading global retail destination."

This project is just one example of the 891 developments agreed this year in London that are being backed by foreign direct investment.







# Rail infrastructure inquiry launched

The House of Commons Transport Committee is seeking responses for its rail infrastructure inquiry.

The consultation seeks views on whether the current system of planning and delivering rail infrastructure investment is adequate. The current system sees much of the funding going to Network Rail through five-year cycles. This system allows the Government to set strategic objectives for the rail network, providing a plan for what work is required and what funding is available.

The process for deciding the funding and outputs of Network Rail for Control Period 6 (CP6: April 2019 – March 2024) has begun and will complete next year. Some £47.9Bn has been set aside by the Government for CP6 – £34.7Bn from Government grants, to be supplemented by track access charges and commercial income. With some ambitious plans for the network, such as several electrification schemes, already scaled back, CP6 is expecting some cost overruns and projects postponed from CP5. Fluctuating market conditions affecting rail supply chain companies, can delay projects and increase cost, and private sector investment in the rail industry is concentrated on rolling stock with a relatively small proportion spent on rail infrastructure.

The committee would therefore like to investigate different ways of deciding the funding and outputs of Network Rail for CP6, looking at whether the current system of planning and delivering investment in rail infrastructure is adequate.

Chair of the Transport Select Committee, Lilian Greenwood MP, said upon announcing the inquiry: "Government has started work on funding and spending plans for Network Rail in Control Period 6. This should address the failures of the current control period: scrapped electrification and enhancement projects; uncompleted work tipping from the current control period to the next; and deep disquiet about differences in regional funding. "We will consider whether the mechanism of control periods is the best way to manage investment in rail infrastructure. At a time when UK passengers have seen ticket prices rising far faster than their wages, the Committee will examine whether the current system of planning and delivering investment is giving us the infrastructure we need if we are to have a modern 21st century railway." The Committee is particularly interested in submissions addressing:

- The impact of postponing renewals from the current control period into

the next and the implications of the Secretary of State's decision to remove enhancements from the control period process.

- The adequacy of the control period process in enabling the delivery of long-term rail infrastructure objectives.
  - Whether Network Rail's long-term planning process is effective in providing the industry with strategic direction beyond the five-year control period.
  - The reasons for the apparent regional disparity in rail infrastructure funding, and the mechanisms by which regions may have a greater input into planning and delivering rail infrastructure, including through route devolution within Network Rail and entities such as Transport for the North and Midlands Connect.
  - The possible implications of the Government's policy of increasing the share of private sector financing in rail infrastructure; and
  - Whether steps taken by the Government and Network Rail to increase private sector investment for rail infrastructure are adequate and how continuing barriers to private sector investment might be addressed.
- Written submissions should be sent via the Rail infrastructure inquiry page, with a deadline of Monday 18th December 2017.



# £2.3Bn building fund announced for Welsh education infrastructure

Welsh Education Secretary Kirsty Williams has unveiled a £2.3Bn funding package which will modernise education infrastructure across the country.

The new measures will help safeguard the 21st Century Schools and Education Programme – a substantial long-term strategic capital investment programme – as it enters its second stage of engagement.

Band A will come to an end in 2019 with a whopping £1.4Bn invested over a five-year period. A second stage, Band B, is comprised of two separate funding streams; one using traditional capital, the other employing revenue funding via a new form of Public Private Partnership – the Mutual Investment Model (MIM).

Local authorities and further education institutions have proposed £2.3Bn worth of projects. Each of these will meet a range of investment criteria, including:

- Alleviating demand for Welsh medium education.
- Rectifying surplus capacity and inefficiencies within the system.
- Expanding schools and colleges in areas of increased demand.
- Addressing the condition of educational assets.
- Making assets available for community use where demand exists.

"I am committed to raising standards, reducing the attainment gap and delivering an education system from the ground up that is a source of national pride and confidence," said Ms Williams. "The 21st Century Schools and Education Programme is one of the means to achieve this ambition and represents the largest investment in our schools and colleges since the 1960s.

"The first wave of funding provided through the programme will see investment of more than £1.4Bn over the five-year period ending 2019, supporting the rebuild and refurbishment of more than 150 schools and colleges across Wales. This is why I am delighted to announce a second wave of investment for the programme, which will begin in April 2019."

Ms Williams concluded: "We will work closely with our partners to agree the pace of delivery and put in place investment plans that are affordable and meet our shared ambition to create sustainable learning environments that meet the needs of our communities."

Announcements on individual Band B projects are to be made in conjunction with local authorities in due course.



## Cowboy clients threat to builders

New research conducted by the Federation of Master Builders (FMB) has turned the image of cowboy builders on its head, saying that three quarters of builders are actually under threat from cowboy clients.

The research was undertaken to assess the impact of late and withheld payments on SME construction companies, a major problem within the sector. It revealed that three quarters of companies think that cowboy clients are a serious problem for their businesses, with nearly a quarter of those surveyed waiting for more than four months for payment from a client or large contractor. The problem seems to be widespread, with only a third of respondents saying they are always paid within the standard 30 days.

The problem of late payment is having a negative effect on the industry, which is being exacerbated by the tough economic climate, and is prevalent throughout the supply chain.

More than a third of respondents say the delays have led to late payments to suppliers and 16% have had to borrow additional funds from a bank or lender to keep the business afloat – with some eight per cent claiming they almost went out of business due to the issue. Companies are having to delay payments to staff and even make some redundant due to cash-flow problems, while 20% within the industry say late payment has prevented them from growing their business because of a lack of security. Sarah McMonagle, Director of External Affairs at the FMB, said:

"There are so many horror stories of people being duped by cowboy builders. However, our research shows that there's a flip side to this story with three quarters of small construction firms being hampered by 'cowboy clients'.

"Typical cowboy client behaviour can include a demand for the builder to complete tasks not included in the original brief or quote and for no extra payment. The worst type of cowboy client seeks to delay or withhold payment on spurious grounds, for instance by discovering make-believe faults. Nearly a quarter of construction SMEs have had to wait for more than four months for payment from a client or large contractor. Less than one third of builders are always paid within the standard period of 30 days and this is completely unacceptable."

Ms McMonagle concluded: "Late payment is having a direct impact on the ability of construction SMEs to grow and prosper. One in five builders say delayed payments from clients have stopped them from having the confidence to grow their business. Worse still, nearly ten per cent say that they nearly went out of business because of this.

"As we edge towards Brexit, we need the construction sector to be firing on all cylinders to shore up the wider economy. The last thing we want to see is thousands of builders going to the wall because of their customers refusing to pay on time. We strongly recommend that builders and clients do everything they can to protect themselves by using a written contract that includes an agreed payment schedule. Clients rightly demand a high level of service from their builder but home owners also need to keep their end of the bargain by paying on time."





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# New joint venture launched in North West

Galliford Try Partnerships and Trafford Housing Trust have joined together to create one of the largest joint ventures in the North West.

The joint venture has developed between the housebuilder and registered provider as part of a major regeneration opportunity in Greater Manchester. The opportunity is worth more than £100M and will transform an area of Greater Manchester, providing some 600 new homes at Heath Farm Lane, Partington.

The newly established joint venture, known as Heath Lane Farm LLP, will focus on delivering high-quality new homes, providing a sustainable new community which integrates within the existing Partington area. Plans for the regeneration are being developed through consultation with the local community and are designed to make a vital contribution to the success of the Partington Priority Regeneration Area. The consultation process is underway with planning expected to be submitted early in the new year, with a start on site predicted for later in 2018. Situated less than one mile from

Partington town centre, just ten miles south-west of Manchester city centre, the joint venture will create a new thriving community in the heart of Partington. A range of new homes, from one-to five-bedroom properties, will be available including apartments and family homes.

Five hundred of the new homes will be available for open market sale, with a further 74 houses available under shared ownership and as affordable rental properties.

Galliford Try Partnerships Chief Executive Stephen Teagle commented: "This is an exciting opportunity to work with the Trust's Laurus Homes housebuilding division and deliver a high-quality development that provides great homes, a great environment and contributes to the wider regeneration of Partington. It will provide homes and jobs for local people and add to our growing programme of delivering new homes in the North West."

Brendan Blythe, Regional Managing Director at Galliford Try Partnerships North West, said: "Trafford Housing Trust has a well-established reputation

within the Trafford and Greater Manchester area, therefore we are delighted to enter into this joint venture to establish Heath Farm Lane LLP and bring forward this important regeneration scheme.

"In recent years, the Partington area has undergone extensive investment and we look forward to using our expertise in delivering high-quality, sustainable housing to rejuvenate the area and create a thriving, high-quality community." Larry Gold, Deputy Chief Executive of Trafford Housing Trust, added: "Being based in Trafford, we are very familiar with both the challenges and huge opportunities that the Partington district has to offer. This scheme is just one of several transformational programmes in the pipeline for the area, and we look forward to working with Galliford Try Partnerships to drive this first phase of development."

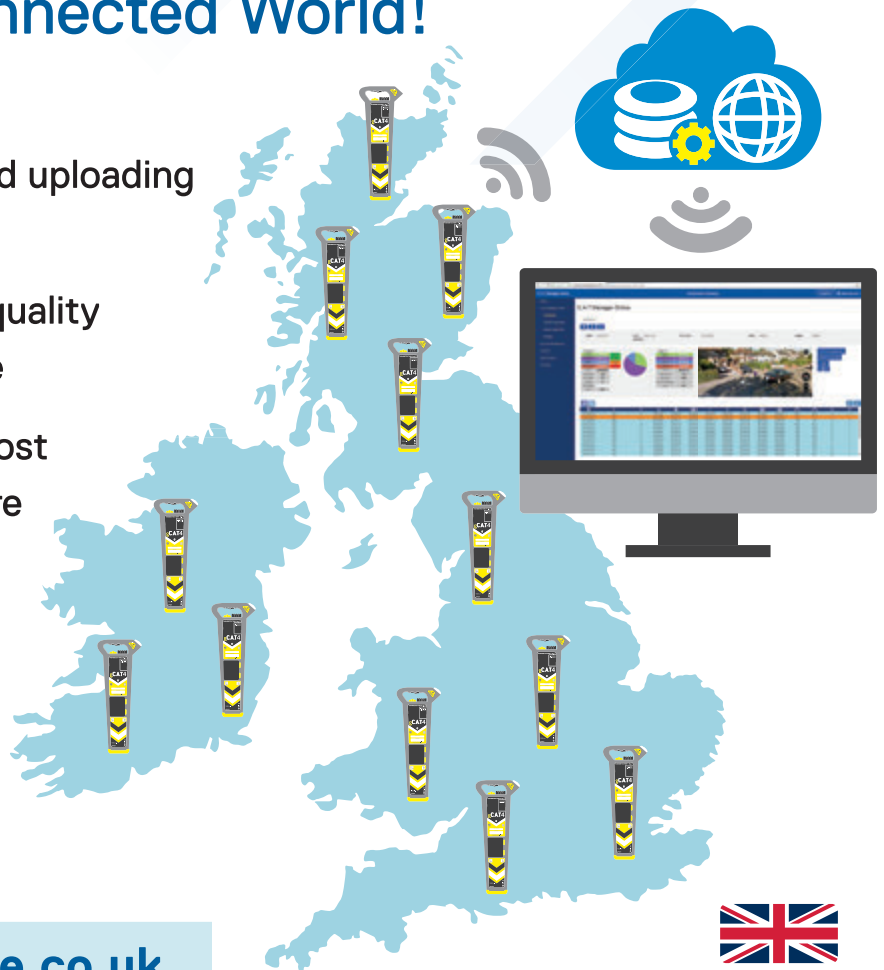


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## Glasgow City Council unveils strategic housing investment plan

Glasgow City Council has officially approved its Strategic Housing Investment Plan (SHIP), which will deliver up to 10,000 affordable homes during the next five years. More than £600M is to be invested over the same period as part of the SHIP, which was established following an in-depth consultation with Glasgow City Council stakeholders. The strategy outlines an affordable housing supply programme for the city, exploring housing investment priorities and available resources in the process. The SHIP forms part of Glasgow's wider housing strategy, which prioritises:

- Regeneration and investment for new-build housing.
- The management, maintenance and improvement of existing housing stock.
- Raising management standards in the private rented sector.
- Tackling fuel poverty, energy efficiency and climate change.
- Improving access to housing across all tenures.

- Promoting general health and wellbeing.
- The creation of sustainable mixed tenure communities across Glasgow is absolutely essential to the SHIP, as is collaboration with communities to substantially improve housing quality, services and cohesion.
- According to Councillor Kenny McLean, City Convener for Neighbourhoods, Housing and Public Realm at Glasgow City Council: "The council is committed to making sure that people and families in Glasgow have access to affordable housing, a cornerstone in our aims of improving the quality of life for many Glaswegians and giving everyone in the city the opportunity to share in our economic growth. "A five-year plan such as this allows the council and our housing partners in the public and private sectors to plan ahead, in order for us to deliver the targets set for affordable homes in the city."

