2018 PREVIEW

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HOUSING
Will the chancellor's budget give house building a muchneeded boost?
page 16-17

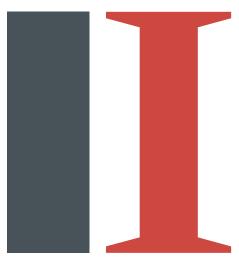




INFRASTRUCTURE Intelligence

Produced for the industry by the Association for Consultancy and Engineering





INFRASTRUCTURE Intelligence

Produced for the industry by the Association for Consultancy and Engineering Infrastructure Intelligence 12 Caxton St, London SWIH OQL T: 020 7222 6557 www.infrastructure-intelligence.com

Editor: Andy Walker 07791 997602 awalker@infrastructure-intelligence.com

Associate editor: Jon Masters 07944 642455 jmasters@infrastructure-intelligence.com

Reporter: Ryan Tute 07843 055210 rtute@infrastructure-intelligence.com

Commercial Director: Brian Nolk 020 7227 1882 bnolk@acenet.co.uk

Design and production: Andy Smith & Denise Bell 07968 588729 info@smithplusbell.com

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Printer: CPG, 9-10 Orchard Business Centre, Sanderson Way, Tonbridge, Kent TN9 1QG. T 01732 366666, enquiries@cpg-net.co.uk

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MESSAGE FROM THE EDITOR

In my editor's message this time last year, I said we'd be holding onto our hats as the industry grappled with a shedload of issues in 2017. Well, in 2018, that shed appears to have become somewhat larger with even more issues for the industry to deal with, in both the business and political arena.

The resignation of Andrew Adonis as chair of the National Infrastructure Commission (p3) presents the government with a challenge early in the New Year and they will have to move swiftly as well as knowledgeably to get the right replacement in place to maintain confidence in the sector and the UK's infrastructure plans going forward.

Our industry should, however, continue to take heart from the fact that infrastructure is increasingly being seen by the government as a key driver of economic prosperity and this fact should ensure that the sector remains high in the headlines as well as in the thoughts of politicians across the political spectrum. With profile comes scrutiny and responsibility and 2018 needs to be a year when the industry takes meaningful steps to improve its productivity to justify the faith being shown in it.

This issue of the magazine includes a look at the prospects for the industry for 2018 (p4-5), the need for the public to be more involved in infrastructure planning (p8-9), Network Rail's use of new technology (p14-15), smart cities and transport (p20-21) and we ask whether the chancellor's 2017 budget will give a much-needed boost to house building (p16-17).

New ACE chair Mathew Riley waxes lyrical on the aforementioned industry productivity issue (p22-23) and we also report on a stunning new campaign to attract more women into engineering in an issue that is packed full of other interesting news and features from the world of infrastructure.

Enjoy the read – and do keep sending us your feedback.



Andy Walker, editor, Infrastructure Intelligence

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Adonis quits as chair of National Infrastructure Commission

Tust when you thought that 2017 couldn't get any more interesting for the infrastructure sector, the year ended with the shock news that Lord Adonis had resigned as chair of the National Infrastructure Commission. He didn't go quietly either, accusing the government of "having no credible plan for the future of British trade and European co-operation" and slating the prime minister for becoming the voice of UKIP over Brexit.

In a strongly worded resignation letter Adonis accused Theresa May of pursuing policies that "would leave Britain in splendid isolation". Speaking to the BBC following his resignation, Adonis said: "My differences with the government had become too great, not only on Brexit, which I think is being handled very badly ... but increasingly Brexit is infecting the whole conduct of Whitehall. We're seeing that including in infrastructure itself."

He said that the final straw for him was transport secretary Chris Grayling's decision to end the East Coast rail franchise early, a decision that Adonis claimed amounted to a taxpayer bailout of billions. Calling Grayling's decision "indefensible", Adonis claimed that it benefitted only the billionaire owners of rail companies and their shareholders, "while pushing rail fares still higher and threatening national infrastructure investment. It is even more inexcusable given the Brexit squeeze on public spending," he said.

As a former labour minister and arch remainer, it is perhaps not surprising that Adonis has attacked the government in the way he has, but it shouldn't be forgotten that his initial appointment as the government's infrastructure tsar was hailed as a model of bi-partisan cooperation. Adonis's resignation has certainly raised some questions over the future of the National Infrastructure Commission and the government will have to think very carefully over who will replace him.

On his departure, Adonis was careful to praise the good work that the NIC had done over the past 27 months and singled out NIC deputy chair Sir John Armitt and chief executive Phil Graham for special mention. He also mentioned the commission's plans for equipping the UK with world-class 4G and 5G mobile systems; for Crossrail 2 in London and HS3



Lord Adonis's decision to resign as chair of the National Infrastructure Commission, citing concerns over Brexit and infrastructure policy, poses yet more challenges for the government, writes *Andy Walker*.

to link the Northern cities; and for transformational housing growth in the Oxford-Milton Keynes-Cambridge corridor.

Adonis added that at he hoped to see those plans implemented without delay, however he revealed that his work at the commission had become increasingly clouded by disagreement with the government and that he had decided to resign "because of fundamental differences, on infrastructure and beyond, which simply cannot be bridged," he said.

Commenting on Adonis's departure, chief executive of the Association for Consultancy and Engineering (ACE), Nelson Ogunshakin, said: "Throughout his career Lord Adonis has served infrastructure well, yet he can be especially proud of what he achieved as chair of the

"We now urgently need to secure a credible individual to step up as chair to maintain the

commission's momentum."

Nelson Ogunshakin, ACE

National Infrastructure Commission where he was a champion for our industry at the heart of government.

"We now urgently need to secure a credible individual, such as current deputy Sir John Armitt, to step up as chair to maintain the commission's momentum and its vital role in reminding ministers and civil servants, who may be distracted by issues surrounding Brexit, of the long-term importance of infrastructure investment to the economy and society."

The major infrastructure projects that Adonis and the NIC championed are still likely to go ahead without his chairmanship, not least because his approach is one that is shared by the chancellor, who sees investment in infrastructure as key in offsetting the impact of Brexit on the economy. However, Theresa May will want to appoint a replacement at the earliest opportunity to ensure that confidence in the infrastructure sector is maintained.

Getting someone in to chair the body overseeing the nation's infrastructure plans is perhaps not what the prime minister saw as one of her early priorities for 2018. However, a priority it most certainly is and the government will need to act quickly and select the right person.

Industry reflections on 2018



With infrastructure increasingly being seen by the government as a key driver of economic prosperity, 2018 is likely to be just as interesting – and challenging – as the previous 12 months.

Another challenging but interesting year ahead

here's no doubt that 2017 will go down as one of the more eventful years for the infrastructure sector. The industry was rarely out of the headlines, with the government at last seeing infrastructure as key to driving economic and social progress. 2018 promises to be another interesting year, full of challenges as the government continues to grapple with Brexit, but also opportunities.

An ongoing concern in 2018 remains the infrastructure pipeline, especially its



Stuart MacKenzie:
"Without
representation from
our MLAs it is a
challenge to
influence the local
agenda."

funding. "A big area of concern for me is the inconsistency in the UK's pipeline of projects in terms of funding and procurement timelines," says Lara Poloni, chief executive of Europe, Middle East, India and Africa at AECOM.

"This in turn can affect business's ability to ensure they have the correct resources at the right time," she said.

In Northern Ireland, despite the £1bn handed over by Theresa May's government in return for the support of the Democratic Unionist Party, with the assembly remaining suspended there are challenges ahead. Stuart MacKenzie, chair of ACE Northern Ireland and JCP Consulting director, said: "With no assembly there is no 'Programme for

Government' and therefore no budget set by MLAs (assembly members). However, the secretary of state has released funds to enable the industry to develop and grow.

MacKenzie says that despite Brexit and the lack of local government in Northern Ireland there has been a continued upturn of work throughout the industry over the past year. "Opportunities for inward investment exist and both major infrastructure and capital development projects have been issued," he said. ACE was at the centre of discussions, representing members in Northern Ireland in debates around the construction sector, however "without representation from our MLAs it is a challenge to influence the local agenda at



Mathew Riley: "The government is going to struggle to make critical decisions in 2018 in the face of Brexit."

the level of local government," he said.

According to Ramboll's UK managing director Mathew Riley, Brexit would continue to cast a shadow over the industry in the year ahead. "It would be easy to criticise this

government for a lack of progress on vital issues such as housing, additional runway capacity in the south east etc, but they are going to struggle to make critical decisions in 2018 in the face of Brexit," Riley said.

Nelson Ogunshakin, chief executive of the Association for Consultancy and Engineering, was also concerned about Brexit. "I worry that the continued focus on Brexit is impacting the 'day-to-day' work of government. It is for this reason that ACE will continue to engage on behalf of its members, making sure that infrastructure is not set aside to be discussed at an undisclosed date in the future and that the important work continues on delivering our national project pipeline," said Ogunshakin.

Mathew Riley said that the industry needed to step up and help the politicians. "We need to help the policy makers by addressing the number one industry challenge – productivity," he said. "We need to use the Construction Innovation Fund to demonstrate our ability to step up and play our part in delivering smart and efficient solutions – and start to do so this year! This will be tough ask when you look at the financial issues facing some members of the supply chain. However, now more than ever



industry needs to whole-heartedly embrace the digital agenda if it's going to stay relevant in future."

we need to collaborate to provide the evidence of reform, to make investment in our infrastructure more affordable, and to show how dynamic our industry can be to retain and attract the best talent," said Riley.



Lizi Stewart, head of highways and aviation at Arcadis, agrees with Riley on the productivity issue. "The UK is still facing a massive productivity challenge and although the role that infrastructure can play in stimulating a lagging economy has long been recognised, in 2018 we can expect to see increasing pressure being placed on our industry to do things differently," said Stewart.

"In this respect, I think we can expect to see the Infrastructure Client Group's 'Project 13' really come to life. Our industry is increasingly ready to embrace change and the race to the bottom certainly in terms of costs - is a thing of the past. In 2018 we're going to see more emphasis being placed on how we manage projects to derive maximum long-term value and the challenge for the industry will be in how we can ensure



Lara Poloni: "We need to be smarter at tapping into the engineers of the future whilst developing those already employed."

this approach is firmly embedded in delivery," Stewart said.

AECOM's Lara Poloni highlighted skills as a key challenge for 2018. "Attracting and developing a diverse range of people from a variety of backgrounds is

vitally important to the industry. The government, industry and schools need to be smarter at tapping into the engineers of the future whilst developing those already employed to ensure we have a workforce that is fit for the future. At AECOM we've invested heavily in digital; we know that we need to be fit for the future which means our workforce need to be empowered and enabled to meet that challenge."

Steven Trewhella, director Rivelin Bridge and chair of the ACE/EIC water group, said investment would remain a challenge in the year ahead. "Water challenges, 'too little' and 'too much' will remain an investment priority in the

UK and internationally," he said. "Cross-sector collaboration presents a growing opportunity and imperative in 2018 to accelerate investments and unlock the potential of service-product-software combinations to bring forward new ways of doing things and new value. As ever the challenge will be to design solutions sensitive to future risks and opportunities," Trewhella said.

Lizi Stewart also highlighted technology as a key driver for the year ahead. "Current emerging technologies, from artificial intelligence and virtual



Steven Trewhella: "The challenge will be to design solutions sensitive to future risks and opportunities."

reality to 3D-printing and the use of big data, are all going to play a major part in how we operate. However, the real challenge for the industry is going to be keeping up with the pace of change.

"Construction is one of the last industries to be digitally disrupted and, if we're to meet future consumer and client demands, we can't afford to be left behind. There could be a very real threat of

digital specialists starting to move into the construction space, and the industry needs to wholeheartedly embrace the digital agenda if it's going to stay relevant in future," said Stewart.

