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INFRASTRUCTURE Intelligence

Produced for the industry by the Association for Consultancy and Engineering

Amey's Andy Milner on change and opportunity

PLUS: ● Health and wellbeing ● London ● Northern Powerhouse ● PFI legacy ● Stakeholder engagement

INFRASTRUCTURE Intelligence

Produced for the industry by the Association for Consultancy and Engineering
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MESSAGE FROM THE EDITOR

Speaking to people across the industry, I'm increasingly struck by the regularity that the issue of people comes up in conversation. This might be staff in construction firms who deliver great work across the country, or the public who need convincing about the importance of major (and minor) infrastructure projects. The industry needs to pay more attention to people and the effect that they have on the sector and that's why this issue features the growing importance of wellbeing in the workplace (p22-23) and also stakeholder engagement (p20-21) and the need to win people over to our cause.

In my view the industry has made big strides forward in the way it engages with people at all levels and that goes a long way to positioning infrastructure as an attractive people business to work in. Of course there is no room for complacency and improvements still need to be made, but we should always accentuate the positive because that has an effect on how people view the sector.

Elsewhere in this issue we look at London's new environment strategy (p8) and the mayor's plans to create more affordable housing (p9). To balance things up geographically, we report on moves to create a new 'Council of the North' and give an update on the ongoing efforts to improve rail transport across the region (p10-11).

Our centre page feature is an extended interview with Amey chief executive Andy Milner, who spoke to us about his first 18 months at the helm of the company and the not inconsiderable challenges he's faced (p16-18). We've also got the usual selection of excellent opinion pieces including articles on getting paid on time (p24), handling large scale recruitment (p30), infrastructure investment (p31) and much more.

To find out more of what exactly, you'll just have to read the magazine – and as always, don't forget to let us know what you think about our content and if you have an idea for something we should cover then please do get in touch.

Andy Walker,
editor, Infrastructure Intelligence

Contents

Images reveal how new Edinburgh Waverley platforms will look

Network Rail has released images showing how Edinburgh Waverley's extended platforms will look once complete.

Engineers are currently working in Scotland's second busiest station to extend platforms 5 and 6, to the east of the station, and 12, to the west. The project will prepare Waverley for the arrival of Virgin East Coast's new Azuma trains and ScotRail's new class-385s.

As the project enters its next phase, work will soon begin to extend platform 12 further into the station and to remove redundant buildings on platform 11.

To enable these vital enhancements to take place, the escalators on platform 11 will close to the public on Saturday, September 2, and reopen in early 2018 when the extended platform 12 comes into service.

Closing the escalators is the safest way to deliver the works as the need to erect hoardings around the platform extension site will reduce circulation space at the foot of the escalators creating the potential for overcrowding. Additional station staff will also be on-hand when the escalators close to help passengers.

Rodger Querns, Network Rail programme director, said: "Extending Edinburgh Waverley's platforms is vital to the long-term future of the station and paves the way for the introduction of two new state-of-the-art train fleets.

"Completing such a significant piece of engineering work in one of the country's busiest stations is a significant challenge and one which will mean some short-term disruption to the platform 11 escalator. However, we are committed to carrying out these enhancements as quickly as possible and with the minimum of inconvenience for passengers."

The enhancements are being delivered as part of the Scottish Government's Edinburgh Glasgow Improvement Programme (EGIP) and the Department for Transport-funded Intercity Express Programme (IEP).

The infrastructure works, and new rolling stock, will help to transform travel on both routes increasing passenger capacity and reducing journey times – by around 10 minutes between Edinburgh and Glasgow and by around 20 minutes between the two capitals.

Garden Bridge project officially closed

The Garden Bridge Trust has admitted defeat in an announcement that confirms Sadiq Khan's removal of public guarantees for maintenance costs has finally ended all hope for the £200m project. Khan's decision to remove a previous pledge to underwrite the bridge's circa £2m of annual running cost came in April this year, after a review into the project by Dame Margaret Hodge, commissioned by Khan. Hodge concluded it was better to scrap the scheme rather than risk costs spiralling further at taxpayers' expense.

The Trust claims that it had found another benefactor willing to pay for the bridge's maintenance, but admits that this was still not enough as mayoral support was seen as essential for the project to succeed. Writing to Khan, the Trust's chairman, Lord Mervyn Davies, said: "It is with great regret that Trustees have concluded that without mayoral support the project cannot be delivered. We are incredibly sad that we have not been able to make the dream of the Garden Bridge a reality and that the Mayor does not feel able to continue with the support he initially gave us. It is a sad day for London because it is sending out a message to the world that we can no longer deliver such exciting projects."


Review decided it's best to scrap project.

Buy-out means merger is on

US engineering mega-firm Jacobs has bought CH2M in a takeover deal worth $3.27bn (£2.47bn).

The deal was confirmed in August, following weeks of speculation that the two companies were in dialogue about a possible merger. That speculation intensified further after both firms declined to comment on the rumoured talks.

Jacobs, who say the buy-out will see the creation of a $15bn (£11bn) global business, has been reportedly keen to gain more market share in UK and international infrastructure. The takeover will see the formation of a 74,000-strong engineering consultancy to rival AECOM in size at $17bn.

The two firms have entered into a definitive agreement under which Jacobs will acquire all outstanding CH2M shares in a cash and stock transaction. The deal will see 60% paid in cash and 40% paid in Jacobs common stock. The transaction also includes £314m of CH2M's net debt.