## MTC develops future of digital construction



Digital Built Britain has commissioned the Manufacturing Technology Centre (MTC) to develop the competencies of five key roles within the modern construction industry. As digital construction is being rapidly adopted across the sector, with the benefits being numerous and the Government BIM mandate developing, it is crucial that the construction sector puts in place competencies and standards.

Off-site manufacturing is well documented as an enabler to meet the targets set out in Construction 2025. For the construction industry to adopt digital technology and modular / off-site manufacture and realise the efficiencies that this process can offer, the right training provision needs to be available. This echoes the findings of the CITB report Faster, Smarter, More Efficient: Building Skills for Offsite Construction.

The training which needs to be available is:

- The provision of new competencies for existing people in evolving roles.
- The provision of new competencies for people in new emerging roles.
- The integration of new digital technologies across all roles.

The MTC aims to set out the frameworks for five key roles by March 2018, with a view to developing Trailblazer Standards as necessary and offering apprenticeships where appropriate. These roles are:

- Digital Architect.
- Digital Design Technician (Level 6).
- Digital Construction / BIM Technician (Level 4).
- Digital Automation Technician (Level 3).
- Multi-skilled Digital Assembly Technician (Level 3).

The MTC is an independent organisation with the objectives of bridging the gap between academia and industry via research and development, training, advanced manufacture and factory design.



# The Chancellor's Construction Conundrum

The UK's ongoing economic problems have taken their toll and the UK construction industry has been teetering on the edge of recession for the last few months.

The uncertainty in Britain's economic future means investors are holding back on signing off on future projects. No one can dispute that the Chancellor has been dealt a tricky hand: the need to tackle the deficit through austerity measures whilst trying to stimulate a flailing economy seems like an impossible task.

There are, however, ways in which he could be doing more to "Get Britain Building", as has been famously promised.

## **Public Investments:**

The Chancellor has announced £44Bn of investment into housing with the aim of building 300,000 new homes per year, a development which will be met positively across the industry.

Although there are some positive steps here, recent months have seen a consistent and steady decline in both civil engineering and commercial activity so the industry could do with a more significant leg up. Far more is required in order to have the desired effect – some key issues have been overlooked. George Osborne's attempt to revive northern industry has seen significant infrastructure projects undertaken, such as the ambitious HS2. In October, the Chancellor announced another £400M for further infrastructure projects in the north – a huge sum which will undeniably give the sector a healthy boost. He has also just announced the extension of the infrastructure fund from £23Bn to £31Bn.

These investments are a good starting point – attention certainly needs to be paid to UK housing and its ongoing crisis. The Government is well behind targets on this front and national prices continue to rise in relative cost. In Parliament, there's a clear consensus on both sides of the house that an emergency strategy is needed on affordable housing. The encouragement of housebuilding will help solve this social crisis as well as providing a vital boost to the construction sector.

Theresa May has declared the housing crisis a 'personal' mission. We will have to wait and see how effective the new investments will be. The Government must ensure it takes frequent advice from industry professionals on where the

money would be most aptly used.

## **Commercial Support:**

Investment alone, however, will not be enough. In order to really kick start the industry, the Government needs to create enthusiasm within the sector and encourage both businesses and individuals to take on new and innovative projects – something which will be crucial whilst the Brexit fog remains. To stimulate things in this way, the Government should be spending time and money on creating and allocating bespoke grants and R&D incentives. Allocating rewards like these for ambitious projects will facilitate development plans, helping boost the economy but also inspiring a new wave of innovation in UK construction.

The problem with these at the moment is the difficulty and reluctance with which the rewards are granted by HMRC. Removing the obstacles that currently stand in the way when pursuing these incentives would get projects on the move and encourage people to undertake more.

HMRC's belt-tightening has caused ventures to become stagnant. The bureaucracy and lack of coordination in R&D applications have made processes overly stringent, with case workers challenging every detail of applications. HMRC is not living up to the expectations of those in the sector. Despite loudly promoting the construction industry, the Government is withholding vital funding and failing to provide the necessary support. Actions are failing to match words.

With these issues being overlooked, construction in the UK will continue along its sluggish trajectory for the foreseeable future – at the very least until Brexit uncertainty passes.

## **Skills Shortage:**

The Royal Institution of Chartered Surveyors released a report last week revealing a distinct lack of able construction workers. According to the data, two-thirds of surveyors are struggling to recruit the necessary manpower for building projects. So why is there this lack of talent? 'Brexodus' may have played its part, but the problem goes deeper.

Attracting people to the industry is key. This has, in part, been addressed with the introduction of a £34M fund for



training construction workers. However more has to be done – this is a mere drop in the ocean!

Providing additional subsidies for apprenticeship schemes across the industry will help draw workers to pursue a career in the industry whilst also enabling businesses to take on and train new employees they otherwise wouldn't. Then in order to foster and retain talent from the grass roots, university courses must be made more appealing to students. Assistance should be given to universities to train aspiring construction workers by ensuring universities are capable, with all the necessary equipment.

## **What Next?**

It seems clear that the Government needs to work closely with the industry. A 'well-constructed' plan involving a combination of private and public talent and investment will be essential. Naturally, the Government has its obligation to tackle the deficit, so now is the time to look to means beyond blanket infrastructure and housing investments. Innovation will be essential in the years to come.

**By Justin Arnesen, Ayming, Director: R&D Tax and Grants**



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# RIP IT UP AND START AGAIN



In 1983 Orange Juice (the band) had a hit called “Rip it Up”. It was a good song and it got to 42 in the UK singles chart before fading into history. For some reason this song popped into my head as I was reading a case called **Jacobs UK Limited and Skanska Construction Ltd [2017] EWHC 2395 (TCC)**, which was handed down on 28th July 2017. The case is interesting and addresses the question of whether a Referring Party to an adjudication is entitled to withdraw a dispute from adjudication and then refer the same, or substantially the same, dispute to a second adjudication at a later point in time.

## Background

From 2008, Skanska engaged Jacobs to provide design services on a PFI contract for the replacement of street lighting in Lewisham and Croydon. It appears that things did not go completely to plan throughout the life of the project and in February 2017 Skanska sent a Notice of Adjudication to Jacobs to recover losses which Skanska considered Jacobs was responsible for due to delays and poor design.

Patrick Waterhouse was appointed as Adjudicator and the parties agreed a timetable for the service of the Referral, Response and Reply in an exchange of emails on 13 February 2017. The Referral and Response were served on time but unfortunately, when it was Skanska’s turn to submit a Reply on 7 April 2017, its Counsel became unavailable. Skanska requested an amendment to the timetable but this was refused. As a consequence, Skanska withdrew its reference to adjudication and invited the Adjudicator to resign. Mr Waterhouse resigned on 11 April 2017.

On 21 June 2017, Skanska commenced a second adjudication with ostensibly the same claim against Jacobs. Jacobs issued Part 8 proceedings in Court seeking a declaration that Skanska’s action in commencing a second adjudication on the same dispute was unlawful, an order to restrain Skanska from pursuing the second adjudication and recovery of its costs incurred in the first adjudication.

## The Decision

In an interesting judgement it was concluded that there is no express or implied restriction in the Housing Grants Construction and Regeneration Act 1996, or the amended Scheme for Construction Contracts, that precludes a party from withdrawing a disputed claim which has

already been referred to adjudication and then pursuing the same claim at a later date.

It should be noted that the Court did say that there might be occasions where it might be appropriate to intervene and prevent a party from pursuing a claim in adjudication but that it would only do so where it could be shown that the actions of the claimant amounted to unreasonable and oppressive behaviour. It is a question of fact in each case as to whether the behaviour of the party to adjudication is found, on an objective basis, to be unreasonable and oppressive. In the present case, although Skanska’s withdrawal of its claim due to the unavailability of its Counsel was unreasonable, its behaviour was not oppressive. The court will only intervene where the actions of a party are both unreasonable and oppressive. Interestingly, the court also formed the view that the agreement of a timetable for submissions which Skanska breached meant that Skanska was then liable to a claim for any abortive costs incurred in adjudication number one and/or additional costs incurred by Jacobs in adjudication number two.

### Conclusion

The following conclusions are quoted directly from the judgement.

- i) A party to an adjudication is entitled to withdraw unilaterally a dispute referred to adjudication and commence a further adjudication in respect of the same, or substantially the same, dispute.
- ii) In such circumstances, the court has the power to grant an injunction to restrain pursuit of the further adjudication if the further adjudication is unreasonable and oppressive.
- iii) On the facts of this case, the second adjudication does not amount to unreasonable and oppressive behaviour,

justifying the exercise of the court’s discretion in granting injunctive relief. iv) Jacobs is entitled to its wasted and/or additional costs, if any, caused by Skanska’s failure to comply with the agreement of 13 February 2017.

So, it would appear that the lyrics in Oranges Juice’s song are quite apt and it is okay to “rip it up and start again”. Now all I have to do is get the blasted song out of my head!

**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 [pvinden@vinden.co.uk](mailto:pvinden@vinden.co.uk). For similar articles please visit: [www.vinden.co.uk](http://www.vinden.co.uk).**





# Digitising construction



**Mark Norton,**  
Head of BIM



**Simon Spink,** Head of  
Visualisation

Building information modelling (BIM) technology is revolutionary for construction, bringing together design, planning and infrastructure, and enhancing communication between contractors, subcontractors and the supply chain.

Its influential nature has become a fundamental in the design, creation and development of public sector buildings, and is increasingly being applied to schemes across the UK. We spoke with Mark Norton, Head of BIM, and Simon Spink, Head of Visualisation, at ISG about the technology and how it has integrated itself into the AEC landscape. Having joined the industry in the 80s as a Mechanical Engineer, and building an interest in CAD, Mark has been an advocate of digital construction ever since. Joining ISG nearly four years ago as the Head of BIM has led Mark into a technological crusade, working within a forward-thinking operation that is looking to use digital technology wherever possible.

"My scope has changed quite dramatically from when I joined," he says. "When we look at the variety of interfaces available within construction and where we can use that technology. BIM is all reaching now."

Take-up of the technology has become quite rapid, and ISG has found there are a number of applications. This has led to an investment in both people and state-of-the-art equipment. But where can the technology be applied?

"There are two areas that we look at in detail: Preconstruction and VR," says Mark.

"A few years back, people were rendering models and walk-throughs with VR. What we've progressed to now is live walk-throughs – which are far more intuitive to clients and a prerequisite for a room. Clients can walk-through before buildings are even built, with the freedom of the building so to speak, whereas before you had a certain area or a



pre-recorded area that clients could explore, now you can go anywhere. "This feature has already shown significant benefits, with fewer or no changes to designs further down the line.

"Clients are given a spatial awareness not available previously, and new design options can be explored."

Simon agreed: "The decision makers on projects have changed in recent years. For example, we are seeing the HR director play an increasingly important role in the delivery of a company's new workplace. As decision making devolves to people that are not real estate experts, VR and AR can help bridge the divide between technical documentation and the finished product.

"Our real-time visualisation app means that we can go to meetings with our client and guide them through their space. The client can look at any area of their building immediately and see the finished product without having to wait for renders from the architects. We can show them what the space will look like with different floor finishes or under different lighting conditions. This not only accelerates the decision-making process, but gives the entire project team piece of mind and the client confidence."

Applications for virtual reality are wide ranging, and Simon sees one of the most useful applications is in training.

"One of the most pressing opportunities for VR is as a health and safety training tool," he says, "It can be used for site inductions and as part of an ongoing training programme to make people aware of hazards and teach them how to respond to risks in a controlled and measured way.

"Aircraft pilots have learnt how to fly under simulated conditions for decades, so it makes sense for other industries with highly trained operatives to follow suit to reduce

risk. If you immerse someone into a real-life situation within their work environment, you can train them more effectively and safely in what is essentially a live scenario rather than learning reactively on the job.

"We can input the risks, make them aware of them and teach them to deal with the situation."

As well as scenario planning, it can also help with employee orientation. A virtual induction means that employees can walk around the site to familiarise themselves with fire exits or facilities, which again helps to mitigate risk. It can be used like the hazard perception test in a driving examination.

"We are now using VR to supplement the Construction Skills Certification Scheme (CSCS), but as it becomes more widely used across the industry we should look towards accreditation for VR training schemes." Augmented reality is being applied in different scenarios. It is easily applied on site and can be used through smartphones and tablets.