ACE makes new board appointments

As well as unveiling Ramboll's UK managing director Mathew Riley as its new chair (see p22-23), ACE has made a number of new appointments to its board.

Last year's chair, Mike Haigh, managing director at Mott MacDonald, becomes immediate past chair. Other changes include Mark Naysmith of WSP, chair of ACE business academy, Clive Anderson of WYG, who is chair of the international business group, Steven Hale of Crofton, chair of the SME group and Ruth Jeffs of Waterman and chair of ACE Midlands, who is appointed to represent the ACE English regions on the board.

The full list of ACE board members for 2018 is as follows:

Board officers

- ACE Chair Matthew Riley, UK managing director, Ramboll
- Immediate Past Chair Mike Haigh, group managing director, Mott MacDonald
- First Vice Chair Nick Taylor, chief executive officer. Waterman

- President and Company Secretary - Dr Nelson Ogunshakin OBE, chief executive ACE.
- ACE Treasurer Paul Reilly, chief executive, Peter Brett Associates

New board members

- Chair of ACE Business Academy - Mark Naysmith, managing director UK, WSP
- Chair of ACE Midlands (representing English regions) -Ruth Jeffs, regional director, Waterman
- Chair of ACE Major Projects David Barwell, chief executive officer, AECOM UK and Ireland
- Chair of ACE International Business Group - Clive Anderson, managing director strategic advisory practice, WYG
- Chair of ACE SME Group Steven Hale, managing director, Crofton



Chair of ACE Best Business Practice - James Hampson, executive director of operations, Jacobs UK

Existing board members

- Chair of ACE Northern Ireland Stuart MacKenzie, MEP director, ICP Consulting
- Chair of ACE Scotland Simon Innes, managing director, Goodson Associates
- Chair of ACE Cymru Wales Neil Sadler, consultant, Cass Hayward
- Chair of ACE Large Consultancy Group - Geoff Hunt, chief executive, Arup UKEMA
- Chair of ACE Legal and Commercial Group - Henry Pipe, senior partner, Max Fordham
- Chair of ACE Membership Group
- Rajiv Sudan, business development director, WYG
- Chair of ACE Progress Network Group - Athena Livesey, principal engineering geologist, WSP
- Chair of ACE HR Taskforce Tania Heap, group people director, Mott MacDonald
- Chair of ACE Public Affairs Group – Joanna Streeten, director, head of London project management, **AECOM**

Project management



Building trust in project teams working on complex projects takes time contains time to develop genuine collaboration is complex projects takes time but taking the crucial to success, says Tony Llewellyn.

Managing tribal relationships in joint ventures



here is a global trend for organisations to seek partners to bid for and then deliver major projects. This is largely a response to the size of the projects, which are felt to be beyond the capacity or expertise required to deliver the project alone. The statistics show that whilst most joint ventures begin in a spirit of mutual hope and excitement, many end in frustration and acrimony.

So, what could be done to improve the chances of a happy ending?

The starting point is to understand why humans follow particular patterns of behavior when working in groups. Five thousand years ago, the hunter-gatherers fundamentally depended on each person in their tribe to collaborate and share with others. Safety and security came as being part of a tribe and so we have learned to instinctively look to the groups we are part of to shape our sense of belonging.

In the modern world, our attachment

to a group remains, usually at a subconscious level. At work, tribal identity comes from recognising those who we feel are similar to ourselves. It also applies to the organisations we work with. When we feel comfortable, we are able to connect and communicate with others outside of our group, but when times become difficult, we have a hard-wired instinct to find safety within our home team or tribe.

Project teams engaged in a complex project have enough trouble establishing collaborative and trusting relationships within teams of people they know. To build the same level of cohesion with a different group is inevitably going to be a harder proposition.

Building trust takes time, and yet the nature of the modern world is to put intense pressure on project managers to launch into action as soon as the decision to proceed has been made. A common feature of successful joint ventures is a recognition that time needs to be set aside

at the very start to build relationships first and then allow agreement of process and systems to follow.

Here are some of the most common actions that have been found to help build collaborative teams from two or more

1. Articulate a clear and compulsive reason why the joint venture exists. This vision needs to be drawn from the leadership team as a co-creation exercise. Having a clear understanding of the prize will provide the team with its guiding star setting a key point of reference for future decision making.

2. Create a 'one team' ethos from the very start whereby the project leadership group becomes committed to the successful delivery of the project. The secret is to get this team into a mindset where the project overrides the political and systemic obstacles created by the parent organisations.

3. Establish a separate collaboration workstream, primarily concerned with setting the required behavioural norms. This is a useful approach on any large project but is critical for joint venture teams. The workstream should be managed by senior members of the project teams and is concerned with team development, communication and conflict management.

4. Pay attention to a 'fair' contribution of resources. The equitable contribution of resources may be prescribed in the joint venture agreement, but the reality of project delivery means that the provision of people, equipment and other resources can easily become lop sided, creating dissatisfaction and friction.

5. Celebrate your differences. Teams from different cultures and backgrounds can offer an amazingly creative source of ideas and solutions, provided they can overcome their tribal biases. Start the project by acknowledging and celebrating these differences rather than hoping that somehow or other, the 'other side' will think and behave in the same way as you.

There is no magic button to press that will suddenly sort all the potential challenges created by tribal instincts. Team building takes time and requires thought and energy, particularly in the early stages of the project life cycle. If you can establish a strong 'one team' mindset in your senior managers, you have a chance of creating a new tribe that is focused on the same goal and is prepared to do whatever it takes to achieve a successful outcome.

Tony Llewellyn is collaboration director for ResoLex, a consultancy specialising in the optimisation of project team performance.

Flood defences

Current investment levels in flood prevention are not sufficient to match the expectations of society and these expectations will be raised higher if major flooding occurs this winter, says *Matthew Elliott*.

Is the UK's flood defence budget being well spent?

Ith 2017 having been a stormy year for politics, when it comes to the weather, the UK has had it rather easy. A dry and mild winter, followed by a warm and dry spring, with summer and autumn rainfall also proving average, it begs the question whether the UK is ready for another winter of widespread flooding misery?

Despite long term weather forecasting still being in the development stages, there are ways we can plan and protect ourselves from extreme flooding, based on evidence from records of past climate events.

Our current system of flood defences has evolved over many years, often as an immediate political response to a major flood rather as opposed to a consistent national strategy. As a result, the nation's defences do not provide a consistent and acceptable standard of protection (SOP) and inevitably leave a 'residual risk' that must be managed. There is also disagreement about where the priorities for protection should lie, and the extent to which 'hard defences' should compromise the wider environment.

It is important to appreciate that there are several types of flooding, with the government recognising coastal, river and surface water flooding as the most notable. In the recent civil emergencies risk register, published September 2017, coastal and river flooding are given equal ranking ahead of surface water flooding.

Previously, coastal flooding had been given greater focus, no doubt recollecting the devastating coastal floods of January 1953, when over 300 people lost their lives along the east coast of England. The impact of a major surge-induced coastal flood on the coastal lowlands that line the UK's east coast would understandably be much greater than river or surface water flooding of a similar return period.

The government is currently two years into its record level six-year £2.5bn investment programme that aims to improve our system of defences against all types of flooding, with cost-benefit analysis being a key decider in how this £2.5bn investment is spent. This mechanism prioritises the defence of residential properties over business properties, infrastructure, and agricultural land. However, the cost-benefit mechanism does favour wealthy urban areas (such as in the south east of England) where property values are higher and any supplementary funding that may be needed to see a project through is more likely to be available.

With investment in flood defences having arguably increased, leading academic experts remain concerned. The *Climate Change Adaption Evidence* (2016) emphasises "there is an urgent case for stronger policies" to address 'flooding and coastal change risk to communities, business and infrastructure'. Additionally, the Environment, Food and Rural Affairs

Committee report, Future Flood Prevention, argues that "current flood risk management structures are fragmented, inefficient and ineffective".

Others argue that the six-year £2.5bn investment programme itself unfairly favours the south east. Whilst the costbenefit analysis that underlies flood defence spending decisions clearly does favour wealthier urban areas, it is not the only reason why investment is skewed towards the south east.

Climate change experts predict the highest increases in fluvial flows and sea levels (relative to the land) in the south east of the UK. The Thames Estuary 2100 Plan, which aims to protect "1.3 million people and £275bn worth of property" in the area from tidal flood risk for the next century, positions the south east as an area of national importance. Projects of this scale therefore must be seen as justified national priorities.

Ultimately it is clear that funding for improved flood defences is not without its limits. Skills shortages in the industry already hamper the timely delivery of costeffective solutions at current levels of investment. This is where a planned investment strategy for skills and industry training is fundamental to the progression of both defence initiatives and project delivery.

It is clear current investment levels are not sufficient to match the expectations of society, which will only be highlighted if further major flooding occurs this winter. Unfortunately, another dry winter will mean the matter remains out of the headlines, and out of mind for our politicians. Undoubtedly, the government is heavily preoccupied with other issues, however the next nationally devastating flood cannot simply be postponed.

Matthew Elliott is director, engineering at WYG.



Public must be engaged in in

New research strongly suggests that the public needs to be much more involved in the planning and delivery of major infrastructure projects to achieve better outcomes. *Andy Walker* reports.

he idea that the public needs to be won over if major infrastructure projects are to be delivered successfully is not a new one, but new evidence – outlined in two major pieces of research – strongly suggests that the industry needs to be more proactive and involve the public much more than it has done in the past.

The independent think tank, the Institute for Government, says that ministers should create a new commission to involve local people in major infrastructure projects. Their recent report, How to design an infrastructure strategy for the UK, argues that a commission for public engagement would reduce costly delays by giving people a genuine opportunity to influence decisions. It should draw on the example of the Commission Nationale du Débat Public in France, which has successfully reduced public opposition to major projects.

The report also finds that the absence of a national strategy for infrastructure has serious implications. New projects are dreamt up, reframed, scrapped and reinvented, seemingly with little consideration of long-term objectives – a clear example of this, being airport expansion in the south east, says the report. Co-ordination between different parts of government and regions of the UK is poor, resulting in less beneficial infrastructure, the report claims.

According to the Institute for Government, to resolve these issues, the government should develop a long-term national infrastructure strategy that properly coordinates the work of central and local government and more clearly spells out the impact on all regions.

The institute mourns the loss of the position of commercial secretary to the



Treasury, a minister who had a portfolio entirely focused on infrastructure and delivering a national infrastructure strategy, and calls for that post to be reinstated. Those calls will have greater weight following the resignation of the National Infrastructure Commission chair

COVERNMENT

BP.: 1

How to design an

Lord Adonis over Christmas and it will be interesting to see how Theresa May and her administration look to replace him.

Nick Davies, associate director at the Institute for Government, commented: "With no overarching strategy and projects spread across eight different government departments and various tiers of local government, it is no wonder infrastructure decisions in this country continue to be plagued by uncertainty, delays and increased costs. By strengthening the National Infrastructure Commission, creating a national strategy and better engaging the public, the government can deliver better infrastructure for the whole country."

Meanwhile, another report on public attitudes to infrastructure reveals that people want more information on infrastructure projects. The latest study by Copper Consultancy in partnership with TLF Research, shows that more than half of people in Britain regard housing as the most important investment priority for the country but much more is needed to be done by the industry and government to ensure that people understand infrastructure projects.

frastructure decision making



The public is an essential part of infrastructure planning. Government and industry need to reach out to ensure support for future projects.

This independent survey of attitudes to infrastructure in the United Kingdom found that more needs to be done to tackle the issue of how many people feel that infrastructure projects "happen to them", rather than "for them".

Housing was seen as the top priority for the majority of people, closely followed by renewable energy and major roads. The survey results were gathered after hearing initially from four focus groups around the UK and the findings take into account the responses of 2,007 people.

One of the most revealing findings from the Copper survey is the generational gap when it comes to optimism in infrastructure. Almost 60% of those aged 65 and over thought UK railways were ageing/not good enough, while just a little more than 20% of people aged 18-24 believed railways to be very good/among the best in the world. It was a similar picture for housing with nearly 60% of those aged 65 and over seeing UK housing as not good enough and just short of 20% aged 18-24 thought it was very good.

Linda Taylor, managing director of Copper Consultancy, believed the gap could be down to those aged younger having an "element of hope" and in general seemed to possess more of an "positive belief about the future". The report adds how younger people have an aspiration which makes them more optimistic and they want more infrastructure as they pursue jobs and homes in a more modern world.

A key finding from the survey was the two-thirds of respondents who said that there was not enough information available for them to have an opinion on the future of infrastructure and housing. Almost 60% of people said that they would be more interested in infrastructure and development projects if the benefits were clearly explained. Taylor said

there needed to be a "bottom-up approach" to address this issue and it was important that both the government and the industry played a part in getting messages out to the public.

Commenting on the survey, Taylor added: "What's clear from the research is that the public wants the opportunity to support infrastructure investment, but unless they understand the benefits, people do not feel equipped to get involved. The public wants support in linking projects to day to day life and experiences."

Taylor said that there is a problem of an "investment-benefit disconnect". "The government and industry have an opportunity to tell a coherent story about the real life benefits that investment in infrastructure and housing delivers," she said. "Our research shows that when the benefits are made clear, the public is supportive. If we achieve this, public support for infrastructure could lead to fewer delays to projects and the benefits of infrastructure will be realised sooner," said Taylor.

Those behind the report have highlighted six recommendations to improve matters:

- 1. Connect investment to benefits link investment to day-to-day meaningful benefits.
- **2. Explain priorities** articulate how each sector contributes to the overall

picture of infrastructure investment.

3. Combine housing and infrastructure – the public sees infrastructure and housing as interlinked; separating the two serves to undermine project benefits. **4. Develop a positive**

4. Develop a positive narrative – the public wants to understand the infrastructure industry's success.

5. Explain how infrastructure and housing will form the spine of post-Brexit UK – the public is united around the need for investment once the UK leaves the European Union and sees infrastructure and housing as an essential part of the UK's future.

6. Connect – don't rely on a transactional relationship with the public – industry needs to build long term, meaningful relationships with society to maximise opportunities to shape projects.

Both reports offer yet more evidence that the public are an essential part of infrastructure planning and at a time when infrastructure is increasingly being seen as key to the future of the UK's economy, both reports' findings are extremely timely. It is clear that if government and the industry reaches out to the public and links the positive changes that infrastructure investment can make to their lives and communities then public support will be much more forthcoming for major projects.

In 2018, the industry has an opportunity to get on the front foot in telling its stories better to the public and highlighting the real benefits that quality infrastructure can provide. Adopting such an approach can also help in promoting the industry more widely and careers within it and that cannot be a bad thing at a time when infrastructure companies are desperate for talent.

Of course, the challenges facing UK infrastructure are not just the fault of individual organisations or people. The Institute for Government says that there are also systemic problems with government institutions and the politics of infrastructure decision making in the UK, which they say need to be addressed urgently in order to develop a coherent strategy for the future.

There is much to do for both the industry and government in the year ahead it seems.

Driverless vehicles Crossing Shared Zone UNDER AUTOHOMOUS CONTROL JAGUAR LAND ROVER DRIVING TOWARDS AUTONOMY LILLIPUT

With autonomous cars being prioritised by the government, *Ryan Tute* speaks to project director Tim Armitage on the progress of Arup's testing programme.

Big advances made in driverless cars as testing enters final year

assive strides are being made in delivering a future where driverless cars become the norm, according to one of the men at the forefront of a three-year testing programme which some of the UK's biggest car manufacturers have been involved in.

Tim Armitage, Arup's UK Autodrive project director, has been at the centre of the engineering and consultancy firm's testing from day one and now, two years into the programme, Armitage has revealed that testing in Coventry earlier this year has been more valuable than anyone first anticipated with cars clocking up the miles across the city.

The involvement of Britain's biggest car manufacturer, Jaguar Land Rover, is a clear indication of how determined it is for the country to play a leading role in the race to develop autonomous vehicles. The autumn testing is the first time it has played an active part on open roads with previous driverless cars confined to closed roads and tracks or only used on open roads for short demonstration periods.

UK Autodrive trials are exploring the benefits of having cars that can "talk" to each other and their surroundings – with connected traffic lights, emergency vehicle warnings and emergency braking alerts. The vehicles rely on sensors to detect traffic, pedestrians and signals but have a human on board to react to emergencies. The trials are testing a number of features and most importantly seeking to investigate how self-driving vehicles interact with other road users and how to replicate human behaviour while driving.

"The testing in Coventry was a big leap forward and potentially bigger than we ever

expected," Armitage said. "A lot of the testing was very complex and we covered a lot of miles in the city. We learnt a massive amount about the cars and it proved to be massively valuable. The fundamental purpose of testing is to get connected and autonomous vehicle technology out onto UK roads, so the start of trialling on the streets of Coventry is clearly a major landmark both for the project and for the UK as a whole. Our previous private test track trials showed that the technology works but it is only on real roads that we will start to see the scale of the benefits that it can bring."

Further trials are scheduled to take place in Coventry and Milton Keynes early next year followed by a final series of open road demonstration events in both cities during the second half of 2018. Testing later this year will provide innovators with more information in relation to how vehicles are able to manage roundabouts and the amount of "aggression" needed for them to successfully pass without accident.

The £19m programmeme in Coventry is timely, with Philip Hammond revealing a £500m injection into electric and driverless cars in his autumn budget. The chancellor has spoken about the government's desire

"The start of trialling on the streets of Coventry is clearly a major landmark." Tim Armitage, Arup



to have "fully driverless cars" without a safety attendant on board in use by 2021. Armitage has welcomed the announcements back in November and commends ministers on their commitment to the technology and for being "consistent" with what they have pledged over the years. Highways England in December also announced plans for wireless internet to be potentially installed across 4,000 miles of UK roads as part of government ambitions.

"Highways England is clearly aware of the importance of good communications environments to the development and adoption of connected and autonomous vehicles," Armitage said. The recently published Highways England Strategic Road Network Initial Report is another welcome indication of the level of support and seriousness of the UK government's continued commitment to the development and deployment of connected and autonomous vehicles. Certain levels of connection and autonomy are possible with the existing communications network, however, full functionality and operation will be dependent upon a secure and consistently available network."

Although there is a push to adopt the new technology, Armitage concedes that some people will take time to accept change. "It's a reasonable reaction for people to be anxious about change, especially for those in jobs that will be directly affected," he added. "While it might be a short-term worry for people who are driving trucks for example, the technology will actually help companies who are really struggling to recruit truck drivers in the long-term."

Global risk in 2018



The latest Control Risks RiskMap is predicting growing political tensions and cybercrime as the biggest threats to business in 2018, reports Ryan Tute.

Unpredictable politics poses biggest business risk in 2018

yber-attacks against infrastructure and growing political tensions between nations like the US and North Korea are threatening to "trigger shockwaves" across the globe and destabilise business confidence, according to an annual forecast.

Specialist risk consultancy, Control Risks, has published its annual RiskMap which aims to provide an important reference for political and business leaders. Regional rivalries in the Middle East and unpredictable world leaders, including the likes of US president Donald Trump and North Korean leader Kim Jongun are among the biggest threats to stifling positive economic outlooks which have been generated since the end of the financial crisis, says the latest forecast.

According to the latest risk forecast, businesses in 2018 will face profound uncertainty because of the increasingly personalised and assertive style of national leaders whose decisions are hard to predict. A number of these leaders rely heavily on nationalism and, to varying degrees, populism. Prone to capricious decision-making, they find foreign companies convenient targets. More than ever, knowing the mind of the person at the top is essential, say Control Risks.

Closer to home in the UK, businesses exposed to Europe will have to step-up their scenario-based contingency planning and continental Europeans trading with the UK will need to add urgency to their trading options review, according to Control Risks. Despite the EU returning to growth, the consultancy believes that the EU's economy could be challenged by ongoing nationalism within member states and the continuing ramifications of Brexit.

Spain's political risk has been raised from low to medium as the repercussions of Catalonia's September 2017 unofficial independence referendum will continue to cause political instability in 2018. Regional elections are unlikely to resolve the secession issue and prime minister Mariano Rajoy will continue to strive to keep his minority government in power.

Although the prospects and forecasts



Unpredictable leaders: North Korea's Kim Jong-un and US president Donald Trump.

for the global economy are at their brightest since the financial crash, political events and their potential fallout could yet threaten economic stability and confidence in world markets. Richard Fenning, chief executive of Control Risks, said: "Despite the most positive global economic outlook since the end of the financial crisis, we are entering a year of geo-political fragility that has the potential to trigger shockwaves to global stability and business confidence.

"The biggest risk is that the next world order will be imposed, not agreed, set-off by further nuclear brinksmanship between the US and North Korea, or wide scale destabilisation in the Middle East because of escalating Iran-Saudi Arabia rivalry. While these events are unlikely, what is certain is that global dynamics and perceptions of risk are being shaped by a more robust, personalised and unpredictable style of political leadership in many parts of the world, making business planning very difficult."

The top five challenges to businesses in 2018 according to the Control Risks report are:

1. North Korea escalation – war on the Korean Peninsula is said to be unlikely, but risks of miscalculation and accidental escalation are the highest they've been

since North Korean leader Kim Jong-un assumed power.

2. Large-scale cyber attacks against infrastructure – Control Risks say 2018 could see large cyber-attacks to build on 2017 being hit with numerous disruptive attacks. National infrastructure systems are particularly thought to be at risk.

3. US protectionism – while unlikely to occur, the risk consultancy claims that the threat is there of Trump pulling the US out of the North American Free Trade Agreement and the World Trade Organisation.

4. Regional rivalries in the Middle East – the Saudi Arabia and Iran rivalry is set to "inform and inflame conflicts and enmities in Syria, Lebanon, Iraq and Yemen".

5. Personalised leadership – the growing number of assertive world leaders who rely heavily on nationalism is highlighted as another risk.

Fenning added: "While 2018 will be a turbulent political year, heavily influenced in many areas by heightened nationalist pressure, global businesses must go into January with a cool head. Trying to understand the motivations of global leaders and the potential impact of their actions will be critical to making the right strategic business decisions."

Opinion



Sachin Sachdeva, managing consultant at MWH Global, now part of Stantec

Three things the water sector can learn from aerospace

"To ensure continued water security in the future with reasonable levels of investment, water companies will have to find innovative ways of delivering outcomes sustainably."

Water companies have made remarkable progress to address myriad challenges, including a diminishing and unpredictable water supply due to climate change, ageing infrastructure, changing regulation, a retiring workforce and limited funding.

However, there is a growing consensus that to ensure continued water security in the future with reasonable levels of investment, water companies will have to find innovative ways of delivering outcomes sustainably. Lessons from other sectors can be learned and one such sector worth looking at is aerospace.

Like the water sector, the UK aerospace sector is highly regulated. It is also considered world class in terms of innovation and operational effectiveness. There are three lessons the water sector should take note from the aerospace sector:

Research and Development (R&D)

- The UK aerospace sector spends approximately 8% of its turnover in R&D. In contrast, the R&D spend for the water sector is less than 0.5% of its turnover and the overall spend has been falling.

Water companies should consider increasing their R&D spend and developing strategic partnerships with other water companies and research institutes. They should take a long-term view and lobby together to influence the regulator to incentivise medium to longterm R&D investments, particularly in the areas of carbon reduction and sustainability.