"While AR lends itself to a lot of areas, kit is still quite expensive and not quite where it needs to be to take off," says Mark. "So, we're looking at technology that people already use, such as tablets and smart phones, things where we can add AR intuitively." Mark continued: "We can overlay models against the actual reality of the building, pull up data, and merge that with what we're seeing on the smart phone or tablet."

"As we build these plans, we see it is all useful information that can be compiled for the Facilities Manager. When you hand over, that information is handed over to the facilities team, so they've almost got an x-ray vision of what is behind walls, above ceilings, and below floors. You can also break out the data that's associated with that, so the FM team doesn't have to

refer to manuals etc, they can do it live within the building."

Construction is seen as a bit of a dinosaur and slow to take up new technologies. Whether digital construction will be embraced by the industry or dismissed as a gimmick remains to be seen.

"That's why we're going down the smart phone and tablet route because, everybody has them," says Mark. "If you look at the smart helmets, they're a great bit of equipment, but they're quite expensive and quite niche. Maybe they'll be more popular in five to ten years' time when the price drops. But everybody has a smartphone or tablet, they are easy to use and relatively inexpensive and the technology fits with them very well.

"One of our development rules is the two-minute rule – if somebody can't use a bit of tech within two minutes, they are probably not going to use it, so we try to make everything as easy as possible."

Technology is developing and changing so rapidly, its applications in construction will become more ingrained.

"Over the next five years, robotics will probably play apart in what we do on site to a certain degree," Mark says. "At the moment they're manually operated, but it's only a matter of time before they become autonomous and they're travelling around sites on their own, that will be a big area.

"Machine/computer learning is going to grow and grow and that analysis is going to give us many more solutions than we could think of ourselves. So part of design and construction iteration could be taken away from the human brain and progressed using a machine.

"It's an exciting time to be in construction."





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# Internet of Pings: How connected construction can manage better than ever

The internet of things (IoT) is not a new topic. In fact, it has been a discussion point for decades and the first smart appliance, a toaster, was actually connected to the internet back in 1989. Property-wise, many connected trends focus on inside the home – be it networked climate controls, security solutions or connected appliances; however, outside the home, the construction industry has been slow to adopt technology innovations. Last year, the construction industry was found to be one of the least digitised industries. Alongside the fact that construction labour productivity has not kept pace with overall productivity, it seems the need to invest in technology to keep the industry running is a given. These tools are aimed at increasing efficiencies, reducing cost and ensuring, as much as possible, that projects run on time – so resistance to change seems nonsensical, particularly when this is one of the goals for large builders and developers. Whilst the construction industry isn't necessarily known for its connection

to technology, a surprising number of tools have arisen to help those within the sector, such as virtual reality (VR), including 3D building modelling. From 3D walk-throughs to sell a property, to 3D VR modelling used to pitch architectural projects, there are numerous benefits to adopting this technology. In addition to the increased efficiencies and reduced costs, it can allow builders to stand out from the crowd when marketing their property to consumers and gain an edge on their competitors. One such VR process which is widely used in construction is building information modelling (BIM). BIM is a process that provides a 3D model of a building, which can be used to model a building's structure and systems during both design and construction. However, it doesn't only provide a model; it also offers data management capabilities that can keep everyone on the project team on the same page at all stages of the build, from conception to construction documentation and maintenance.

Sensors can also be used to feed back to the BIM, collecting data on things like energy usage patterns, temperature trends or people movement throughout a building. This can then be analysed to improve future building projects. With large and complex build projects, this technology is imperative to ensure that all parts of the cog are running at the same pace and potential difficulties or delays are dealt with before they arise. Sensors can also be used on heavy construction equipment, which can be remotely monitored for indicators of potential issues like temperature fluctuations or excessive vibrations. When abnormal patterns are detected, alerts can trigger maintenance workers to intervene early, before critical equipment fails. When delays on any construction project can be costly, this can benefit the more substantial construction projects / developers. Augmented reality (AR) is at a much earlier stage in its adoption, partly due to health & safety concerns, the need for a large data repository and the complexity of tracking constantly moving data.

However, the benefits of AR far outweigh the concerns and this is evident from the recent award of £1M of Innovate UK funding to a consortium working in the AR field. The investment is aimed at developing an Augmented Worker System (AWE), which will pioneer the use of virtual and augmented reality for the construction industry. With a focus on reducing cost and waste, and increasing productivity, the system will improve the construction process at every stage, delivering "faster builds to a higher quality with fewer defects and more sustainable buildings."

With construction projects often plagued by problems, working off old school paper blueprints and drawings makes it harder to capture, analyse and share data with the different contractors involved in the process. But innovative tools are reinventing the industry, with new ideas emerging all the time. Examples include the smart helmet designed specifically for industrial settings from Daqri; and the SmartReality app from JBKnowledge,

which allows users to hold a smartphone or tablet over designs or plan files and see 2D drawings projected as 3D models. Continued investment in the construction industry is imperative to ensure it has the capabilities to respond and react to developments and changes. Through programmes like the Government's Digital Built Britain (DBB) and through the development of innovative new technology, planners and architects are given more opportunity to collaborate with contractors, whilst reassuring clients and addressing any concerns they may have.

In addition, developers need to be forward thinking to attract talent with new skills to make use of these new technologies, and adopting these is

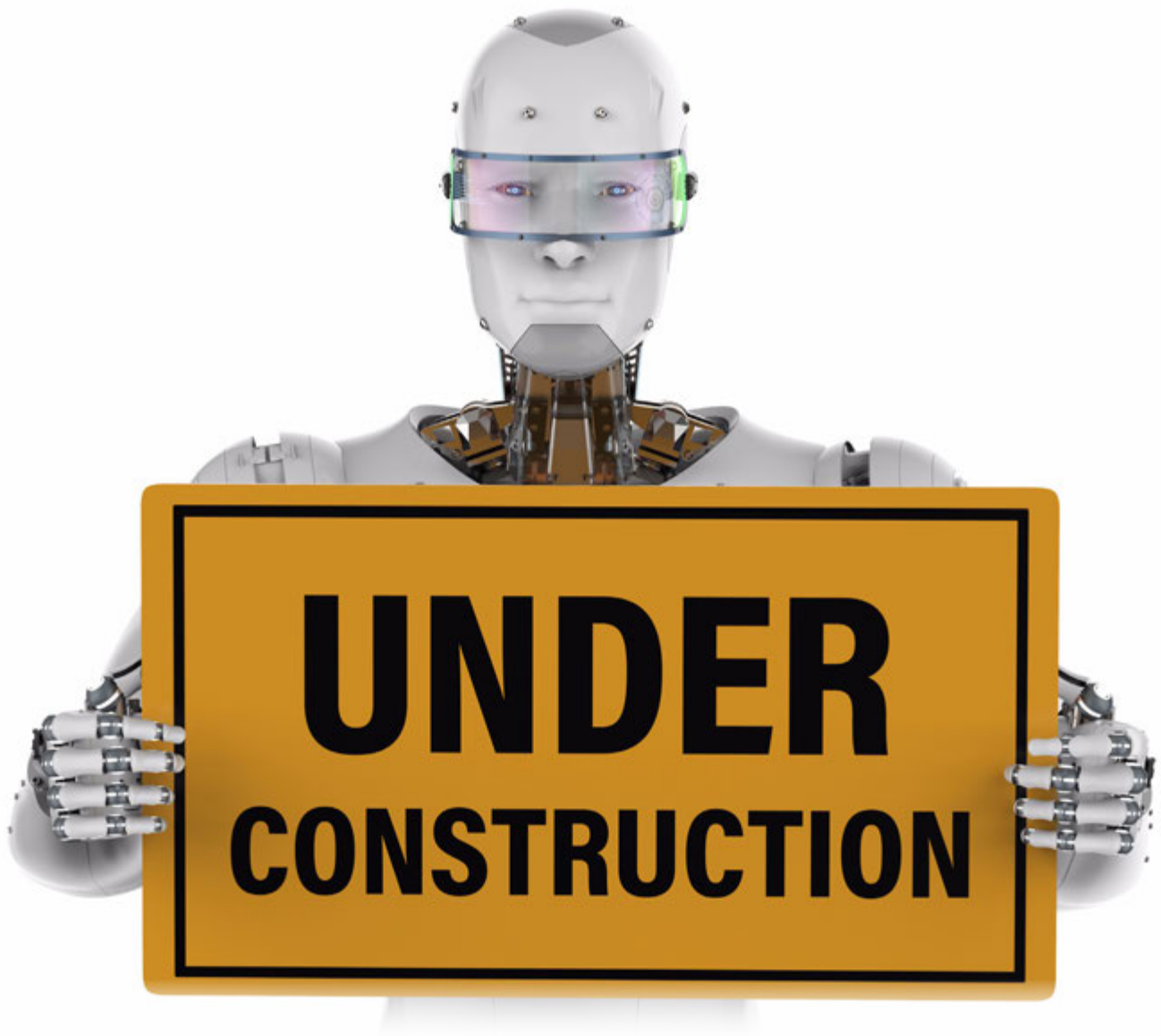
sure to create increased interest from the digital generation. Embracing the internet of things will also allow builders and developers to push boundaries and drive the expectation and quality of new builds forward. These tools are surely being used in large-scale commercial builds, so it is time that they become the norm for large residential builders and developers too.

The adoption of innovative ways of working can be daunting, but ultimately, builders and developers need to ensure they are keeping up with new and improved ways of working which will benefit the industry, as well as the end user. Since the creation of the first connected appliance, we have come a long way; but there is still a mountain to climb when looking at how this technology can, and will, benefit us in the very near future.

**Article submitted by Steve Mansour,  
CEO of building insurance specialists,  
CRL**







# What AI Means for Construction

Automated technologies are making their way into the construction industry. As the demand for new buildings reaches an all-time high, construction firms are looking for ways to streamline their projects. The rise of Artificial Intelligence and machine learning technologies make this easier every day. Although the fear of robots taking over is inevitable, there are positive aspects.

A few of the short-term benefits of AI and machine learning in construction include:

- Real-time tracking of equipment, tools, materials, and people
- Heavy machinery monitoring in the case of malfunctions
- Increase in worker safety and jobsite productivity

Upon first glance, these benefits may seem to matter only to GCs or owner-operators, but the benefits reach other construction professions. According to an article from Construction Executive, "AI and machine learning will also help assist project managers and architectural consultants in demand forecasting and scheduling during years-long design and planning phase before ground is actually broken." This could help professionals anticipate market needs and eliminate simple human errors, potentially making projects more "thoughtfully" planned.

Safety is one of the positive aspects of AI that benefits everyone. During the Build Conference in Seattle this year, Microsoft showed how AI could make construction sites safer and more productive. Using onsite cameras, facial recognition, and info about objects

and people, new software is allowing project managers and businesses to monitor jobsite work in real-time. This would allow the auto-enforcement of policies and regulations. The new platform can monitor which employees are using equipment, and it even knows which workers are certified to use it. By simple facial recognition, AI is keeping track of any worker who might in violation of policies or causing danger to those around them.

Artificial Intelligence and machine learning are no doubt scary, but the benefits outweigh the fear it causes. By using AI to anticipate market needs, plan projects more efficiently, and monitor working conditions, we may start to see this fear alleviated-- or even eliminated in the next couple of years.