Asset and data management -Aerospace companies use advanced techniques to monitor performance of their assets. Rolls Royce's Engine Health Management (EHM) tracks the health of thousands of engines operating worldwide. EHM has significantly reduced the cost of maintenance by optimising schedules and increasing engine availability by dispatching parts and engineering teams to the destination to fix any issues, even before the plane has landed.

Data analytics present tremendous opportunities to the water sector – water quality assessment, leak detection, flood warnings, to name a few. Optimal utilisation of plants, machinery and resources can help companies better prioritise their investment decisions and improve customer experience.

Collaboration - The aerospace sector collaborates extensively. GE and Rolls-Royce use risk and revenue sharing partnerships (RRSPs) to spread the risks and rewards across the supply chain during the life of a product. This has allowed partners to build further on their expertise, driving efficiency and incentivising innovation across the supply chain, encouraging best practice sharing and reducing waste.

Some water companies have used strategic alliances - Thames Water's eight2O alliance for example - which brings together expertise from multiple sectors to deliver a common set of outcomes. However, it falls short of the aerospace RRSP model since alliance partners are not liable for long-term performance. The RRSP model could bring real value for all stakeholders in the water sector considering the assets have long life, are capital intensive and they are developed and deployed by an extended supply chain.



John Hicks, director and head of government and public at AECOM

Chancellor's budget left several questions unanswered

Now that the dust has settled on the chancellor's 2017 budget, the reality of a looming Brexit is presenting a real challenge for most businesses in the sector. The chancellor certainly set his sights on reassuring industry and businesses like AECOM that the government will provide much-needed stability through an uncertain time, however, while government support is certainly welcomed, more clarity is still needed as the budget left several questions unanswered.

We were pleased with the chancellor's views on the delivery model that AECOM developed for the National Infrastructure Commission (NIC) for the Oxford-Milton Keynes-Cambridge corridor. Backing the NIC's vision for a million new homes shows that the government is starting to take seriously the pressing need for the

UK to demonstrate Brexit will not affect our ability to compete globally.

The government's commitments to completing the essential transport infrastructure to unlock the corridor with what appears to be new funding are certainly needed. The promise of a new wave of new town development corporations is, based on our research, the only way to achieve the target of 20-30,000 homes annually. As we argued, the only realistic way that such new towns could be delivered is through public-private partnerships; however, clarity is needed over the location of the five new towns the chancellor announced – are they within the corridor or additional to it? Will they form all, part of, or none of the target of 100,000 new homes announced for Oxfordshire by 2031?



Julian Francis, director of policy and external affairs, **Association for Consultancy** and Engineering

Brexit - where do we go from here?

"Both sides want a deal and both sides recognise that winning in this context is a nuanced concept rather than a zero-sum game."

Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.

So spoke Winston Churchill following the news of a British victory in the second battle of El Alamein but it could just as easily have been said by British and EU officials following the completion of the latest round of Anglo-EU Brexit negotiations.

Thanks to some last minute political juggling caused by the DUP, the EU Commission and the UK government came to an agreement on the critical issues of Phase One of the Brexit negotiations - the Irish border, financial settlement and citizens' rights. This means that talks will now move forward to Phase Two - the future UK-EU economic relationship – after being confirmed at the European Council.

This marks a much-anticipated moment for businesses who can now have greater confidence that negotiators will reach a final deal. Certainty is certainly needed with many newspaper articles continuing to highlight the impact prolonged uncertainty has been having on business.

We must now focus on the coming Brexit negotiations in the full and certain knowledge that they too will go down to the wire later this year. Both sides have stared into the abyss of a collapsed negotiation and have recoiled in horror at this outcome. Political brinksmanship has also been pushed to the limits and the realisation that governments could collapse, to be replaced by more unappealing alternatives, has focused minds.

Both sides want a deal and both sides recognise that winning in this context is a nuanced concept rather than a zerosum game. So, the outlook looks positive for round two but like all second rounds this time it will be harder. Where the EU could speak with one voice last time, this time the competing interests of the EU27 will be more evident and lead to more friction in Brussels while on our side the government's hand has been shown and so opponents will be more alert to nuisances of language.

Going forward there are, therefore, two main priorities. Firstly, the agreement states that there is a "common understanding" ensuring that the three million EU citizens living in the UK and over a million UK citizens living in EU can "go on living their lives as before".

However, people affected by this do not yet have a formal guarantee their rights will be protected. ACE will continue its work to secure this regardless of the outcome in the next stage of the negotiations.

Secondly, UK and EU leaders stated that they would seek agreement as early as possible in 2018 on transitional arrangements. Achieving this would greatly increase certainty and provide a period of time for businesses to adapt to the new economic relationship between the UK and the EU.

It remains, however, unclear how long these transitional arrangements will run for and business may need greater certainty to halt contingency plans for a March 2019 cliff edge. ACE will continue to push for this in the coming weeks and months.

With regards to London, the brief mention of Crossrail 2 doesn't go far enough. It is disappointing that the chancellor did not take the opportunity to confirm the government's commitment to this much-needed project, nor did he provide any news on the expansion of Heathrow Airport. However, the confirmation of a business rate retention pilot focused on Londonwide strategic priorities is a welcome but hesitant next-step in fiscal devolution to the capital.

It was also notable that the Northern Powerhouse and Midlands Engine were back on the agenda; these had so far been overlooked in post-Osbourne government announcements. We were pleased to hear the government's commitment to connect HS2 to other existing networks and hopefully this is

"The chancellor's commitment to invest in infrastructure to support electric vehicles on our roads will set the next era of challenges for our cities in the third decade of the 21st century."

more than the re-announcement of earlier promises.

The £1.7bn Transforming Cities Fund targeted towards devolved administrations and specific deals for Manchester and Birmingham reinvigorate pledges to regional growth, but the chancellor failed to provide further

reassurance on the commitment to unlock the Northern Powerhouse's full potential.

More widely, there was a distinct lack of dialogue on defence and the energy sector, where clarity on the Energy Coast and Hinckley Point C was needed by industry. Indeed, with the tight fiscal climate, there were no big moves of commitment to investment in infrastructure.

Looking to the future, the government is maintaining a look to technology and digital solutions to underpin economic growth. The chancellor's commitment to invest in infrastructure to support electric vehicles on our roads will set the next era of challenges for our cities in the third decade of the 21st century.

But perhaps in his recent budget, the chancellor has left us all craving the detail we need to be fully reassured.

Viewing UK rail rout



With an ever-expanding rail network and passenger expectations growing, Ryan Tute looks at how Network Rail is using innovative technology to keep on track in delivering projects.

en and women walking up and down tracks across the country to carry out routine maintenance and lower-level surveying jobs may soon become a thing of the past thanks to a national intelligence model which is helping engineers and planners look at railways in a way they have never been able to do before.

The Geo-RINM viewer (GRV) is a central part of Network Rail's preparation and maintenance work at a time when the organisation continues to plough ahead with a £38bn upgrade investment program designed to cope with the millions of daily journeys.



The GRV is the brainchild of Network Rail and Infrastructure Intelligence was invited to the rail operator's demonstration of the super high-res survey to see first-hand how the forward-thinking resource which scours 20,000 miles of UK rail routes was enabling the company to overcome obstacles on a day-to-day basis

Staff use the viewer to view thousands of miles of railways more clearly via aerial data which produces high-resolution images that can be later extracted and used for 3D modelling. The digitalised operation allows employees to gain better visibility of tracks, level crossings or overhead lines. It's all part of how Network Rail is moving towards the 'predict and prevent' strategy instead of a 'find and fix' method. Project managers describe the tool as an "incredibly powerful" asset which increases efficiency and reduces the

element of hazard for teams working on tracks across the UK.

Back in 2014, Network Rail conducted and completed an aerial survey of all the 16,000km of its routes as part of the Offering Rail Better **Information Services (ORBIS)** programme. As part of this aerial survey over 250 helicopter flights were completed in one flying season, capturing over 110,000 individual image tiles. Since then, another 4,000km of data has been collected as the routes continue to expand. The £330m five-year programme aimed at creating a detailed digital model of the country's network is one of Europe's largest rail infrastructure transformation programmes. The plan which originated in 2012, is predicted to save approximately £1bn by 2025.

The aerial surveys record at a height of 250m with the data then placed in the hands of engineers who use it to plan projects by checking anything from vegetation clearance to bridge demolition and new station builds. Ultimately, the data provides staff with a comprehensive aerial survey of Network Rail's assets.

There are three types of imagery in the GRV: Orthophoto RGB, digital surface model (DSM) and the digital terrain model (DTM). RGB is a representation of the real world showing ground features at a resolution of 4cm, offering a massive improvement on former tools like Google Maps and OS imagery which can only reach 20 and 25cm respectively. The other two imagery surveys show users both the height of any features and what the ground itself is doing. The DSM provides elevation measurements for anything from trees and bridges, while the DTM focuses on above ground features like vegetation.

Data collected from air surveys is also key for Network Rail in managing its boundaries with imagery collected 50m either side of the boundary which means the company can be completely sure of who is responsible whenever it may enter liability discussions.

Barry Gleeson, Network rail's programme manager (BIM), infrastructure projects, said: "The feedback tells us that our users are finding it incredibly valuable to see any part of the network in high-resolution imagery before they even go to site due to the time it can save on track. Now teams can often plan and familiarise themselves with a site before leaving the office. They can identify the hazards, access point and what materials they need just by using the surveys to analyse areas which might possibly present risks."



To keep ahead of inevitable environmental changes which can have big impacts on rail networks, full national surveys have been staggered for every five years with a refresh every year where required. But to overcome expensive helicopter rides, the ORBIS program has incorporated the use of drones in the sky to provide map data.

Network Rail highlights some of the ways in which the Geo-RINM viewer can benefit staff and clients as follows:

• Measuring assets: The viewer can be used to digitally measure distances and areas and improve decisionmaking.

Work site planning: Allows staff to become more familiar and aware of the site before turning up to the site meaning planners have a better chance of identifying safety hazards and thus reducing time spent out on site

tes like never before

Boundary management: Data collected 50m either side of Network Rail boundaries allows easier identification of the company's fencing and posts, among other assets.

• Vegetation management: A more proactive style of management is enabled via the technology with users able to view the height of vegetation and the gradient of any slopes containing trees.

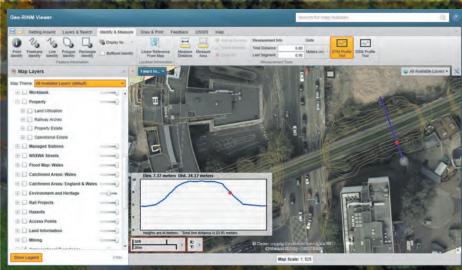
A number of companies connected to the rail network have spoken out about the viewer and how it has transformed the way they work.

Andrew Tustin, station portfolio surveyor for Anglia, said: "The GRV is saving me time and money. I no longer have to travel to stations in the route to gather key information – it's all accurate and at my fingertips." David MacLean, a level crossing manager in Inverness, said: "Everyone should be using this – I don't think people realise how powerful the GRV is. Risk assessments are more accurate and detailed – and safer too, as the data means I can see where steep drops occur and the precise levels of gradients."

Russ Parker, an incident controller in York, said: "Using the GRV saves a significant amount of time when responding to incidents – I can clarify asset information and exact locations within one streamlined viewer. I also have a clearer awareness of the incident, the assets relevant to it and can provide key location information to response teams and third parties."

As the GRV has become more advanced and added functionality, data extracted from surveys has been used for future extensive rail projects. Crossrail 2 is one example that taken advantage of the technology available for planning decisions and to supplement public consultations through the form of 3D modelling. After trialling a number of emerging technologies, a pilot scheme proved so successful that bosses behind Crossrail 2 decided to run 3D modelling for the entire route.