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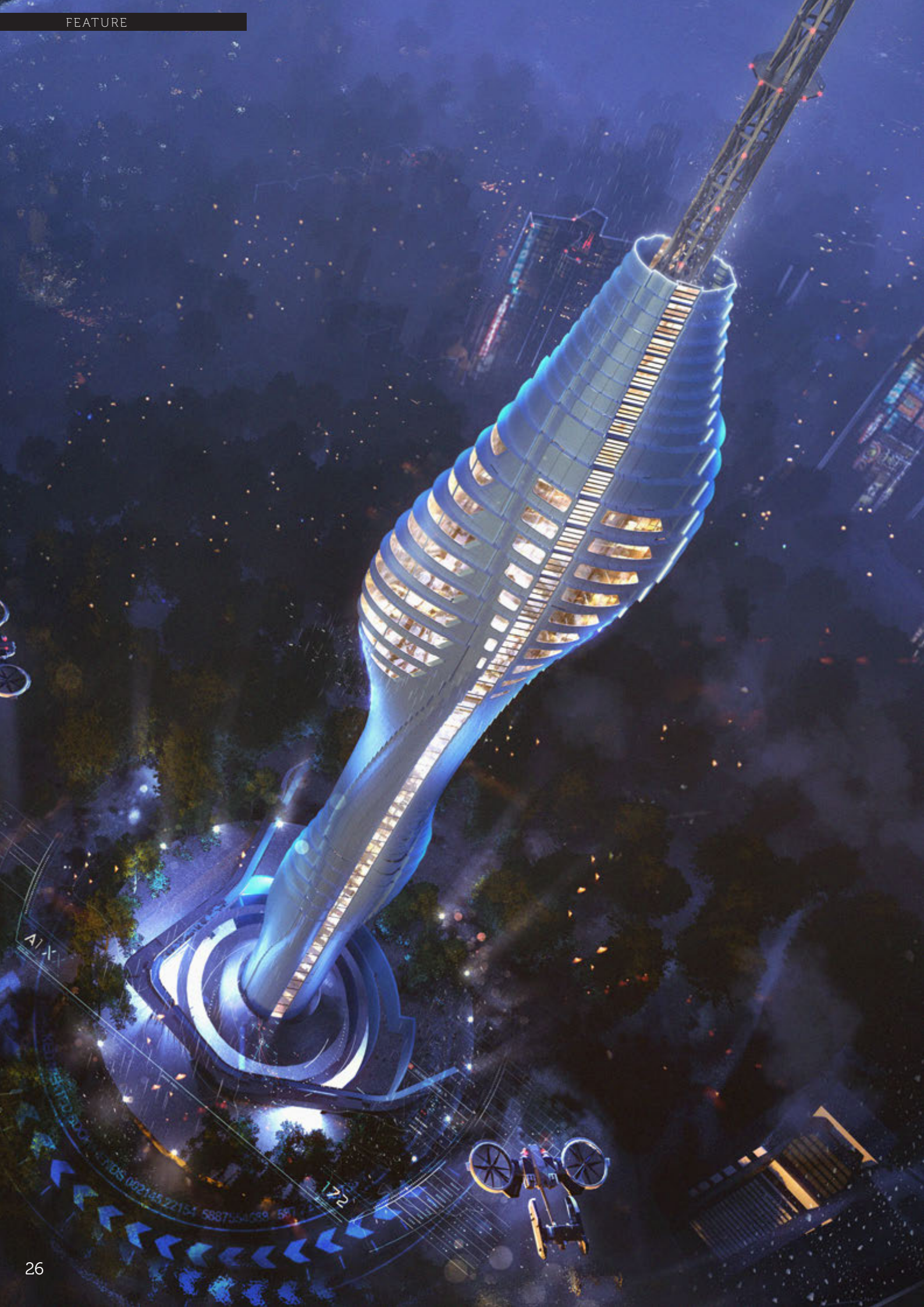
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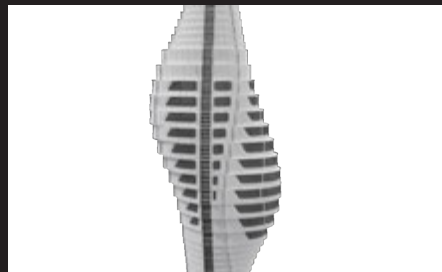
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# Talking to Machines

**The construction industry can increase productivity and quality while reducing energy consumption, lowering costs and saving time through creating strong links between designing and making.**

*By Andrew Watts FICE FIED FIET FRSA RIBA MSt(Cantab), CEO of international building engineers, Newtecnic*

Throughout history, to understand the complexities of buildings, models have always been made. For centuries, these were physical scale models that allowed a close examination of the proposed structure. More recently digital models perform the same function. These not only allow stakeholders to comprehend the project but also provide the ability to ensure that crucial decisions are based on the fullest and most detailed information available.

By committing designs and associated information and data to digitalisation it is possible to achieve total quality assurance for each component of the building, and of the entire finished entity. This occurs because, by designing and then manufacturing components digitally, any technical, structural and aesthetic issues can be resolved in advance of physical work commencing.

This is not news to engineers and architects, who are often highly digitised. But the digital chain is often broken between building designers and contractors. However, when links are strengthened through the whole supply chain, the results are spectacular.

## Leading the world from Morocco

As part of the programme of cultural development in Morocco, and inspired by the Bouregreg River, the dramatic sculptural form of the Grand Théâtre de Rabat in Morocco incorporates an 1,800-seat theatre, a 7,000-seat amphitheatre and a smaller experimental performance space. Clever use of GRC panels meant the fluid design envisaged by architect Zaha Hadid was successfully interpreted, resulting in the addition of a cultural venue of the highest standards for the capital city of Rabat. The main envelope system for the Grand Théâtre project is based on an opaque glass-fibre-reinforced concrete (GRC) rainscreen cladding, fixed to the primary structure, which is a mix of reinforced concrete and steel. The main driving parameter for the design of the GRC system was the required 60-year life-span of the envelope system. This necessitated the use of monolithic GRC panels, up to 4 by 2m in size, which did not require the conventional steel backing frame to be cast in underneath the panel. Computational Fluid Dynamics (CFD) analysis for cladding pressures was undertaken and subsequently validated by an early stage wind tunnel test. This analysis allowed the use of realistic values for wind loads, which drive stress and deflection analysis of the panels while taking into account the effects of the geometry of the building.

Structural calculations for each component were undertaken for each project-specific configuration using finite element modelling and scripting

to automate the structural analysis process for all panels. The design of the adjustable steel fixing bracket was conceived so that only one fixing type was used across the whole project, which would minimise cost. Physical tests were designed to validate a single design for the connection between GRC panels and steel fixings, which could be used safely across the entire project.

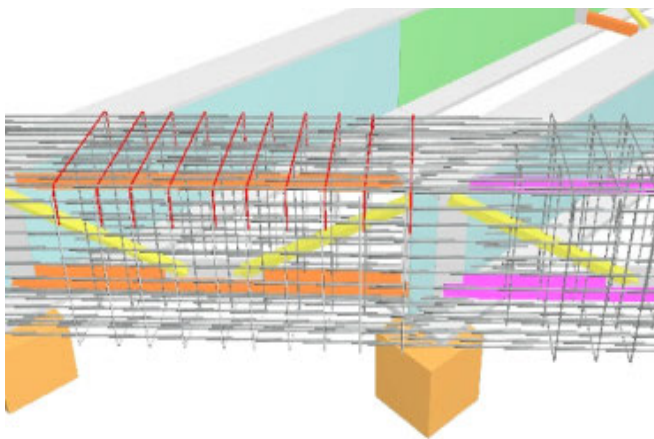
This spectacular building produced at a very low cost is an exemplar of how early stage deep analysis and thorough testing before the tender stage delivers a guaranteed result. It was important in this project to ensure that local fabricators and contractors were deployed. Digital simulation of all processes resolved any potential problems prior to physical work commencing and 3D printed GRC panels were thoroughly tested to validate computational analysis.

## Flexible Decision Making

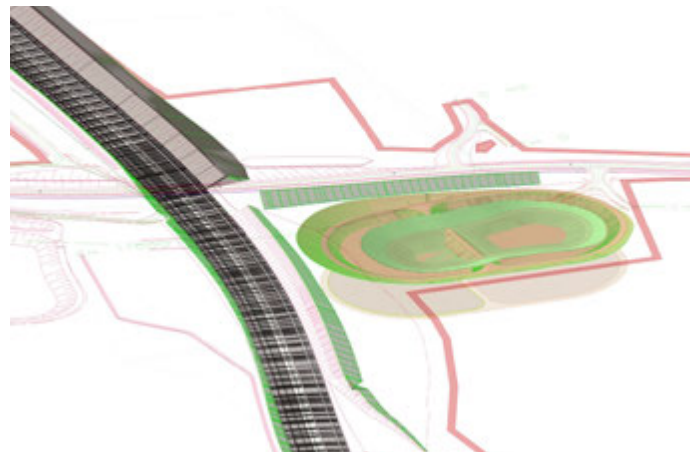
By considering and studying everything in advance of physical work it is possible to understand the true implications of project choices and decisions. Digitising projects enables flexibility because general properties can be analysed in relation to fine details. This means that decisions over materials can be made with a full understanding of their cost, aesthetics and construction technique implications.

Working this way means material parameters can be better understood and designers can go beyond simply claiming that a certain component or finish is better. They can prove it in





Reinforcement clash detection



Carriageway and earthworks modelling

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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).

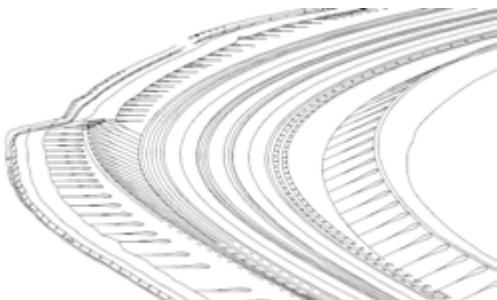
Bentley Systems, who are the current owners of MX, realised this and have completely rewritten the software using modern computer language and called the new package Openroads.

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

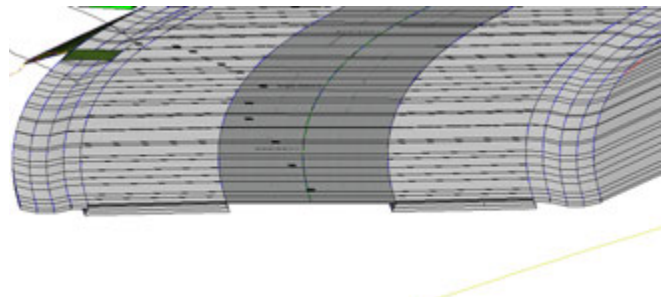
Openroads also remembers your design information and retains on the drawing for design checking purposes.

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

So, you may have designers who are very proficient in creating highway designs to DMRB standards however they need to be retrained to use the latest software and this is where we come in.

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terms of material or fabrication cost in addition to visual considerations. Using digital models to explain building techniques to contractors and work with them to develop and optimise strategies can be done at an early stage to improve outcomes. Adding these types of services to the production of buildings is new for many contractors but those that we work with discover that the application of engineering design becomes their 'service element' and allows them to present fully validated solutions to their customers. This in turn lets them win more contracts in the confidence that they can be fulfilled on time and to budget.

#### Codes

Computer code is the shorthand that delivers the robust instructions that solve complex engineering problems. Computer code also provides the living user manual to operate the building for decades to come. Every design, test and action related to a building's genesis, construction and maintenance is captured. This record becomes available to anyone who needs to engage with the project. One use of this data at the Grand Theatre de Rabat involved using a Total Station to pinpoint component locations and their fixing points with a laser. The coordinates were fed to

the Total Station from the optimised engineering design and, by following this simple guide, costly mistakes and misalignments were entirely avoided. Across the globe in Australia, the advanced structure that forms the facade of Botanica, an innovatively conceptualised residential block in northern Queensland, could have been made from either steel or concrete. By simulating the design and fabrication of both options, the cost was calculated with a high degree of precision and concrete was selected. In the past, this decision would have put more emphasis on material cost but because every aspect was considered in advance the true cost was revealed. This strategy assesses and addresses risks in new ways that seek to define all parameters so that risk can more easily be understood, calculated and managed and costs and schedules guaranteed.

#### Accelerating Productivity

Deploying these techniques means that amazing buildings can be delivered at ordinary prices. Designs can evolve smoothly to suit all parties and various design options can be considered and proven. An example of this is the KCTV Tower in Istanbul where early stage investment in design engineering

has paid a massive dividend at the current building stage. All the big decisions have been made and the building is progressing as predicted with pre-made components that are exact representations of their digital equivalents. This is very different to many projects where late stage changes contribute to dysfunctionality and defects.

#### Top ten tips for smooth building delivery:

1. Invest in early stage problem solving to avoid late stage problems
2. Use engineering as a service that seamlessly joins construction disciplines
3. Break down the barriers between thinking and doing
4. Apply rigour to design and management processes – keep looking for what's been missed
5. Use data to introduce flexibility into decision making
6. Take problem solving back to first principles – conformity is dangerous
7. Connect contractors and fabricators with designers and clients through shared data
8. Deploy technology that allows everyone to understand their project role and responsibility
9. Think about production machinery at the earliest stages of the project
10. Improve processes through learning

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It is well documented that the construction industry is currently facing an increasing skills shortage and, as a result, many businesses are feeling the pressure. Carl Ghinn looks at how artificial intelligence could provide a solution. According to the Arcadis Talent Scale, in order for the Government to meet its housing targets, the UK construction industry needs to recruit up to 400,000 people each year till 2021 with London and the South-East needing to recruit 110,000 people alone. That equates to approximately one worker every 77 seconds. However, should a hard Brexit take place, the UK could also miss out on an additional 215,000 migrant workers by 2020, making achieving these numbers seemingly impossible.

One way the industry and its suppliers are looking to work through the skills shortage is by offering time-saving solutions. For example, at Fixmart, we offer our clients a pre-assembly option where we part build products in our warehouse before they are delivered. Most recently, this has included our walkways range, which has been designed to help construction workers save vital time when it comes to assembly on site. However, the big discussion in the industry at the moment is how Artificial Intelligence (AI) can improve productivity and provide a solution to the skills shortage.

The case for machines in the workplace has been proven again and again and in many cases robots can increase efficiency and quality whilst reducing errors and waste. In fact, according to Forbes, by 2035, AI technologies have the potential to increase productivity by 40% and economic growth by 1.7% across 16 industries including construction.

As well as improved efficiencies, using AI can mean advances in health and safety, as robots and technology can be used to assess sites and complete jobs that may be too dangerous for humans. For example, researchers at Nottingham Trent University unveiled a pair of e-gloves that alert wearers when they experience vibrations that are likely to cause conditions such as carpal tunnel syndrome.

I recently read an article that backs up Forbes' claim. The article was about robots that had been programmed to lay up to six times more bricks than the average builder – 3,000 bricks a day compared to 500. On paper, that seems incredible. However, many have questioned the robot's ability to engage with obstacles such as corners or pillars. Consequently, this has highlighted other concerns workers have with the introduction of AI in the construction industry.

The first is the robot's inability to problem solve outside their programmed area and, as it is impossible to fully predict what can happen on a fast-moving construction site, the chance that every situation has been thought of is highly unlikely. This could result in mistakes, accidents and costly delays on projects. In addition, many in the industry fear that that robots will replace

skilled workers, resulting in a large number of people being out of work.

Another concern is the risk of a loss of taxation and national insurance which might potentially have a big impact on the upkeep of vital infrastructures.

Recently, construction giant Balfour Beatty published its report Innovation 2050:

A Digital Future for the Infrastructure industry. Balfour Beatty believes that by 2050, construction sites will be human-free and the only interaction will be through robotics. According to the company, the role of humans will predominantly be to oversee projects remotely, accessing 3D and 4D visuals and data from the onsite machines, ensuring the building is proceeding to specification.

The very few people with access to the site itself will wear robotically enhanced exoskeletons which will control machinery and other robots on the site. With this in mind, it is easy to see why many within the industry have considerable concerns about the future of AI in construction. However, I don't believe this prediction

is necessarily accurate. Robots were designed to aid humans in their everyday lives, not to make them obsolete. In fact, the word 'robot' comes from the Czech word *robotník*; a term used to refer to slaves. There will always be a need for humans to oversee machines. For example, the robot brick-layers I mentioned earlier require two workers full time to operate the machine, one to feed the bricks and the other to assist with laying bricks at difficult angles, smoothing over the mortar and clearing up. Therefore, instead of future construction sites being completely human free, we would need a workforce who have the skills to ensure the machines continue to run at the standard companies need to remain competitive.

To conclude, despite the benefits they may bring, I believe it will be a while before robots become a task force on the average construction site.



# The rise of Artificial Intelligence in the construction sector



## HGV taxes pay for almost all the UK's road maintenance

New independent research conducted by the Freight Transport Association has shown that HGVs pay enough tax alone to cover almost the whole of UK spending on road maintenance.

The report shows that not only do lorries more than pay for all the wear and tear effect they have on the roads, they in fact pay 94% of the UK's total spending on road maintenance. The report has found that heavy goods vehicles pay three times more in tax than the estimated cost of damage to infrastructure. Some £4.7Bn was spent by central Government, the devolved Governments and local authorities on road maintenance between 2015 and 2016. In the same period, HGV taxes (vehicle excise duty, road user levy and fuel duty) raised £4.4Bn. However, the cost estimate for infrastructure damage imposed by HGVs totalled only £1.5Bn. Overall the report shows that £33.5Bn was collected in vehicle taxes – more than seven times as high as the road maintenance budget.

FTA's Head of National and Regional Policy Christopher Snelling commented: "This report supports FTA's central points for this Budget – road freight taxes are too high and vital infrastructure spending is too low.

"Taxes on UK road freight are already the highest in Europe – any further increase would add to the cost of doing business in the UK and the cost of goods in the shops. Instead of raising duty, the Government should cut taxes on road freight to help stimulate the economy.

"The fact that HGV taxes alone almost pay for the whole of UK road maintenance also shows that Britain still does not support the quality of the roads well enough. Whether it is potholes, road closures or long-running road works, we all suffer when the roads do not work as they should. Congestion is bad for the environment as well as the economy. The UK Government should provide for more spending by Highways England and our local authorities to ensure the roads are fit for purpose."

**The full report is available at <http://www.fta.co.uk/contact/forms/hgvs-pay-their-way.html>.**

## Logistics troubled by lack of Operation Stack solution

The FTA has reacted with disappointment to the latest Government announcement linked to Operation Stack.

The Government has withdrawn its application for a parking area in Kent, to house lorries waiting for transport in Kent.

Commenting on the issue, FTA's Head of National and Regional Policy Christopher Snelling said: "Whatever the solution, everyone from the hauliers who keep Britain's supply chain working to the residents of Kent all agree that a better solution for Operation Stack is needed. That this application has to be withdrawn is a major disappointment and means a proper management of a Stack situation may be many more years off."

"DfT have said they will now look to implement an interim solution for use before any lorry area can be brought into existence. FTA will want to see that this delivers real benefits in terms of safely and hygienically accommodating lorries and their drivers who get caught up in Stack, keeping the roads safe for other users, and avoiding the need to restrict or close the motorway for non-Cross Channel traffic.

"As always with Stack, the best solution would be not to need it. But with Brexit on the horizon and all the other issues that can occur on the Dover-Calais route, we simply won't be able to guarantee that – if the solution doesn't work this could be an increasing problem for Kent in the years to come." Chris Grayling MP stated: "The impact of disruption at the Port of Dover and Eurotunnel in Kent can lead to significant congestion in that county

and further afield. In the event of such disruption, Operation Stack is deployed which queues lorries on the M20 until they can access their ferry or train, closing parts of the motorway to other traffic. However, it has been accepted that this is not an ideal contingency solution particularly given the impact it has on the M20, the surrounding roads, and in particular on people and businesses in Kent."

The plan was to develop a lorry holding park in Stanford West, to mitigate the worst impact of Operation Stack. However, following judicial review into the environmental impact of the lorry park, the Government has withdrawn its application.

The Government will continue to develop plans to create a new park, reassessing the scope, scale and location of the solutions, alongside tasking Highways England to find an interim solution.

Highways England have developed a number of options that, while continuing to hold HGVs on the M20, would allow non-port traffic to continue to travel in both directions, reducing the levels of traffic disruption seen in Operation Stack; these include holding HGVs in the centre of the motorway rather than on the coastbound carriageway while different technologies ranging from steel barriers to moveable barrier systems could be deployed to deliver these solutions. A final decision on which option to take forward will be made in early 2018, with a view to completing delivery by March 2019.





## UK heavy truck market declines

Figures released by the Society of Motor Manufacturers and Traders (SMMT) show that demand for new HGVs declined in Q3 2017, falling -5.7% on the same quarter in 2016. Some 10,597 new units were registered in the third quarter, with both rigid and artic segments seeing a decline, down -7.4% and -3.3% respectively. Over the year, figures show the market has remained steady, up 0.3% with 32,774 units registered. Demand for rigid vehicles declined -7.4% in Q3, with a -5.5% fall in the >6-16T segment and a -8.4% decrease in the >16T segment.

Meanwhile, registrations of artic vehicles also experienced a fall, down -3.3% to 4,383 units. Tractors continued to be the most popular body type for HGVs in Q3, accounting for 41.4% of the heavy goods vehicle market. Year-to-date figures show the overall market remains steady, currently up 0.3%, with 32,774 trucks featuring advanced low emission and safety technology joining British roads in 2017. Although demand for rigid vehicle registrations declined -2.4% in the first nine months, this was offset by a 4.6% rise in demand for artic trucks.

Mike Hawes, SMMT Chief Executive, said: "Fluctuating fleet orders are a natural feature of the HGV market, so this drop in demand is not altogether unexpected. However, economic and political uncertainty is undoubtedly also having an effect. It is vital that Government tackles this to give operators the confidence to invest in renewing their fleets with the latest, cleanest Euro VI vehicles – and to ensure this important sector's ongoing success."



## CPA releases new safety guidance for operators of Forward Tipping Dumpers

New operational safety guidance has been released by the Construction Plant-hire Association (CPA): 'Staying Safe When Operating Forward Tipping Dumpers'. The guidance is aimed at operators for refresher training purposes and has been commissioned following a number of recent serious incidents involving Forward Tipping Dumpers, including the overturning of dumpers and individuals being struck by dumpers. Several construction industry forum meetings have been held in recent months to specifically discuss the issues with Forward Tipping Dumpers, aimed at avoiding future incidents. The first was hosted by the CPA and the Health & Safety Executive (HSE) in October 2016 and afterwards in January 2017 at Tonic Construction. The most recent forum was jointly hosted by the CPA and the Civil Engineering Contractors Association (CECA) in Solihull this September. At this latest forum it was agreed that a total of seven principles would be used as a basis of an Action Plan relating to effective vision, machine stability, training and information, competence, travelling on spoil heaps, exclusion zones and equipment selection.

The CPA's new 'Staying Safe When Operating Forward Tipping Dumpers' guidance is divided into three comprehensive sections. Section one consists of a 'Stay Safe By' list of actions for operators; section two consists of supporting underpinning knowledge providing the 'hows and whys' of each action, and is designed to provide assistance for Toolbox Talks and one-to-one familiarisation activities; while section three is aimed at managers and supervisors in terms of planning and supervision requirements. The publication also includes a case study to aid learning based on an observed event, outlining the causes and consequences of the activity and how it can be prevented. Much of the content of section two has been supplied by the CITB from the Construction Plant Competence Scheme (CPCS) fact sheets that recheck core knowledge of cardholders on card renewal. The CPA-produced publication has been designed to support a number of existing safe operational guidance publications from the HSE including HSG 144 Safe Use of Vehicles Construction Sites. The CPA's Staying Safe guidance can be downloaded free of charge

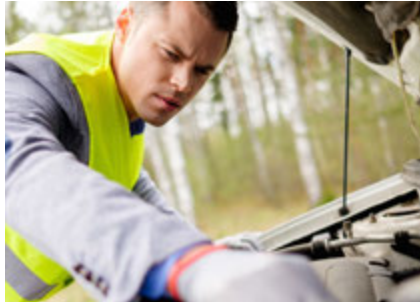
from the CPA website at: [www.cpa.uk.net/publications](http://www.cpa.uk.net/publications). Colin Wood, Chief Executive of the CPA, said: "The issue around dumper safety has become a major topic for our members as well as the industry in general. Because of this, we are co-leading the forum along with CECA and as part of our commitment, we pressed ahead to devise this operator-based safety guidance. This will go some way towards helping industry address the issues, but it is only the first step that we're taking in setting out guidance for safer dumper operations." Kevin Minton, Director of the CPA and Co-Chair of the forum, added: "We are seeking a range of solutions to ensure the operator and others stay safe. As part of the forum's action plan, the Stay Safe guidance will be the first of a number of documents that will be published through the CPA. Others will include a Good Practice Guide on Forward Tipping Dumpers which will be devised by the Strategic Forum Plant Safety Group, and an update to the Plant Safety Group's work on Ground Conditions. This update will provide guidance and recommendations for the operation of dumpers on spoil heaps."

# BRAND NEW AT SNAP: ROADSIDE ASSISTANCE PACKAGE AND ASSET FINANCE

SNAP Account is the complete solution for fleet operators and owner drivers looking for transparent control over their expenses. We provide a unique package that allows you to use your vehicle registration number in order to pay for parking, washing, the Dartford Toll and more. Your account is linked to the registration number of the vehicle/vehicles you wish to cover, and you receive a simple, itemised invoice showing where and when the charges were incurred. Streamlining haulier finances has never been easier; we charge no sign-up fee and no monthly costs, you only pay for what you use.

But that is not all that we offer; over the last couple of months, we have introduced two fantastic new services; a brand new Roadside Assistance package, as well as Asset Finance.

Our new and improved Roadside Assistance package offers drivers a simple, all-encompassing service that covers all bases in the event of an accident or breakdown. It is often difficult to remember who to call if your vehicle has a problem or is involved in a road traffic accident; with SNAP Roadside Assistance, there is just



one number you need to call to get everything sorted. We can now cover you for more issues than ever before, from recovery and roadside assistance to uninsured loss recovery and work under manufacturer's warranty. Just give us a call, explain the situation and let us do the legwork and get it all sorted, we even offer incident management services and replacement vehicles.

Repairs will only be made to the vehicle once authorisation has been given by the fleet operator, meaning there will be no surprise costs. As trucks can be on the road any time of day, any day of the year, you will be covered 24/7/365 and we pride ourselves with the speed at which our customers are seen to; 90% of vehicles are reached within 45 minutes.