Marco Sala, a senior geospatial information technical specialist at Network Rail, said: "3D GIS reality models have provided a new approach to model the physical rail infrastructure using cutting edge technology to visualise it. At the end of March 2017, we completed the production of models and handed over the data to the Crossrail 2 team."



A GRV screenshot showing AS Imagery, Contour Information and Profile Tool.

Taking stock: Will Hammond's housebuilding budget up the build-out?



Chancellor Philip Hammond's first autumn budget appeared to be a big one for housing, but did the market get what it wants? *Jon Masters* analyses the response.

hilip Hammond's autumn budget made some big announcements for housing: £15.3bn of additional financial support over five years; planning reforms for freeing-up more land and making better use of what's available; and the abolition of stamp duty on houses under £300,000.

Beneath the headline announcements came the detail, which housing sector organisations and commentators pored over to give their assessment of Hammond's promises.

One pledge, carried over from the government's housing white paper of February this year, announced a "review into build-out". To be chaired by Sir Oliver Letwin, a panel will investigate an apparent gap between planning permissions and housing completions, reporting in interim in time for the 2018 spring statement and in full in a year's time.

Those responding to news of this latest review included the London Assembly's planning committee. A statement from assembly member and chair of the committee, Nicky Gavron, said: "The chancellor's announcement today to appoint Oliver Letwin to chair a review is welcome, but the London Assembly has already done the research and has a package of measures to unblock supply."

Pressed to explain, the research the assembly is talking about was done by residential market consultant Molior in 2014, to answer this brief: "the stock of unbuilt private-sector planning permissions is significant, so why aren't we hitting

housing delivery targets?"

The Molior report found a consistent gap between consents for sites and housing completions in London. In 2014 around 45% of permitted sites remained 'on hold'. Some 766 permissions had not started on site – representing 172,116 homes. But not because of 'land banking' from developers trying to extract more land value. The assembly appears to have not taken proper heed of its own research. Molior concludes that pretty much all developers try to build as soon as they can.

According to the London Assembly, its 'package of measures' for unblocking supply is a series of potential solutions including a 'use it or lose it' approach to giving planning consent, plus more rigorous ways of assessing development viability and introduction of a Land Value Tax for removing incentives for land banking.

The findings of the Molior study, which interviewed developers behind 583 London planning permissions, reflect a very complex reality in the housing consents process. Homebuilders and planners alike have rejected the need for the new Letwin Review.

"Much more needs to be done, in particular with regard to the planning system, if the target is to be met."

Stewart Baseley, HBF



"Planning consent is already a use it or lose it regime. That is why all planning permissions have an implementation condition attached," said Home Builders Federation (HBF) planning director Andrew Whitaker

"As has been proved by numerous independent investigations, house builders do not land bank," said Whitaker. "Moves to bring forward land held by parties not committed to develop them are welcome, but careful consideration needs to be given to the unintended consequences of seemingly straightforward proposals, such as taxing land that is currently unviable and thus making it more so.

"A planning permission is consent, not an obligation to develop and there are many reasons why permissions are not implemented, which is why they are time limited. The default time limit has already been cut from five to three years. Forcing people to implement their consents will ultimately lead to fewer people seeking permissions and fewer sites coming forward, so leading to fewer houses being developed," Whitaker explained.

On the planning side of developments, the president of the Royal Town Planning Institute (RTPI), Stephen Wilkinson, also said: "Another inquiry into the discrepancy between planning permission level and build-out rate is not what we need. The issue is complex and has been extensively reported on. There were a number of positive announcements in the budget, such as a focus on construction in



urban centres, but we need to see the details. On the whole this was a missed opportunity to solve the housing crisis."

The RTPI had called on government to do more to intervene in the land market: to help local authorities capture land value uplift to fund the vital infrastructure and

affordable housing needed. In a letter to the chancellor before the budget, the RTPI also asked government to support small building companies - which have largely disappeared from the sector over the past decade – and to speed up efforts to make data on land more transparent.

The Autumn Budget on housing: what the chancellor promised

- Raising the price at which a property becomes liable for stamp duty to £300,000. The duty will still apply for properties over £500,000.
- Consultation to come on minimum housing densities in city centres and around transport hubs.
- Review of build-out, to be chaired by Sir Oliver Letwin (pictured below).
- Register of planning permissions to improve information on where they're held and progress to build-out.
- Consultation on changes to Community Infrastructure Levy developer contributions to capture land value uplift.
- Homes and Communities Agency to be renamed Homes England and strengthened to use investment and planning powers in the land market.
- New £1.1bn Land Assembly Fund for Homes England to use to develop strategic sites.

- A further £2.7bn from the National Productivity Infrastructure Fund for the competitively allocated Housing Infrastructure Fund, taking its total to
- A housing deal for Oxfordshire offering £150m of infrastructure support over five years in return for 100,000 homes by 2031.
- •£630m through the NPIF for site infrastructure and remediation to aid building on small, stalled sites.
- £1.5bn of Home Building Fund loans targeting SMEs struggling to find finance.
 - Potential for £8bn of loan quarantees to support housebuilding SMEs and purpose-built rented housing.
 - Raising of borrowing cap for qualifying councils in affordability pressure areas from 2019-20.
 - £400m of loan funding for estates regeneration in 'run-down neighbourhoods'.

These hopes were largely disappointed. Hammond did pledge a range of measures and additional funding to help authorities and SMEs, but looking into the detail, much of it is greater allowance on borrowing. The industry response was largely unimpressed.

According to the Home Builders Federation, cutting stamp duty combined with existing support from the Help to Buy scheme will help more young people onto the housing ladder and increase numbers of new homes built, but the HBF also said a lot more needs to be done a lot more quickly if the government is to hit its target of 300,000 houses built every year.

"Much more needs to be done, in particular with regard to the planning system, if the target is to be met," said HBF executive chairman Stewart Baseley. Asked what needs to change exactly, the planning process simply has to be sped up, the HBF says: "It is taking too long to process applications from the point of outline consent to when builders can get on site and build," Andrew Whitaker said.

"Increasing the rate at which consents are processed has a number of determinants and so requires tweaks in a number of areas. Plus, local authorities have to be given the capacity to process them efficiently. The delays and costs of processing applications are delaying builders of all sizes, but in particular they impact SME builders which do not have the capacity to deal with them," said Whitaker.

Hammond repeated the government's white paper promise of planning reform, but, says property consultant Rapley's planning partner Jason Lowes, concrete proposals for reform were thin on the ground. "In fairness to the chancellor, he echoed Sajid Javid's comments earlier in the year, that there was no magic bullet to solve the housing crisis. Even so, in terms of the planning system, there seems to be little in the way of new ammunition on offer," Lowes says.

Others were more disparaging. Carl Dyer, head of planning at solicitors Irwin Mitchell, said: "The budget was the usual rattle of cans being kicked down the street and of failed policies being recycled. The 300,000 homes a year target is an aspiration for the mid-2020s. That figure needs to be seen in context - the 217,000 figure cited about houses built this year includes 40,000 conversions. The average for the last seven years has been 159,000 a year."

The Letwin Review represents a cheap shot against developers, Dyer said: "Every time anyone has investigated land banking, they have found the delays were inherent in the system. When councils routinely impose 40 or 50 planning conditions, it takes time to get schemes off the ground."

Young professionals



A network to help businesses make real progress

Making the most of young talent is crucial to any business. Here, *Anil Iyer* discusses the value to consultancy and engineering businesses of the leading industry group for emerging professionals in the natural and built environment.

ne of the most rewarding and fulfilling aspects of my job is the ability to harness the energy that millennials working in the natural and built environment bring to the industry and nurture it through the activities of the Progress Network, ACE's group for emerging professionals.

This vibrant body enables early career professionals to develop business and industry skills that prepare them as future leaders. We currently have seven Progress Network groups throughout UK and even one in the Middle East, all run by some of the best rising stars of the industry. The groups include members from small SME's right up to the large consultancies, who even though they have their in-house emerging professional groups, recognise the value of a cross-business industry group.

Over recent years the various sub-groups of Progress Network throughout the UK have run panel debates on topics that directly affect our industry such as infrastructure investment, the impact of HS2, Northern Powerhouse, Midlands Engine and London housing and people issues such as unconscious bias, diversity and inclusion and the impact of post-Brexit EU migration. One group contributed to policy formation in Wales and other groups regularly contribute to roundtables attended by senior industry leaders on subjects such as technology.

In 2017, Progress Network launched a

reverse mentoring pilot initiative which has been well received; the experiences and feedback from this pilot will be rolled out to the industry in mid-2018 as a best practice framework to promote business resilience that can be used by small and large businesses alike.

The culture of collaboration and the vast array of communication options has undoubtedly broken down barriers and those attending Progress Network events engage in free and open discussion away from their work environment, which particularly helps them learn from and absorb best business practices from different organisations.

It is known that employers nowadays hire not just for technical or project management experience, but place an increasing emphasis on the individual's business judgement, which is best developed through networking events.

Whilst some Progress Network groups are thriving, others are still evolving. The

individuals from the more successful groups are undoubtedly the ones that benefit from the strongest support from the leaders of their organisations. However, whilst in virtually all cases, that support comes from the top – after all, what CEO will say they don't value their rising stars – the level of support

often withers at business unit level where the focus moves from the overall vision and values of the corporate organisation to maximisation of fee-earning work.

Utilisation is after all the number one KPI for the business unit; it is tangible, and is easy to calculate. But the challenge lies where utilisation becomes the sole metric, with talent and potential often overlooked, which we all know can result in demotivation and ultimately attrition.

Industry awareness and its relevance to a business in the natural and built environment seems to still be perceived as an 'extra-curricular' activity at business-unit level. It's a 'nice to have' as long as it doesn't get in the way of utilisation. Yes, of course everyone is granted a number of days a year to go off for training and development and those seeking to achieve chartered status maintain meticulous records of their CPD courses and activities. And while the number of CPD days is obviously measurable and seen as a benefit to the individual, I would question whether the value to the business and more specifically the business unit, is being fully appreciated.

The Progress Network model whereby all events are held after work and the majority of events are sponsored, is an enduring cocktail mix of valuable industry learning, development of management and leadership skills, all in a business networking, yet relaxed environment. I would appeal to all organisations to embrace, if they haven't already done so, the Progress Network model and actively encourage their early career professionals to participate in their local Progress Network groups.

Firms could also do a lot worse than seriously considering developing a metric in

addition to utilisation, that recognises the value to their business of emerging professionals' participation in this worthwhile endeavour.



To find out more about Progress Network contact Anil Iyer, chief operating officer at ACE at **aiyer@acenet.co.uk** or phone 020 7222 6557.



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- □ We've nearly 100 years of heritage
- Over 100 areas of technical expertise

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Transport connectivity is



Following the release of an Arcadis report highlighting how well cities across the world are at keeping people moving, Ryan Tute analyses the challenges policy makers face in ensuring their locality doesn't get left behind.

global study has identified how investment in transport is the hallmark of any city which wishes to be sustainable, while highlighting the continued disparities between London and the rest of the UK when it comes to connectivity.

The Arcadis Sustainable Cities Mobility *Index* ranks the overall performance of the mobility systems in 100 cities around the world and is built on 23 indicators broken down into three main categories people (quality of life), planet (the

environment) and profit (economic benefit). Data was gathered on a wide range of areas which included wheelchair access, Wi-Fi on public transport, greenhouse gas emissions, congestion and delays and affordability of public transport.

While European cities were shown to be home to some of the most sustainable transport networks in the world, with 28 of the top 50 cities found in Europe, the picture in the UK has been described as

The index has highlighted positives like Edinburgh, Birmingham and London leading Europe as locations which are able to fund their transport needs through revenues and how Edinburgh and Manchester perform best in Europe when it comes to the accessibility. While, on the other hand, London is singled out for potentially pricing out citizens thanks to a combination of its vast network being the least affordable in Europe and high property prices.

Commenting on the index, compiled in



London (7th)

Peter Hogg, UK cities director, said: "As the highest-ranking UK city, London has one of the largest shares of its budget spent on transport. Yet it also ranks amongst the least affordable in Europe. While



the capital benefits from a high density of available transport options, it is

also held back by some of the highest levels of congestion. If the city is to be as transformed, it must invest and adapt."

Edinburgh (17th)

Graham Hill, city executive for Edinburgh, said: "Edinburgh has some of the best commuting times and least delays in Europe. It also has some of the highest density of bus and metro stops, making it one of the



leading cities for the accessibility of its transport. However, Edinburgh's growing

population is placing increasing pressure on the network. City leaders have drawn up plans to build a world-class integrated transport system, by updating ageing infrastructure and extending the recently completed tram line."

Manchester (35th)

Jonathan Moore, city executive for Manchester, said: "Manchester performs consistently across the index, ranking second only to London for the highest share of trips undertaken by public transport in Europe. The network has come



on in leaps and bounds in recent years. Manchester now has a sophisticated Metrolink system connecting the

two main train stations with the wider region, as well as an extensive bus network, a citywide rail network and the busiest airport outside of London. But while the infrastructure inside the city is working well, it needs far better links with the rest of the northern region."

key to sustainable cities

partnership with the Centre for Economic and Business Research, Arcadis UK cities director, Peter Hogg, said: "The UK needs to up its transport game. Although there is undoubtedly a lot we're getting right, a truly sustainable transport system isn't just about enabling mobility - it also needs to create major economic opportunity and improve the lives of those who rely on it every day.

"Regional connectivity has to be a key. But this isn't just about links between cities. Digital connectivity is also important and, when it comes to mobility, embracing new technology will massively improve a city's potential."

Disparities between the north and south are clear from the data with Manchester, Leeds and Birmingham all showing signs of how poor transport connectivity could hold back business and economic growth. Leeds, in particular, positioned at number 59 in the list, has the fewest bus and metro stops per square kilometre in the UK.

Zurich, Paris and Prague came highest of all European participants in the Sustainable Cities Mobility Index 2017 in second and third and fifth place respectively. Hong Kong topped the list thanks to a wellconnected metro network that encouraged a high proportion of residents within the city using public transport to get around.

Arcadis say in the report that those cities choosing to make what it called "bold moves" in the advancement of its urban transport systems will have a competitive edge over others that haven't, arguing that a more sustainable mobility approach will give cities greater levels of productivity. For a city to achieve a high score, it had to perform well across all three "pillars".

To get a better understanding on what cities across the UK need to do in order to

> climb the rankings and handle the needs of a swiftly growing population, Infrastructure Intelligence spoke to Arcadis' city executives below for an indepth look where each city currently sits.

Download the report at https://goo.gl/mzB6cu





Birmingham (38th)

Simon Marks, city executive for Birmingham, said: "Birmingham has been ranked as having the most affordable public transport system in the UK, and one of the top ten most affordable networks in Europe. It is also



one of the most economically sustainable in Europe, meaning that it can fund and

support its own infrastructure through city revenues. However, more needs to be done to improve congestion and travel time, particularly given the region's position at the heart of the government's new national economic vision."

Bristol (43rd)

Richard Bonner, city executive for Bristol, said: "As with any aspirational city, travel congestion is an issue, leading to frustration for local people and contributing to greenhouse gas emissions. While Bristol has some of the lowest commuting



times in Europe, it still scores relatively low for access to transport services and would benefit

from greater connectivity to the country's other powerhouse cities. However, much is happening that will drive improvement, including ongoing electrification plans, new rolling stock on the railway to London, MetroBus coming on stream and MetroWest improvements underway."

Dublin (44th)

Dennis Geary, city executive for Dublin, said: "The last decade has seen significant transport improvements. Of particular note are the new airport terminal, which has significantly increased



capacity, the bicycle rental scheme, and the new bus and taxi lanes, which allow

passengers in and out of the centre more quickly than before. But these improvements aren't being felt by the average commuter, who still faces delays at peak times."

Leeds (59th)

Nick Kealey, city executive for Leeds, said: "Leeds has seen its fortunes improve, but it still has work to do to realise the aspirations of the Northern Powerhouse. The recent allocation of £174m of new funding from the Department for



Transport, along with the remodelling of the city centre ahead of HS2, will go a long way towards

addressing concerns and help to improve connectivity between other major Northern cities. New initiatives such as proposals for the next phase of CityConnect, which will extend the cycle superhighway through the city and offer up to 10 kilometres of new segregated lanes, will also make a difference."

Interview



Ramboll's UK managing director Mathew Riley is an interesting choice as the new chair of the Association for Consultancy and Engineering (ACE). With an unusual combination of having worked for client, contractor and consulting organisations for nearly 30 years, including a memorable stint as commercial director on Heathrow's groundbreaking Terminal 5 project, he is potentially the ideal candidate to chair the organisation, especially at a time when the industry is being urged to work more

closely to implement the government's new construction sector deal.

So, Riley should be well placed to help address the thorny issue of productivity that has so bedeviled the industry for many years and which the government wants to see improved. Unsurprisingly, he cites improving industry productivity as one of his three key priorities for his year in office. The other two are seeing progress on genuine collaboration and demonstrating real evidence of what can help improve the industry.

"The industry has talked for years about efficiency and productivity and the government has probably got very frustrated with the sector," Riley says. "It's now got to a point where there are real solutions out there and we need to do a lot more as an industry to promote what we are capable of achieving, rather than looking to the government to bail us out with public spending. When that happens, the industry doesn't reform itself or look to do anything different," says Riley.

"The advances we have in technology and the way we can work means that the capability to transform the way we design, engineer and construct are quite different from even five or ten years ago," Riley says. He cites the investments that have been made by various companies over the past decade in



offsite construction and predicts that the momentum will increase dramatically. "We're seeing digital design techniques coming to the fore more and more and if you start to combine that with other aspects of digital design and offsite construction then you have a real opportunity to transform productivity," he says.

"For me, the first priority is to promote how we can address the productivity issue and find the evidence to show that we can do it. Organisations like mine and others are investing in this capability. Clients' ability to go further faster has also never been better and our challenge is to pull all that together and keep up," Riley says.

So, what has held the process of industry improvement back for so long? Riley is clear about the reason. "We are very fragmented

as an industry," he tells me. If you look at the business models, procurement, the way we compete for work - all those things make it hard for people to collaborate," Riley says.

Industry's opportunity

However, he believes that the government's construction sector deal and its promise of matched funding to promote innovation presents an opportunity. "Because we are all investing money ourselves, we should be able to pool that investment and match fund it alongside the government money," he says. "I'm happy to take my bit of my investment and put it alongside somebody else's if we can then holistically say that there are some projects out there that we want to create as demonstrator projects. The industry has an opportunity to come together on this and I'm looking forward to talking to government about how we can use their money in the best way to help improve productivity," he explains.

Speak with one voice

Riley believes that industry bodies will need to work together with the government. "It may be easier to match fund as a collective rather than sectors acting alone and I will be looking to see how ACE can play its role in ensuring that the industry speaks with one voice. We need a pan-industry approach because that's the way to achieve change,"

"We also need solid evidence of reform and new skills coming into the industry. If we improve productivity, embrace new skills and become a more dynamic industry then that allows us to compete more effectively, making the industry more attractive," Riley says.

He also thinks the industry should sell itself better. "Look at the regeneration that all our major cities need. The issues are hugely complex and our industry has the potential to do all those things – we are just not promoting that capability well enough," says Riley.

'We need to create critical mass. Take housing. The factories that can build 2,000 houses a year are a drop in the ocean in

terms of what the country needs," says Riley. "We need to make it cheaper for upfront investment through a 'kit of parts' approach and identifying the industries that others can then go and invest in. Other countries do it. Look at Denmark, where 95% of what they do is all offsite and has been for 50 years, because in the 60s they had a skills shortage so it transformed the way they designed and engineered. These things are absolutely possible if the will is there," he says.

We need to be bold

Rilev is keen that ACE is seen to demonstrate real solutions with government and shows what the industry can do and how it can deliver more efficiently. "We need that solid evidence," he says. "Something that is sustainable that changes how we deliver projects and transforms the way we work. One-off gains that are not repeatable is not what we need. Critical mass is crucial," says Riley.

Riley relishes the opportunity of taking the lead for ACE in this area. "It's a fantastic opportunity for us. I'm a glass half full person and I think we need to be bold," he says. "We need different thinking and to challenge conventional thinking. My approach will be to look at what ought to be achievable. There is no excuse not to make the changes we need. Otherwise others will come in and take our space, so it's up to us. We can't just sit around waiting for others to act," says Riley.

Challenges ahead

Riley is likely to adopt a no nonsense approach. "I won't be confrontational for the sake of being confrontational but I am quite happy to speak my mind. We need to provoke a reaction quite frankly, in the nicest possible way, and I'm quite prepared to provoke that reaction," he says.

He recalls his days working on the Terminal 5 project. "That was 15 years ago and all the stuff that people thought was innovative and pioneering then, we are still talking about now. It has yet to become mainstream. All that learning even on that project has been lost. The industry needs to move on and we don't want to be having

the same conversations in another ten years," he says.

He has a glint in his eye when he talks about the challenges and opportunities for the year ahead. I fully expect him to make a mark in the industry with the clear way in which he articulates his views and in ensuring that the voice of

ACE's members is heard at the very top of the industry and with government.

"If we improve productivity, embrace new skills and become a more dynamic industry then that allows us to compete more effectively, making the industry more attractive."

Women in engineering

The Institution of Engineering and Technology has launched a new campaign to showcase women in engineering by highlighting the industry's diverse career opportunities through stunning and unexpected imagery.

Dispelling the stereotype of a 'typical engineer'

he stereotype of an engineer is alive and well amongst school children, according to new research by the Institution of Engineering and Technology (the IET). In response, the institution has embarked on a campaign, "Portrait of an Engineer", to showcase engineering in a completely different light.

To dispel engrained ideas of what a typical engineer 'looks like', the IET decided to highlight its annual Young Woman Engineer of the Year Awards with a campaign to dramatically highlight the diverse career opportunities available in the industry using stunning and unexpected imagery.

The IET commissioned Rankin Studios, renowned for photographing everyone from Kate Moss and Madonna to The

Queen, to style and shoot this year's award finalists as well as previous affiliates in a series of dramatic and thought-provoking images. Dubbed 'Portrait of an Engineer', the series was shot by award-winning photographer and Rankin protégé Vicky Lawton.

Jo Foster, IET diversity and inclusion manager, said: "These outdated and fixed ideas of what a 'typical engineer' looks like are damaging to the industry, especially when the significant shortage of engineers in the UK is posing a serious threat to the economy. Currently only 9% of engineers are female, the lowest in Europe. Wide ranging reasons have been cited for this lack of women, from gender stereotyping and limited female role models to misconceptions about the job itself and parental attitudes.

"Engineering is perceived as masculine, unglamorous and usually depicts people wearing hard hats and overalls. The reality is very different. With this series of beautiful and remarkable portraits we want to break down the visual stereotypes and show that engineering is a diverse and creative career which offers the opportunity to do something life - or even world changing. It also shows that you don't need a hard hat or high vis jacket to be a ground-breaking engineer."

Rankin added: "I hope 'Portrait of an Engineer' inspires other young women to see engineering in a new light and consider it as a future career. These women are great role models, they are strong, smart, and can help change the world with their skills."

Engineers featured include Roma Agrawal and Yewande Akinola (pictured inset). Agrawal is a chartered structural engineer who has worked with signature architects during her eleven-year career

> designing footbridges, towers and sculptures; including six years as a senior structural engineer on The Shard, the tallest tower in Western Europe.