We are also very excited to announce our newest service;

SNAP Asset Finance. With HGVs and trailers being such expensive core working assets, the vast majority will never be bought outright with cash. SNAP Asset Finance offers wide ranging, bespoke and competitive finance solutions for everyone; from independent owner-drivers, all the way up to large, corporate fleets.

By working with a large and diverse network of lending partners, we are able to search for the best possible deal for each customer rather than being beholden to one lender in particular and only making deals to suit them. We take a customer focused approach to deliver competitive financing, rather than a 'one size fits all' attitude. Whatever it is that your business needs to move forwards and grow, we will strive to find a way to help you to buy it; from standard HGVs and trailers to specialist vehicles and bodies, and everything in between. Additionally, we offer refinancing deals for existing assets in order to help raise cash for other business needs.

Get in touch if you have plans to purchase any working assets for your business and see what we can do for you.

Parking



Washing



Recovery



Repair



Dartford



Daily Checks



**SNAP**  
Account





# Technology allows fleet owners to identify preventable costs

**When you're in the supply and distribution business, your fleet is your business. Your vans and trucks are integral to bringing in income and keeping your customers happy.**

As such an important piece of the business, it's also one of the most expensive. But it can be less of a financial burden. From wasted fuel to unnecessary maintenance costs, inexact management of a fleet can bring a heftier price tag.

The good news is that it's easy to pry these types of costs out of hiding with fleet management software that tracks the actions of both vehicles and drivers, even in a fleet of a dozen vehicles. Feeling blindsided by "hidden" costs no longer has to be the norm for companies operating fleets. Real-time data and measurements can help fleet managers zero in on the metrics that are causing costs to rise. A better understanding of the numbers behind fleet operations is pivotal to keeping fleets running as efficiently as possible and maximising their return on investment.

Data analytics and algorithms can help companies detect and address trends

that could cause a future increase in costs. For example, the data collected by the fleet management software can help determine the most cost-effective life cycle of a vehicle.

There are four easily avoidable "hidden" costs.

## **1. Failure to adhere to the recommended preventative maintenance schedule**

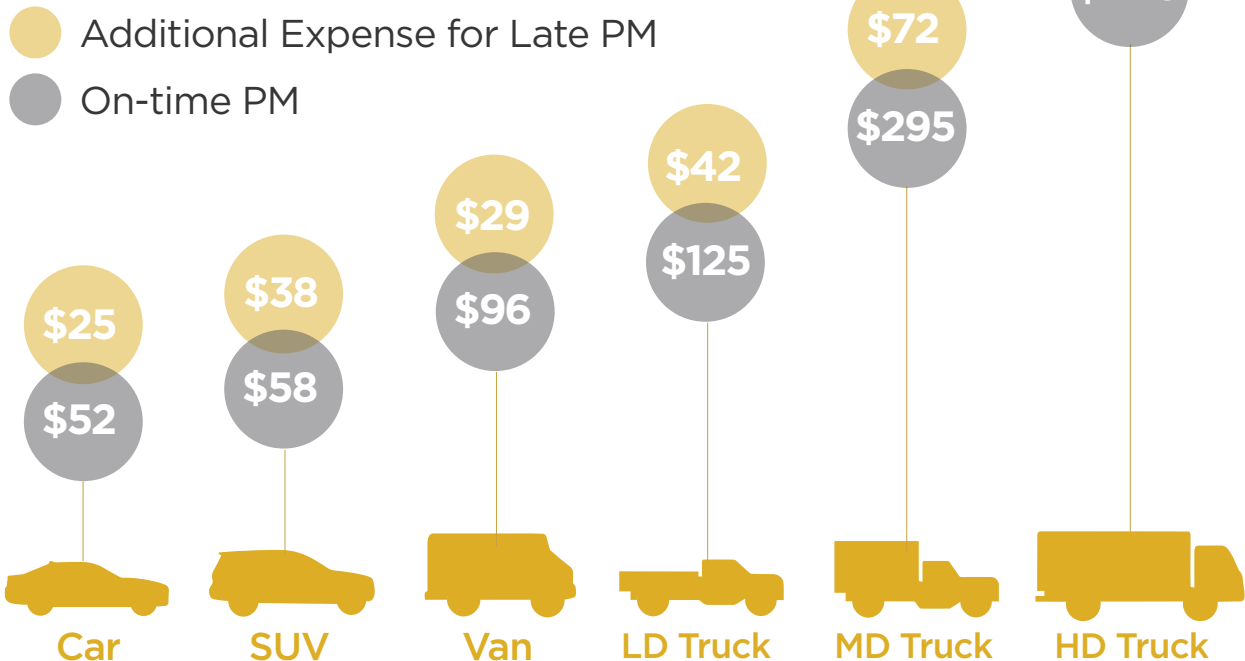
Data shows that vehicles that failed to undergo regularly scheduled maintenance incurred service costs that were 47% higher than vehicles that received their preventative services on time. In an analysis of 167,893 vehicles whose preventative maintenance was delayed, owners spent millions more than on-time maintenance would have cost. Though it seems like a cost-effective solution to go as long as possible without servicing the vehicles, skipping regular servicing causes tyre

and repair costs to be much higher than if the vehicle was serviced on time. For example, tyres wear out quicker if tyre rotations do not occur often enough. Also, periodic visits to the mechanic allow problems to be detected early before they become exacerbated, which results in substantial long-term savings. Data analytics can allow fleet managers to determine the 'sweet spot' for how often vehicles should be serviced instead of relying on the arbitrary metrics of the past.

## **2. Poor management of fuel expenditures**

Fuel costs are generally one of the significant parts of a company's overall fleet costs. In fact, fuel disbursements make up about 60% of a fleet's operating budget, which means that there is plenty of opportunity to save valuable money. It is vital that companies have strict policies

## AVERAGE MAINTENANCE \$ PER UNIT PER MONTH



regarding fuel card usage, desired grade of fuel, preferred fuel providers, and best practices to conserve fuel to prevent fuel costs from being higher than necessary. Behavioural changes by drivers that are as simple as following the speed limit can play a large role in reducing fuel costs. Fleet management software effectively monitors fuel consumption and determines which factors are causing fuel costs to rise. One company that used the fleet management software to collect and analyse data to create a fuel-usage improvement plan saved \$1M in 18 months.

### 3. Excessive idling by vehicles

Idling is not only harmful to the environment but also to a company's budget. Vehicles that idle more than necessary experience higher fuel and maintenance expenses. In just one hour, an idling engine can use more than a half-gallon of fuel and can cause the equivalent of 30 miles of engine wear and tear. Drivers who let their

vehicles idle prevent the engine from reaching its optimal cylinder pressure and temperature, causing a large amount of costly maintenance issues. Telematics and data management solutions enable fleet operators to monitor idling and identify which drivers do not practise the company's idling management policies.

### 4. Know when to sell

A common mistake made by fleet owners is a failure to grasp the importance of the remarketing stage when it comes to maximising a vehicle's return on investment. It is of the utmost importance that data and algorithms are used to determine the most strategically effective lifecycle of a vehicle. Vehicles that are operated past their useful life cost more in maintenance than they contribute to the fleet. Vehicles should be retired and sold when servicing costs and downtime start to increase but resale costs are still meaningful. Remarketing a vehicle too late in its lifecycle will

prevent it from being sold for a price that justifies the initial investment. While operating a fleet will always be an incredibly expensive venture in the construction industry, using data to analyse day-to-day operations will play a big role in maximising and maintaining profits. Fleet management no longer has to rely on using arbitrary metrics and numbers as it was done in the past.

Using real-world data allows managers to form policies and practices that are best for their business's bottom line.

**Article submitted by Don Woods, director of information technology at ARI in Mount Laurel, New Jersey, the world's largest family-owned fleet management company, managing nearly 1.5 million vehicles in North America, the UK and Europe. Data was collected in North America.**



# Alcohol and drugs – time for the industry to adopt official screening legislation?

Over recent years, alcohol and drugs misuse has been an increasing issue for the UK construction sector, with many workers reporting them as a wide-spread problem. And although many contractors and suppliers now include comprehensive screening programmes as part of their company policy, it seems that alcohol and drug impairment continue to haunt the industry.

A survey carried out last year by the Considerate Constructors Scheme revealed that despite 35% of people saying they had noticed colleagues under the influence of drugs and alcohol during working hours, 65% said that they had never been screened or tested for either by their employer. In August, eight people were killed on the M1 in an incident involving a minibus and two lorries. One of the lorry drivers – Ryszard Masierak, who was operating a truck for a major supplier – faces trial for a string of offences including causing death by careless driving while over the prescribed alcohol limit. And although it is not compulsory for the construction industry to screen for alcohol or drugs, lawfully the driver's employer could still be held accountable.

So what is the law for drugs and alcohol testing in the workplace? While drugs and alcohol testing are legislated for in certain sectors, such as the aviation, rail and shipping industries, there is no legal obligation for the construction industry to adopt any specific testing policies. However, employers do have a duty of care to maintain a safe working environment under the provisions of the Health and Safety at Work Act. If methods for detecting misuse are not implemented and an accident occurs, it's employers who could face hefty fines or even be prosecuted.

Last month, Renault Trucks announced it was partnering with AlcoDigital –

which provides professional alcohol and drugs screening equipment and training to the construction industry – to include Draeger Interlock 7000 alcohol safety devices as an option on Renault's latest range of LCV Master business fleet vehicles.

The safety devices, which will be fitted to the vehicles as an added extra at the customer's request, will monitor drivers by requiring them to pass a breathalyzer test before they can start the engine. If the driver fails the test, the interlock will automatically disable the vehicle for a pre-specified amount of time set by the company. The device can then request further tests throughout the journey. Suzannah Robin, who has been an alcohol and drugs safety expert at AlcoDigital for over 14 years, said: "As many as 6,500 deaths could be prevented annually if drink driving was eliminated in Europe. Several studies have already shown that an alcohol interlock fitted to a vehicle, where a driver has to pass a breath test prior to being allowed to start the engine, has been very effective in cutting repeat drink driving offences."

While interlocks are a great preventative measure for drink drivers on the road, they are also extremely versatile and can be utilised on site machinery. For example, in forklift trucks or cranes. Another form of interlock device, which requires no mouthpiece, can also be fitted to unsupervised turnstiles, electric gates, and other barrier systems – working 24/7 to prevent anyone impaired by alcohol from entering site. Alongside interlock devices, professional breathalysers are also key for preventing alcohol misuse across the trade. For example, a handheld screener that requires no mouthpiece and provides results in seconds is ideal for checking individuals for alcohol at manned entrances.

If a worker is found to have alcohol in their system, a further test from a Home Office approved breathalyser should be carried out to verify the results. Thus ensuring that certified information can be provided in the event it is required for legal reasons.

Meanwhile, impairment from drugs – both illegal narcotics and prescription medication – also needs to be addressed by the industry.

According to a survey carried out in 2015 on employees from a range of sectors, including construction, nearly a third of them admitted to using drugs at work. A significant number of them claimed to be 'under the influence' every working day. In fact, many of those admitting to taking drugs were using cannabis or other illegal narcotics. Suzannah added: "As a minimum, the industry should be aiming to test 100% of their workforce every 12 months for drugs. A pre-employment test would also be highly valuable for setting in place the expectations for new staff joining the company. The policies and testing methods used subsequently would then depend on the company's day-to-day business activities, but can be implemented at a very low cost. Certainly anyone employing commercial drivers, or operating heavy machinery, should have a regular drugs and alcohol testing policy in place." Over the last decade, huge progress has been made in terms of tackling illegal drug use and alcohol abuse in the workplace.

Now it's time for the construction industry to address the issues head-on and direct their attention towards putting in place policies and practices to make drug and alcohol screening compulsory across the industry.



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# Building Safety Group reports 13% increase in LOLER non-compliances

The Building Safety Group (BSG), has reported a 13% increase in the number of LOLER Regulation non-compliances recorded during site inspections. The increase is based on approximately 10,000 independent inspections conducted in the construction industry which covers the first six months of 2017. The percentage increase of 13% is comparing the second quarter 2017 to the first quarter 2017. The Lifting Operations Lifting Equipment Regulations 1998 (LOLER) are set of regulations created under the Health and Safety at Work etc. Act 1974 which came into force in Great Britain on 5th December 1998 and replaced a number of other pieces of legislation which covered the use of lifting equipment.

LOLER (the Lifting Operations and Lifting Equipment Regulations) apply to any lifting equipment used at work - including employees' own lifting equipment - for lifting or lowering loads, including attachments used for anchoring, fixing or supporting it. However, the Regulations do not extend to fixed anchor points that form part of a building or structure.

LOLER covers a wide range of equipment, including:

- cranes
  - fork-lift trucks
  - lifts
  - hoists
  - mobile elevating work platforms
  - vehicle inspection platform hoists
- The Regulations also include lifting accessories, such as chains, slings, eyebolts etc. LOLER does not apply to escalators, which are covered by the Workplace (Health, Safety and Welfare) Regulations. Machinery and accessories for lifting loads must be clearly marked to indicate their safe working loads (SWL). Where the SWL depends on the configuration of the machinery for lifting loads, the machinery must be marked to indicate its SWL for each configuration, or provided with such information which is kept with the machinery. On chain and wire slings, the SWL should be marked legibly and indelibly on a durable tag or label attached to the sling; or marked on the ferrule or master link.

Where it may not be possible for the marking to show the SWL, there are other ways of 'indicating' the safe working criteria for the equipment. In some cases, a 'surrogate' marking may be acceptable, such as a capacity indicator on an excavator. However, colour coding alone to denote SWL is not normally acceptable, but can be a useful additional feature (eg of textile slings) and may be a key element in

the marking of some equipment, such as access and rescue ropes.

Individual lifting accessories forming part of a specific item of lifting equipment (that is not disassembled after use and so remains part of that equipment), do not need to be marked.

However, the lifting equipment must be marked with a SWL rating that is suitable for all items in its assembly. Further information is given in: Safe use of lifting equipment. ACOP and Guidance (see regulation 7 and paragraph 186 onwards).

Two South West based companies were fined in June after a 44-year old woman was struck by scaffolding. Weymouth Magistrates' Court heard how employees of Carter Training Ltd were using a mobile crane on the building project in Queen Mothers Square, Poundbury, Dorchester when the attachment holding 500 scaffolding fittings weighing 2kg each was turned on its side emptying all contents onto workers and the concrete flooring 10.5m below. The worker suffered two fractures to her left shoulder blade, a fracture to her left collar bone, a cut to the back of her head and bruising. An investigation by the Health and Safety Executive (HSE) found the stillage attachment used on the crane was not suitable for lifting heavy and large amounts of scaffolding.

Lifting the scaffolding directly above a number of contractors working below also put them at risk of harm.

It was also found that principal contractor Zero C Holdings failed to carry out an audit of all lifting plans and as a result failed to manage the risks associated with this lifting activity. Zero C Holdings did not have clear lines of communication between the lifting company Carter Training Ltd and contractors working on the site below. Zero C Holdings Limited of Armitage House, Poundbury, Dorchester has pleaded guilty to breaching Regulation 13 (1) of the Construction (Design and Management) Regulations 2015 and has been fined £145,000 and ordered to pay costs of £3500.

Carter Training (services) Ltd of Budleigh Hill, East Budleigh, Devon has pleaded guilty to breaching Regulation 8 (1) Lifting Operations and Lifting Equipment Regulations 1998, and has been fined £18,000 and ordered to pay costs of £3500. Speaking after the hearing HSE inspector Nicole Buchanan said: "The worker is very lucky that her injuries were not life threatening. Both Zero C Holdings and Carter Training put a number of workers at risk of harm when they failed to plan or

identify the risks of heavy lifting.

"This case highlights the need for duty holders to properly plan all lifting operations before work is carried out to manage the risk of injury to workers. Lifting directly above workers is inherently unsafe and should be avoided wherever possible".

Chris Chapman, Technical Support Manager for the BSG (Building Safety Group), the UK's largest construction safety group comments: "The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) require all lifting operations to be properly planned by a competent person, appropriately supervised and carried out safely. Any equipment used must be properly designed, manufactured, tested and well maintained. Any lifting equipment must be sufficiently strong, stable and suitable for the proposed use. Similarly, the load and anything attached (eg timber pallets, lifting points) must be suitable and positioned or installed to prevent the risk of injury from the equipment or the load falling and striking people. It should be visibly marked with any appropriate information to be taken into account for its safe use, eg safe working loads. Accessories, eg slings, clamps etc, should be similarly marked.

So the questions that need answering when planning a lift are:

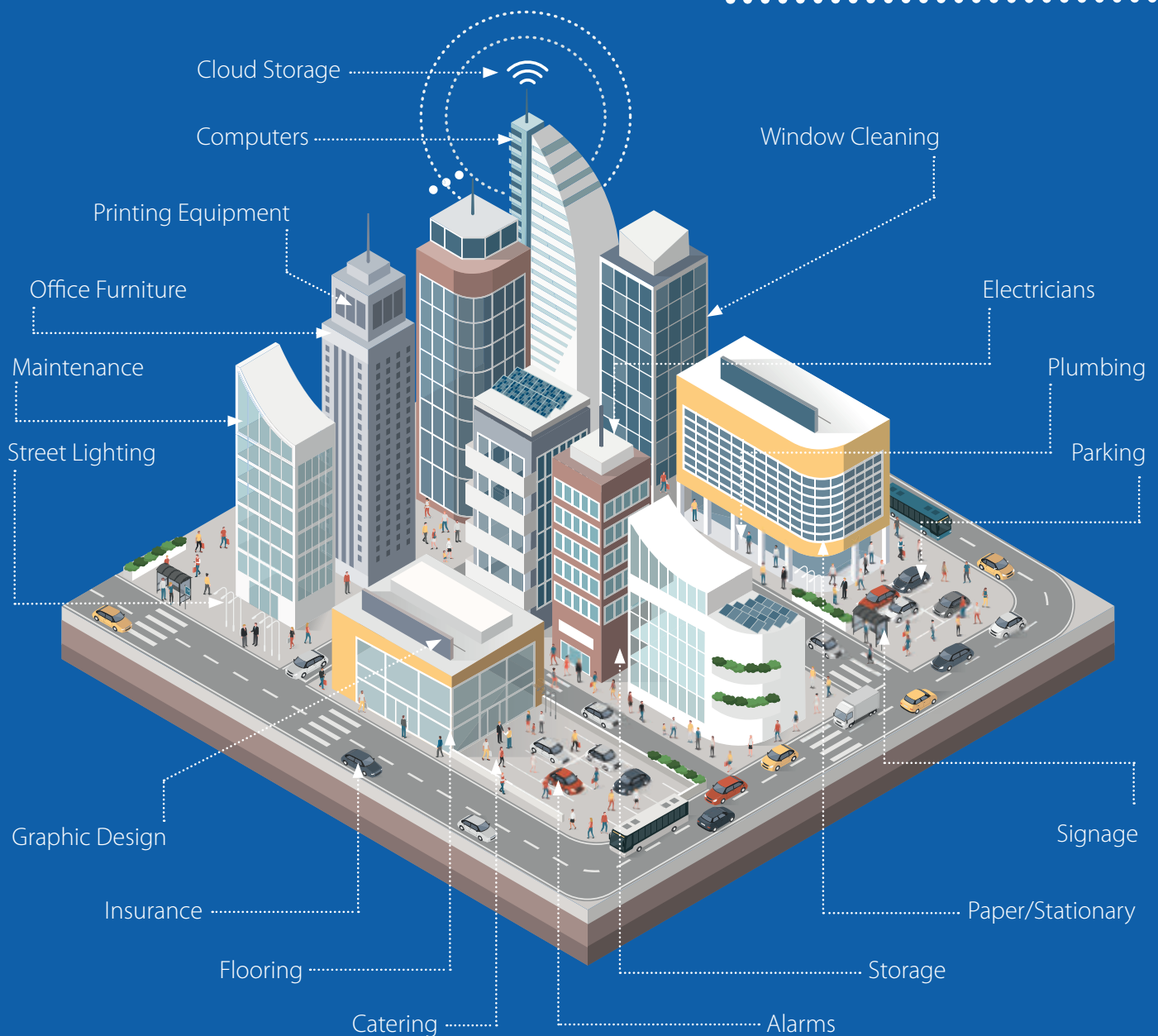
- What are we lifting?
- How heavy is it?
- Does it have designated lifting points?
- What accessories will be needed?
- Where is it being lifted from?
- Where is it being lifted to?
- Is the ground capable of supporting the lifting equipment?
- Are there any overhead obstructions?
- What will the suspended load be traversed over? (Set up signs and barriers and position people at key points if they are needed to keep other people out of the area of operations)".

The Building Safety Group are aiming to bring the discussion of health and safety in the construction industry to the top of the agenda by working in partnership with construction firms to help them better manage all aspects of health and safety in the workplace.

BSG's latest non-compliance statistics have been generated from the organisation's 'Non-Compliance Reporting Index (NCRI) and relates to the period covering the first six months of 2017. For more information about how to reduce the risk of non-compliances, please visit the BSG website.

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## Careers advice exacerbates skills shortage

Against a backdrop of a construction skills shortage, anxiety over EU workers following Brexit and declining GCSE results, a new report commissioned by construction and services giant Kier shows that parents have significant concerns about the quality of careers advice on offer to secondary school pupils.

Construction has long admitted it has an image problem, and attracting new recruits into the sector has been a struggle. The shortage of electricians, plumbers, plasterers and bricklayers has been noted for some time, yet the survey shows that children are not aware of the breadth and scope of career opportunities in the sector. Some 74% of respondents felt that careers advice is too focused on academic pathways, with 68% of parents believing that children do not receive enough advice. The report points to a need for business and Government to do more to improve out of date advice.

In order for the Government to achieve its ambitious housing and infrastructure plans, it is estimated that the industry needs 400,000 new recruits per annum. This is not just about improving image, but averting a £90Bn UK GDP crisis.

The survey of 2,000 secondary school teachers, parents and careers advisors was undertaken to assess perceptions of careers advice and career options for school leavers, and specifically to gauge their understanding of construction and the built environment.

It identified that 90% of teachers across the UK are unaware of the scale of the recruitment shortfall in the construction sector, with 41% not realising there is an issue at all. 54% of teachers and parents believe there is a lack of career progression in construction/the built environment, and associate the industry with being muddy, manual, male dominated and low paid thanks to outdated perceptions. This is despite the fact that the industry provides a wealth of opportunity across all skillsets and is actively encouraging gender diversity.

The report found that over half of pupils (65%) aged 11-13 get no official advice and only a quarter of 13-15 year olds (27%) got

‘one hour, once’ of careers advice.

Holly Gordon, Operational Team Leader at Kier, spoke about the lack of advice and how she came to the industry: “The problem I had was that we didn’t have a careers advisor at my school, so I wasn’t sure what I wanted to do, or where to start. “In the end, I decided to take Business Studies as a GCSE, as I thought it was quite a general subject, meaning it would be open enough to allow me to choose other options after I left school.

“However, when it came to going to college, I still didn’t know what it was I wanted to do, or what A Level subjects I wanted to take. In the end, I spoke with my dad and he got me a job in administration at his friend’s solicitors – which led me to study law at college. Initially, I thought that this was the career path I wanted to pursue; however, after three months studying, and working at the solicitors, I soon realised it just wasn’t for me. It was from this experience that I decided I wanted to do something that was more hands-on.

“The big change came for me during my last law exam, when the college careers advisor came in and announced that there was an opportunity at Kier to work in construction. It was an apprenticeship and they were going to pay for a degree, as well as provide on the job training. It sounded like exactly the kind of thing I was looking for, so I went home and did a lot of googling around Kier and found it quite exciting – the thought of working in construction was something really different for me, particularly as not many women were in the industry at that time. I ended up going for the interview and getting the job, and that’s where it all began. Now, as an Operational Team Leader at Kier I am onsite regularly and have a role in site management – which is perfect for me as it means I get to be hands-on and active.” With many parents and students baulking at the rises in university tuition fees, more needs to be said of corporate scholarship. 81% of parents were unaware that major FTSE companies can pay the cost of a degree course and offer a guaranteed entry point into work upon completion of studies.

Kier will also support the Career Ambassadors work with schools and colleges over the next 12 months, with the backing of the Institute of Directors (IoD) and the Careers & Enterprise Company. The scheme will engage with at least 10,000 school pupils, to inform and inspire the next generation. Haydn Mursell, Chief Executive of Kier, said: “With an ageing workforce, uncertainty around Brexit and an ambitious pipeline of construction, housing and wider infrastructure projects, which equates to £90Bn of UK GDP delivery and creates a demand for circa 400,000 new recruits per annum, it is imperative that we attract new talent into our industry.

“We have invested in comprehensive resource to train and develop new talent, we offer a vast array of roles, great scope and support for diversity and career progression, and we offer the chance to leave a lasting legacy and make a real contribution to local communities, as well as UK GDP. But we also have an image crisis, based on out of date perceptions and advice. We cannot leave this to schools, councils or the Government alone to resolve. Business is best placed to explain itself, its employment offering and its skills and training needs.

“For this reason we are pledging a minimum of 1% of our workforce as Career Ambassadors to work with schools and colleges across the UK, to engage with at least 10,000 pupils over the next 12 months.