Akinola's engineering experience and responsibilities include the design of sustainable water supply systems and

the engineering design coordination of large projects in the built environment. She has worked on projects in the UK, Africa, the Middle East and in East Asia.

Vicky Lawton, photographer and Rankin protégé, said: "It was important to me to capture each of the women's individual personalities in the portraits and show that their work is as varied as their characters. I played on the stereotypes of engineering by using a classic backdrop whilst juxtaposing with chic, modern styling choices. I loved meeting this cool, eclectic group of seriously powerful individuals and translating that determination and inner confidence into the imagery."



The winner of the 2017 IET Young Women Engineer of the Year Award was electrical engineer Ozak Esu, who received her award in December at an event in London. Esu and some of the other engineers featured in the Portrait of an Engineer campaign are highlighted below.



Dr Ozak Esu
Electrical
Engineer
Growing up in
Nigeria as a child,
Esu said she was
often frustrated
by power cuts
whilst watching
her favourite kid's
cartoons. It was
that, combined

with her passion for mathematics, and ambition to contribute towards developing and managing Nigeria's power/energy sector that led her to pursue a career in electrical engineering.

At 17 years old, Esu moved to the UK as an international student to begin studies at Loughborough University. She chose to go to university after college to study engineering because there were no alternative routes/opportunities such as apprenticeships available to her at the time. Aged 20, she graduated with a first



class honours in BEng. Electronic and Electrical Engineering and was awarded a Loughborough University Research Studentship worth £54,000 for a threeyear period, to pursue her PhD.

Esu began her PhD in October 2011, within the areas of advanced signal processing, and wind energy. Her thesis, titled "Vibration-Based Condition Monitoring of Wind Turbine Blades", proposed an autonomous low-cost condition monitoring system, to reduce downtime, operations, maintenance, and capital costs associated with wind energy projects.



Ellie Wilson Instrumentation and Control Technician

Wilson was very academically gifted at school (achieving nearly all A's) and as a

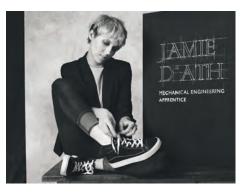
result was pushed to go to university by her teachers. However, after completing work experience with a local employer, she was set on finding an apprenticeship in engineering. Four years later, Wilson is now a fully qualified Instrumentation and Control Technician for Semlogistics in Pembrokeshire.

Dr Larissa Suzuki Head Data Scientist Dr Larissa Suzuki is a passionate computer scientist, inventor and engineer. She holds a PhD in Computer Science, an MPhil in Electrical Engineering and

a BSc in



Computer Science. Her professional career includes over ten years advancing fields of computer science and engineering, including work on smart cities, data infrastructures, emerging technology, and computing applied to medicine. She has worked for local government, managing the development of technologies to support London's growth and infrastructure delivery.



Jamie D'Ath

Engineering Apprentice

D'Ath is 21 and has recently entered the fourth year of her engineering apprenticeship. This has meant she's been involved in a wide range of activities - from completing complex drawings for parts and assemblies, to analysing procurement statistics, to conducting trials.

Aware of the power of promoting STEM and wanting to encourage more people into choosing the subject, D'Ath has run a number of STEM-related activities in schools. These include attending school events to run activity sessions which help promote STEM to all students within the school.



Sophie Caffrey

Technical Apprentice: Electronics
Caffrey is a technical apprentice
specialising in aerospace, defence and
security technology. She is currently
working in applied research, looking
at new and emerging technologies
within defence. Since beginning her
apprenticeship in 2015, she has
predominantly worked in hardware,
designing and developing schematics
and printed circuit boards.

In 2016, Caffrey developed a test interface board for a brand-new product. She worked with lead and design engineers to fulfil the requirements of her internal customers and produced a board that exceeded expectations. This board has now been used on every global trial of the product this year, from Germany to America.

Benchmarking study shows firms in rude health

Consultancy and engineering businesses are in rude health despite ongoing business challenges, according to the latest European benchmarking study.

Rising revenues, headcounts up and increasing profit margins are three of the key headlines from the latest Benchmarking for Engineering and Consultancy study, conducted for the Association for Consultancy and Engineering (ACE).

This is the eighth year in which companies from other European countries have taken part in the benchmarking study and the results paint a positive

picture, with firms of all sizes reporting positive numbers for turnover, staff and profits as well as reducing overheads, falling staff turnover and healthy forward order books.

The ACE Benchmarking Report shows an industry in rude health, examining trends and drawing wider conclusions based on the submissions of participating firms.

Key findings from the study include:



• 90% of UK and European firms increased their revenue in the last year and the median growth rate was 7.5%;

• Average growth of larger UK firms (over 250 employees) was 10.3%;

- 79% of SME firms increased their revenue in the last year;
- Total profit of UK and European companies

was up 10% on the previous year;

- 57% of larger firms reported higher profit margins than last year;
- Average profit for large firms went up from 5.8% to 7.4%;
- Average profit for SME firms went up from 10.7 to 12.4%;

Commenting on the results of the benchmarking survey, ACE chief executive Nelson Ogunshakin, said: "On the whole these are very encouraging results for our industry. Turnover is up, staff numbers are increasing and profits are continuing to rise, showing that consultancy and engineering firms are doing well in what has been a very challenging marketplace over the past 12 months.

"However, there will be some concern that year end debtor days rose for UK firms to 83 days, showing that the issue of late payment still needs to be addressed. This can disproportionately affect SME firms and with 32% of all payments taking longer than stipulated in contract terms, it is something that requires attention by the whole industry."

The 90-page ACE Benchmarking Report presents a comprehensive overview of the results of the 2017 benchmarking study and highlights trends across a number of business areas and draws a series of conclusions about the health of the sector. ACE commissioned The Centre for Interfirm Comparison to carry out the survey, who also produced separate confidential reports to each participating firm.

• Copies of the ACE Benchmarking Report are available for £399 + VAT. To purchase please email

events@acenet.co.uk

Top bosses honoured at European CEO Awards

Europe's top consultancy and engineering leaders have been named at the European CEO Awards.

onsultancy and engineering leaders from across Europe are celebrating their success following the announcement of the winners of the European CEO Awards 2017.

The annual awards, organised by the Association for Consultancy and Engineering and now in their seventh year, highlight exceptional leadership and business best practice in pan-European engineering and consultancy firms.

This year's winners were selected from a pool of nominated entries from across Europe by a judging panel composed of industry experts and leaders across the continent and chaired by Sarah Ingle,

secretary general of ACE Ireland.

The winners in the five categories of the awards were announced at a gala dinner in London in November. Judging panel chair Sarah Ingle said: "All our finalists demonstrate the depth and breadth of what industry leaders are bringing to their firms, not just in improving performance and productivity, but also in adding value to their employees and giving back to the community.

"This really highlights the importance of the role of consultants and engineers in the world. They touch and influence every aspect of our lives – from mobile phones, to the infrastructure which shapes and helps



Large firms could move jobs from UK post-Brexit

Large infrastructure firms will consider moving jobs from UK if access to skilled EU nationals is not maintained after Brexit, according to a new ACE survey.

early a quarter of large consultancy and engineering firms say they will consider moving jobs out of the UK if Brexit makes it more difficult to move staff around Europe.

The Association for Consultancy and Engineering (ACE), made the claim following a survey of its members which revealed that Brexit is casting a shadow over the UK construction industry, with the consultancy and engineering sector set to be hit hard if access to skilled European workers is not maintained after the UK leaves the EU.

Continued unfettered access to EU skilled nationals is vital to consultancy and engineering firms, many of whom will be designing and engineering some of the UK's major infrastructure projects like HS2, Hinkley Point C and Heathrow Airport's third runway. New research by ACE has revealed that 22% of large consultancy firms will consider moving jobs out of the UK if it becomes more difficult to move staff around Europe, potentially moving thousands of posts



out of the country and jeopardising the delivery of major UK infrastructure projects.

The Effect of EU Migration

on the UK Consultancy and

Engineering sector

Post-Brexit

The ACE research was conducted in conjunction with leading UK law firm Penningtons Manches, to clarify the contribution made to the consultancy and engineering sector by EU nationals.

A report, The Effect of EU Migration on the UK Consultancy and Engineering Sector Post Brexit, for the first time compiles data on the impact of EU migration on

the sector. ACE chief executive Nelson Ogunshakin, said: "The report paints a worrying picture and we will be using its contents in our discussions with the independent Migration Advisory Committee to help strengthen our arguments with hard data from member firms

"It is essential that we make ministers aware of the numbers of EU nationals working in consultancy and engineering firms so that we can better inform government policy making and highlight

> the difficulties the sector will encounter in recruitment and retention in a post-Brexit

Key highlights in the report

- Continued unfettered access to EU skilled nationals is of high importance to consulting engineering firms
- The robustness of the UK infrastructure pipeline is key to staff retention in the UK following Brexit
- 22% of large consultancy firms will consider moving jobs out of the

UK if it becomes more difficult to move staff around Europe On average 10% of consultancy and

- engineering firms' staff are from EU member states which is higher than the construction industry average of 6%
- 67% of EU staff work in London and the south east which is higher than the industry average
- UK workers in the sector are younger than the industry average
- EU nationals are younger than their UK counterparts
- 83% of EU nationals in consultancy and engineering firms are aged 30-39 which makes them older then the industry average.
- EU nationals have been used to help manage the UK's engineering skills gap
- 50% of EU nationals are fee earners
- Continued recognition of UK qualifications will be important to EU nationals' retention

The report can be downloaded from the ACE website at www.acenet.co.uk





Winners of the European CEO Awards 2017 are:

- Sterling Award: Patricia Moore of Turner and Townsend (pictured left with ACE's Mike Haigh, Gavin English and Nelson Ogunshakin)
- CEO of the Year Award (Small Firm): Glyn Evans of Geo-**Environmental Services**
- CEO of the Year Award (Medium) Firm): Alfredo Ingletti of 3TI Progetti
- CEO of the Year Award (Large Firm): Jens-Peter Saul of Ramboll
- Lifetime Achievement Award: Nicolas Jachiet of EGIS
- Lifetime Achievement Award: Keith Howells of Mott MacDonald

Brexit mustn't derail the government in 2018



In the face of continued political uncertainty, a single unified industry voice is more important than ever, writes *Nelson Ogunshakin*.

Regular readers of my column will know that around this time last year I predicted 2017 to be a year of turbulence for the industry and identified five key issues for the sector in the months ahead.

Well, one unexpected general election and hung parliament later, it is hard not to view 2017 as anything other than turbulent! Meanwhile the five key factors I highlighted – the Chinese economy, oil and gas, technology, market consolidation and our political situation -have not gone away and, if anything, loom even larger for our sector, and the UK more widely, as we enter 2018.

However, there is one issue which seems to have dominated discourse for the media, politicians and businessmen alike, Brexit.

While we may be slightly clearer on the UK's negotiating position, we're still no closer on predicting an outcome, nor indeed whether the prime minister's fragile position, with a divided cabinet and a parliament in balance, will last. No doubt the political discussions in 2018 will focus on issues like the length of any transitional deal, whether we will continue to have free

access to an open European market and longer-term trade treaties with other countries. All of which will be crucial for our members who make up an industry that is truly global in its outlook.

Last year saw a busy market in the UK. We witnessed further market consolidation and I predict additional structural changes in 2018. This will create opportunities for an injection of new thinking beyond 2018 and post-Brexit.

Nevertheless, in the near term, Brexit's ripple effects may well be felt by our sector as the general macro-economic slowdown potentially filters through to a weakening in demand for our services. Meanwhile any

"We need to make sure we're speaking in a unified voice to grasp the opportunities that are presented to us... engaging as one with the government to leverage the construction sector deal, for example." further currency devaluation would mean our companies offer even better value for money to foreign investors.