“If every company in the FTSE 250 and FTSE 100 followed the 1% pledge as part of their commitment to employment and skills, we could create a powerful network of real world advisors, to inform and inspire the next generation.” Kier would welcome the Government using its upcoming Careers Strategy to take further steps to improve careers advice and increase opportunities for collaboration between the public and private sector, following the success of the Careers & Enterprise Company, which brokers this kind of collaboration.



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## Fall protection and CDM – the vital questions you need to ask

### ‘Don’t make CDM a tick-box exercise’ urges fall protection expert

MSA Safety is urging all principal designers, as defined by the Construction Design and Management (CDM) regulations, to ask every time they specify fall protection: ‘Has the fall protection I have specified been tested on the same type of roof to the one it will be fixed to?’ and ‘Is the standard of protection you have specified actually the product installed on the structure?’

The CDM regulations, last updated in 2015, require a health and safety plan to be incorporated at the very outset of any construction works; but, says Tim Bissett, Technical Manager for the Latchways® brand at MSA, many principal designers specify in good faith without knowing the risks that exist. “These days there are many different types of roof used in construction – not all designers use a concrete roof but that is the only material that fall protection anchors need to work on to meet current standards. What about secret fix roofs? Standing seam roofs? Warm flatroofs? All these perform very differently to concrete when a force is exerted upon them.” Tim continues: “Working in fall protection

we all have a huge and collective responsibility to protect people working at height and I would ask everyone involved to ask two simple and related questions before specifying a fall protection solution. Firstly: Has the fall protection system been directly tested on the structure type it will be attached onto? Secondly: Have you ensured that the quality of the fall protection system you have specified is, in fact, the exact same as the system that will actually be installed?

“It may sound a given, but many contractors – in good faith – think they are substituting like for like, but actually that pivotal question of suitability for use on a specific roofing system is key and one of the main reasons that the MSA Latchways team tests on every type of popular roof type in use. If the equipment you have specified is changed without your knowledge, you could be held legally liable in the unfortunate event of an accident. It’s also the reason why our Constant Force Post system is virtually the only system that supports the warranty from roofing

manufacturers such as Tata Steel, Kalzip, Protan and Icopal.”

Introduced in 2001, the MSA Latchways Constant Force® Post is a roof-anchor system designed for both fall arrest and fall restraint. Uniquely, it has an integral energy-absorbing coil that, in the event of a fall, deploys in a controlled manner to absorb the force generated. In doing so it ensures that the load exerted on the point of attachment will not exceed 10kN and so allows the post to be fixed to a relatively delicate structure without the additional requirement to attach to structural steel or purlins. This ensures the roof or structure remains intact and workers are kept safe even in the event of a fall.

“As an industry there is a responsibility to ensure we are advising and educating architects, contractors and specifiers to see their specification through, which means bringing thinking to CDM and lifting fall protection up from being simply a tick-box item – it’s far too important for that.”

# Ensure your construction site is fire-safe

Construction sites are a dangerous environment to be in for a multitude of reasons, which is why everything needs to be done to limit the chances of anyone coming to harm.

A fire could break out on any construction site. There are a huge variety of combustible materials lying around, and just as many possible sources of ignition. And just because it's a small construction site doesn't mean the risks are in any way reduced.

In reality, construction fires account for a small proportion of fires in the UK. But they are often disproportionately large, cause an extensive amount of damage, and present a real risk to life.

In many cases, a few simple measures are all it would take to prevent a fire from starting and spreading.

By being aware of the hazards, you can reduce the risk of a catastrophic site fire, protecting lives and jobs.

A fire risk assessment is likely to be one of many the site manager must complete and keep on top of. It is a requirement of legislation for the responsible person (employer or persons in charge) to ensure a suitable and sufficient fire risk assessment is complete.

## Spot the Hazards

A fire needs three elements to burn: oxygen, heat and fuel.

Removing one or more of those elements stops a fire from starting, and will also mean a fire cannot continue to burn.

The first job of a fire risk assessment is to identify these potential sources of ignition and fuel and then reduce their potential to cause harm.

Equipment, machinery, electrical installations, hot work, bonfires, smoking and arson are all potential ways in which a fire could start. Precautions need to be put in place, with rules strictly followed and all equipment correctly maintained.

The equipment then needs to be kept away from combustible materials. This may include rubbish, coverings and sheeting, LPG, flammable liquids, and storage areas. Even building materials, such as timber, insulation, adhesives, and furnishings, need to be considered throughout the project. The list of hazards will be unique to every site, and should all be considered when choosing building supplies, planning the project schedule, and controlling work activities.

## Who's at Risk?

When answering this question, it's important to consider everyone who could be on site, at any time of the day.

It will include your workers, contractors, subcontractors, visitors, and even overnight security staff.

Even those in adjacent properties, or people passing by would be affected by a fire on your site.

You'll need to put in place provisions for those who are likely to need help escaping a fire. Those with a disability or with mobility impairment are going to need extra help getting to safety quickly.

## Evaluate and Act

Now you know in detail what you're dealing with, you're able to take the relevant action in limiting the risks and providing the appropriate precautions.

For instance, you may want to restrict onsite hot work as much as possible by replacing it with other means of construction, or carrying it out offsite unless it's unavoidable.

However, you can control the risks by using hot work permits to ensure it's carried out in line with site procedures.

You can reduce the risk of arson by preventing easy access, ensuring skips are located well away from buildings, and securely storing equipment and materials which are not in use.

And when you have flammable liquids, make sure they're kept in appropriate canisters and containers, and even consider locking them in specifically designed cabinets.

## Make Sure You're Prepared

As well as preventing fires, you also need to prepare in case a fire starts on your site.

It's important to have a method of raising the alarm quickly when a fire's discovered. The type of alarm needed can range from someone simply shouting 'FIRE!' to an automatic series of alarms.

In a very small site, it's likely that a shouted warning will suffice, with manual bells, klaxons, and air horns also sufficient in a small- to medium-sized construction site. However, for a larger site, then it may be worth investing in a series of interconnected site alarms with call points. It is vital to have fire extinguishers on site too, although what you specifically need will vary.

On a small, low-risk site, then a single multi-purpose extinguisher may be all you need, whereas on a larger, high-risk site, you will need extinguishers to accompany specific risks, such as hot works. You then need to locate these strategically around the site so anyone can quickly and easily grab one. You may even find that for complex risks you'll also need some form of fixed fire extinguishing equipment.

Carrying out a fire risk assessment is the best way of knowing which fire extinguishers are appropriate for your site. Once you've identified the hazards, you can then match them with the correct fire extinguisher.

It's vitally important that you choose the right one. An inappropriate extinguisher could result in someone making the situation worse and putting their own life at risk.

## Record, Plan and Train

Creating a fire action plan is the next step.

This would include where the assembly point is, who calls the fire service, and who the trained fire wardens are. It's then important to make sure everyone on site is aware of the plan so they know exactly what to do in an emergency.

To help you keep on top of fire safety on site, and to assist with evacuations, fire wardens are workers whom you trust to remain calm in an emergency situation.

Having received additional fire safety training, they will help an evacuation to run as smoothly as possible.

With a plan in place, it is also helpful to carry out fire drills. This gives you the opportunity to safely see how your emergency plan works in action.

That then gives you the chance to make any necessary alterations to the plan before you, and everyone on the site, depends on it to work flawlessly.

However, it also helps workers to familiarise themselves with the plan, so that they can act appropriately and calmly should they need to use it for real.

## Review

A fire risk assessment is not a one-time activity, and must be reviewed regularly, and when required. Any change to the site or operating procedures could affect the level of risk. Even though small changes may not have an impact, a number of changes together can have a cumulative and significant effect.

Therefore, it is good practice to review fire risk assessments at least once a year. Many fire services also recommend this. No two sites are going to be the same, so it's impossible to provide a straightforward list of what you need to do.

Construction sites are some of the most dangerous working environments around, but when a site is correctly managed, there is nothing to worry about.

To find out more information about fire risk assessments and fire safety equipment for construction sites, visit: [www.fireprotectiononline.co.uk/site-safety](http://www.fireprotectiononline.co.uk/site-safety).



# How to combat sales competition in the construction sector

The UK's building and construction sector is facing trying times. Thanks to ongoing economic uncertainty, investment confidence is at a low. Major commercial projects have been postponed or cancelled, and growth has stagnated. This is not good news for the economy at large, or for any of the businesses operating in the supply chain.

Undoubtedly, this sector slump will have a strong impact on the sales performance of those companies that supply materials and equipment to construction firms. Competition will heat up and the pressure to outperform rival companies will become immense. Smaller suppliers will feel the bite more than their larger competitors.

Bigger businesses are typically able to undercut on price, flood the market with a multitude of product lines and invest more in new technology.

As a result, smaller companies risk being completely shut out when it comes to achieving market share. They face three seemingly insurmountable roadblocks: price, commoditisation and admin. Fortunately, there are ways in which they can overcome all three and, in the process, become more nimble and competitive.

## Avoid discounting

As production processes have simultaneously become more advanced and more cost-efficient, more companies have become able to manufacture large numbers of products. This has flooded the construction sector with affordable tools and equipment. However, with increased availability comes commoditisation. Key markets like construction materials and equipment, as well as consumer electronics and automotive, have been hugely affected and now, it's very difficult to tell the difference between similar product lines.

With more companies producing more or less the same products, buyers are spoiled for choice. The consumer's ability to perceive notable differences between the product lines offered by different suppliers has steadily diminished. And, when one supplier's cement mixer, for example, offers the same features and benefits as another's, the final purchasing decision often comes down to price.

This has led to an unhealthy tendency towards discounting. It's a common response to commoditisation – and, while effective in the short run, it can damage a business irreparably over time. Discounting secures quick and easy sales, and gives the sales ledger a nice spike in revenue. However, consistently undercutting

competitors on price won't encourage your customers to stick around and spend more with you. The more they become known as a 'bargain brand' that only attracts one-off customers looking for a cheap deal.

To avoid discounting, companies need to ensure that no single person or team within a company has sole control over pricing. Individual agendas can push product prices up or down beyond the market norm. Suppliers need to make sure that the price of their products is determined by their customers' needs and interests – not the sales or financial director's business agenda.

Price cutting should always be the last resort. If your product line doesn't stand out in the crowd, you should first consider other tactics like improving convenience and personalisation to influence a purchasing decision. To do this effectively, you should consider putting more effort into getting to know your customers better. Being able to offer superior convenience and personalisation requires identifying and pursuing bespoke cross- and up-selling opportunities. Customers will often look at the whole package. If they are offered a great deal on a well-timed bundle of relevant goods – they are less likely to make a purchasing decision based on cost alone.

## Add value

In the fight for market share, commoditisation is an increasingly tough opponent. The good news is that there are ways to combat its negative effects. Differentiation, for example, is a powerful tactic that can help businesses push back. At its most simple, it means selling products that are unlike any others on the market. Unfortunately, for suppliers in the construction sector, this is no easy feat. Some suppliers may consider diversification and invest in new product lines, or work with manufacturers to design modifications to existing equipment. While upgrades are important to keep goods relevant to customer needs, diversification involves a significant amount of risk and resources. However, it's an expensive way to differentiate products, and smaller companies may not have the budget. Differentiation can also refer to adding value for customers over and above the product. Even suppliers without huge resources can look at bundling value-added services into product deals. This could be something as simple as offering free delivery, or something more product specific like consultancy, stock

management, and training services. Going above and beyond will pay off in the long-run. Customers almost always come back to the company that makes them feel most valued.

## Automate admin

Running a business smoothly involves a considerable amount of admin. It's a necessary evil that simply has to be done. However, when the volume of admin is so great that it ties salespeople to their desks and prevents them from seeing to their customers, there's a problem. On a typical day, a salesperson has to create reports, update spreadsheets and prepare for meetings. These tasks shouldn't restrict and distract salespeople from their core responsibilities: winning new business and growing existing relationships. The problem lies in outdated and manual processes. Too many suppliers lack access to new technologies and still use slow and inefficient methods to manage their admin. Smaller companies need to update their systems and processes. Software with automation capabilities can boost efficiencies and liberate their salespeople from deskbound admin. Mobile apps enable salespeople to tap into critical information from anywhere and at any time, and data analytics helps them understand customers' needs better. This combination of insights and agility will help these companies dominate market share. To overcome any reluctance to adopting new technologies, suppliers need to change their mindsets. They need to realise that many types of sophisticated software, such as customer relationship management (CRM), business intelligence (BI) and Enterprise Resource Planning (ERP), are redefining how companies do business. Traditional suppliers that wish to withstand the current problems in the construction sector, need to move with the times.

**Article submitted by** By Paul Black, CEO, sales-i.



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## ***WHAT DOES THE CONSTRUCTION INDUSTRY NEED TO KNOW ABOUT YOUR ORGANISATION?***

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