However, one issue that strikes me in many of my conversations on Brexit is how many say: "It will all be OK in the end." While I share their optimism that we will eventually find a solution that is acceptable to both the electorate in the UK and the EU nations, I worry that the continued focus on Brexit is impacting the "day-to-day" work of government. It is for this reason that ACE will continue to engage on behalf of its members, making sure that infrastructure is not set aside to be discussed at an undisclosed date in the future and that the important work continues on delivering our national project pipeline.

In the face of this continued uncertainty, combined with the recent resignation of Lord Andrew Adonis as the chairman of National Infrastructure Commission, we need to make sure we're speaking in a unified voice to grasp the opportunities that are presented to us.

We need to be engaging as one with the government to leverage the construction sector deal, for example. Furthermore, we should be making the most of new opportunities for engagement with the metro-mayors, growth corridors and regional cities of England, especially in the Midlands and north west. Finally, we should be coming together on the major issues facing our industry, such as the skills gap and new technology.

As part of this process, I oversaw a restructuring of ACE last year to ensure we continue to be fit for our members' needs and agile enough to respond to this everchanging landscape. ACE now has a strong and capable team who will be better connected with our members and deliver sharper engagement at every level. Thanks to these changes fully supported by the ACE board, I am certain ACE will become an even stronger voice for the numerous shared interests of our members in the years ahead.

On behalf of all the ACE board and staff, I would also like to take this opportunity to wish everyone a very happy and prosperous 2018!

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On behalf of I would also list wish everyone prosperous 20.

Dr Nelson Ogum of the Association Engineering.



Lead UK negotiator David Davis pictured in Brussels with his EU counterpart, Michel Barnier.

Dr Nelson Ogunshakin OBE is the chief executive of the Association for Consultancy and Engineering.

Keeping the government 'honest' on the green agenda



The creation of a new body to hold the government to account on environmental issues is significant and could have implications for decades to come, says *Matthew Farrow*.

I've been lucky enough (or unlucky enough, depending on your view!) to work with many ministers over the years in my career at different trade associations. While they varied in personality and political affiliation, they generally divided into two camps. The first camp, by far the majority, was those whose main focus was what you might call 'safety first': avoiding any action or utterance that might harm either their own careers or would be seen as not in tune with the general values and mood of their party.

Bear in mind that it is rare for ministers to have prior expertise or in-depth understanding of their portfolio. So they might think: "I am a Conservative minister, therefore I will broadly take the advice of my officials but will err towards options that promote enterprise and business" or alternatively "I am a Labour minister, therefore I will broadly take the advice of my officials but will err towards options that promote social inclusion".

The second group, the minority, are also unlikely to have any prior expertise on the topic, but have a genuine intellectual interest in the issues involved and back themselves to think these issues through from first principles and draw conclusions regardless of whether they fit with party orthodoxy and officials' advice. Of the eight environment secretaries I've worked with, the only ones who fit into this second category were David Miliband (who on his first weekend in the job, summoned his senior officials to a Sunday afternoon meeting to discuss "What is Defra for?"), and the current incumbent, Michael Gove.

Six months ago, the official government view, loyally espoused by Gove's predecessor Andrea Leadsom, was that once Brexit removed the ability of the European Commission to fine the UK for failing to meet environmental targets there was no need for any replacement mechanism – parliament would hold ministers to account.

Within weeks though of Michael Gove replacing Leadsom, he had changed a number of policies and this one he fully reversed. The official line now is that there is a need for a new body to be created to hold future governments to account and there will be a wide-ranging consultation this year as to how such a body would work and what scope it should have.

This will be one of the most significant green issues of 2018, because the shape and powers of the new body could have implications for decades to come. Take the passing phrase in the industrial strategy about "infrastructure upgrades" being required to "enhance natural capital". Left to their own devices, ministers may let this line, buried in a 250-page document, be forgotten. An independent body however

"There is a need for a new body to be created to hold future governments to account and there will be a wide-ranging consultation this year." might decide to sanction government if it decided that road or housing schemes failed to improve biodiversity for example.

Before we get to that, though, many issues need to be resolved. Will the body cover just England or the whole of the UK? Will it focus on holding central government's to account or include scrutinising of environmental actions and policies at local government and quango level as well? Will it mimic the EU's scope and just look at environmental policy which used to be within the EU control, or will also scrutinise performance in areas such as contaminated land where most legislation is nothing to do with the EU?

And perhaps most importantly, what sanctions will it have to bring ministers into line? One proposal is that it should be able to levy hefty fines which government would have to pay into a National Environment Fund controlled by a non-political commission, to be used at parliament's discretion.

Alternatively, of course, Michael Gove might be reshuffled before any of this has happened, in which case we could have another change of course. Interesting times...

Matthew Farrow is director of the Environmental Industries Commission, the leading trade body for environmental firms.



The current environment secretary, Michael Gove. He decided (unlike his predecessor) that a mechanism was needed that could ensure the government met its environmental targets.

Meeting voluntary standards to maximise the triple bottom line

Sustainable procurement and careful management of supply chains are vital to achieving a triple bottom line 'people, planet and profit' approach, says Penny Godfrey

PLANET

ustainability has become a buzzword synonymous with environmental change, particularly within the construction, engineering and infrastructure sectors. It has much deeper business implications however, with many adopting a triple bottom line approach of 'people, planet and profit'. While reducing our carbon footprint and utilising green resources are key priorities that continue to move up the agenda, social and economic sustainability remain significant issues.

Sustainable procurement and careful management of supply chains are vital to achieving the 'three Ps' for organisations. This applies to firms of all sizes and across all sectors, from public sector buyers to private suppliers, whether they be a small civil engineering firm or an international construction contractor. It is a holistic approach to sustainability that incorporates considerations of consumer issues, fair operating practices, labour practices and human rights alongside the green agenda. All connected by responsible governance.

The International Organisation for Standardisation worked for four years to develop ISO 20400: 2017 guidance on sustainable procurement. It involved 52 countries and their national standards organisations, all under the umbrella of ISO (PC277). The ideal set out by the standard is: "procurement that has the most positive environmental, social and economic impacts possible over the entire life cycle".

While only guidance on sustainable procurement, rather than enforced legislation, it provides useful insight into implementing practical sustainability. It is cognisant of how sustainability impacts the different levels of the procurement activity from policy, strategy, organisation and process and does not replace legislation, policy and ethical frameworks that regulate procurement activities.

PROFIT SUSTAINABILIT

PEOPLE

So why does this standard matter? How does it benefit organisations and the wider industry?

Earlier this year, Balfour Beatty was the first company in the world to be assessed against ISO 20400 and highlighted the value of knowing what best practice is. Aaron Reid, head of sustainable procurement at Balfour Beatty, said at the time: "The standard gives us a clear framework to determine 'what good looks like' in terms of sustainable procurement and how we compete against it. The assessment itself was robust, practical and coherent. It held a mirror up to us as a business, enabling us to uncover areas of existing good practice to be shared and

"For those who don't see the need or value to adopt these best practices... it's not about box ticking.



Penny Godfrey, Millstream

areas for improvement to focus upon."

Here it is worth highlighting that different sectors will be impacted by different aspects of sustainability. As demonstrated by Balfour Beatty, construction has particular responsibilities

in relation to the environment but health and safety is also key as are local employment issues. It is about maximising an organisation's positive economic, environmental and social impact in the communities in which it operates.

Given the standards are a voluntary code, many organisations may think this isn't worth the effort.

In particular, private SMEs and those who are time poor or lack the procurement knowledge perhaps don't see the need or value to adopt these best practices. However, it's not just about box ticking. Adopting such standards makes good business sense. Procuring sustainably can mitigate risks, be a differentiating factor, improve industry standards, and maximise benefits for the organisation, its customers and suppliers, local community and to some extent, the wider world. For those procuring on behalf of the public sector or looking to win more work in this sector, where efficiency and transparency are key considerations, sustainable procurement will bring specific benefits and help stand businesses apart from competitors during the tender process.

The 'three Ps' - people, planet, profit can only be achieved through collaboration and engagement between all parties across a supply chain. We are already seeing a sea change towards the principals that the new ISO guidance embodies, however we'll have to wait and see the real impact, particularly given it's not mandatory. Standards are reviewed every five years so adopting these best practices now puts you a step ahead of the competition and well placed to take on any legislative regulations should they come into play in the future.

Penny Godfrey is general manager at procurement specialists, Millstream, providers of services including MyTenders and Tenders Direct.

Northern infrastructure



A historic opportunity to transform infrastructure

in the north

Transport for the North's chair *John Cridland* says that the organisation offers the best opportunity in years to begin to turn around decades of underinvestment in the region's infrastructure.

Then the statutory instrument to enable Transport for the North to become a statutory body was laid before parliament, it was an important step in our journey to become England's first subnational transport body. It was also a step towards giving the north of England the voice and powers it needs to move forward.

Transport for the North is a unique partnership bringing together civic and business leaders from across the whole of the north of England. Collectively we have welcomed the powers which are broadly in line with those envisioned in 2015 when the organisation was formed.

We have obtained formal support from 56 local authorities across the whole of the north, including all 19 of our constituent authorities. Achieving this support is a tremendous achievement and we are delighted that this vote of confidence from our partners shows both the importance of investment in transport infrastructure and the evidence-based approach we have taken to assessing the north's needs and opportunities.

Having been independent chair of Transport for the North for two years, I'm impressed by the progress made. Through Transport for the North I have seen political leaders getting together and agreeing the best way forward for the north.

Transport for the North represents an historic opportunity. For the first time, civic and business leaders from every part of the north have come together to identify and agree upon the gaps in infrastructure that are holding the region back. The north is

ready to speak with a united voice and believes it is essential that this opportunity is not missed.

We all know that the north of England has suffered from long-term under-investment in its transport infrastructure. We also all know that the economic gap between the north and the rest of England is persistent and cannot be solved through transport investment alone. Yet there is unanimous agreement from both political and business leaders that connecting the region with rapid and reliable road and rail links is vital if we want a prosperous future.

We all want a Northern Powerhouse, yet it currently takes longer to travel from Liverpool to Hull than it does to get the train from London to Paris. At present the north's road and rail links are too slow and unreliable. This means that, instead of working together as one economy, the north operates as a collection of smaller, separate clusters which can never on their own be strong enough to compete with London.



"I have seen political leaders getting together and agreeing the best way forward."

John Cridland, Transport for the North

For example, the journey from Sheffield University's Advanced Manufacturing Research Centre to the cluster of high-tech manufacturers around Preston would currently take over two hours whether your travelled by road or rail – long enough that students graduating with the skills needed would have to decide to move to Lancashire if they want to take up employment there.

The primary function of Transport for the North is to identify and develop the transport infrastructure improvements needed to transform the economy of the north of England. Vital to the delivery of this is the development and implementation of a long-term transport strategy for the north. For the past 18 months, we have been working with our partners on our *Strategic Transport Plan* (to be published on 16 January 2018), which identifies the north's priority areas for transport infrastructure investment up to 2050.

Becoming a sub-national transport body will make Transport for the North a legal entity and a formal partner with government. Through Transport for the North, the leaders of the north of England (which if it was a country would be one of the ten biggest economies in Europe) will be able to identify the infrastructure priorities that the region wants and needs, not those that Whitehall thinks it needs. It will ensure plans we are developing in the Strategic Transport Plan can form the priorities for both Highways England's and Network Rail's future investment programmes. This is what Greater London has been doing for years through Transport for London.

Transport for the North was formed only three years ago and we have grown in a very short space of time. This is the best opportunity we have to begin to turn around decades of underinvestment and ensure the north speaks with a strong, unified voice on what it needs from its transport investment.

John Cridland is the independent chair of Transport for the North.