Jacobs have said that they expect to make £113m of cost savings as a result of the merger. Savings are expected to come from real estate, optimisation of corporate operations, alignment of organisational structures, procurement and IT systems.

KIER TO COMBAT SCHOOLS' MISPERCEPTIONS ABOUT CONSTRUCTION

Kier has launched a new initiative to combat misconceptions about construction in UK schools, as part of a drive to attract new talent into the industry. As part of its new 'Shaping your world' initiative Kier has pledged to release 1% of its workforce to act as school career ambassadors for construction.

LANE RENTAL FOR UTILITIES AND CONTRACTORS TO GO NATIONAL

The Department for Transport is consulting on options for allowing local authorities to introduce lane rental charges for utilities and contractors after success with pilot schemes in London and Kent. Widespread use of lane rental charges could reduce traffic congestion by up to half, by encouraging utilities contractors to better plan coordination of roadworks schemes, DfT says.

CHANCELLOR FLIES NORTH TO REASSURE THE METRO MAYORS

The chancellor Philip Hammond has visited projects in the north of England and met the newly elected metro mayors to reaffirm the government's message of continuing commitment to the Northern Powerhouse agenda. Hammond viewed progress with construction of the Ordsall Chord of the Northern Hub rail project in Manchester and the Seacroft housing development in Leeds.

HS2 LOOKS FOR CONSTRUCTION FIRMS FOR £3BN LONDON STATIONS WORK

Work to upgrade Euston station and deliver a brand new transport hub at Old Oak Common ready for the arrival of HS2 have taken a step forward with the start of the HS2's search for the firms that will build the two London stations. Overall, the investment at Euston and Old Oak Common is worth £3bn and expected to help unlock 79,000 jobs and 29,000 homes around the stations.

GOVERNMENT PUBLISHES TERMS OF REFERENCE FOR BUILDING REGS REVIEW

The government has published the terms of reference for the independent review of building regulations and fire safety commissioned following the Grenfell Tower fire tragedy. The review will urgently assess the effectiveness of current building and fire safety regulations and related compliance and enforcement issues, with a focus on multi-occupancy high rise residential buildings.

NETWORK RAIL DOUBLES NUMBER OF APPRENTICESHIP PLACES

Network Rail is set to double the number of apprenticeships offered nationwide, with 600 places to be offered over the next 12 months across a range of disciplines. These include new opportunities in cyber security and digital railway, as the organisation looks to future-proof the skills it needs to enable the travelling public to make over four million journeys a day.

Change is happening and we're making a difference

As ACE chairman *Mike Haigh* reaches two-thirds through his year in office, he spoke to *Infrastructure Intelligence* about how his first eight months in post have gone and what he's learned.

When I took over as chairman of ACE, I targeted better industry integration, effective use of digital information and improving diversity and inclusion as my key priorities during my 12 months in office. My eight months as chairman have convinced me that these are absolutely the right things to be driving.

When I was at the ACE Awards earlier this year, not only was I able to use the event as a platform to continue to drive all of these things – and I have used lots of occasions during the year to try and make sure that the industry is embracing all these issues – it was interesting to see that people were talking about these issues and that the winners these issues were also highlighted. Not just as a single agenda either. The shortlisted entries for diversity also showed strong inclinations for better industry integration and use of technology, so we can see that these things are cross-cutting and coming together and that feels really good.

Looking at diversity, there's a lot of talk about skills shortages and uncertainty in the marketplace in terms of skill availability. I think we have had a lot of success in pushing diversity as an industry and though there is a lot more to do, we are moving firmly in the right direction. It gave me huge pride to be involved with the Royal Academy of Engineering in launching their LGBT Plus videos earlier in the year and there have been several things like this taking place.

Still in the context of skills shortages, making sure that the industry makes available different routes to professional qualification is important. ACE is doing a really great job here with apprenticeships and the work of its Training Apprenticeship Consortium group, in not only benefiting members but also playing a leading role in helping to define how apprenticeships move forward.

As far as the infrastructure industry is concerned, are we really making progress in bringing the entire sector together in a more collaborative way? I have tried to push this during the year and I think there is a momentum. We see things like Project 13, the National Infrastructure Commission, the Infrastructure Projects Authority and the Construction Leadership Council and people are really talking about the need for a different way of delivering infrastructure which is much more integrated and collaborative. We are seeing this starting to come through in behaviours, with collaboration now being a major part of the procurement process.

As ACE and individual organisations, we need to keep up the pressure. There are some great lessons to be learned and what you have seen in the water industry over the last 15 years, with a move towards much more integrated delivery, has shown that efficiency can be generated but it does need a different approach to procurement and a different mind-set.

Moving onto technology, as an industry we absolutely have to embrace digital technology and the use of data in finding better and more sustainable solutions. It's really excellent that in November ACE is hosting the first ever CIO Conference for technology leaders in our industry, which we will take as an opportunity to be able to showcase some of the ways that data is now being used differently. Using new technology better can make the industry more attractive and exciting to new people too. It is a changing world that we operate in and we have to attract the new generation.

ACE has a huge role to play in being a voice for our industry and in bringing together all of the great things that are happening in a way that gives them a louder voice and a greater ability to influence. Over the last eight months I have seen that first hand. I've found it both a challenge but also exhilarating to feel that in my role as chairman I have that voice and I am listened to in a way that is different to simply being a senior person from one organisation. I hope that we will continue to see ACE playing that leadership role and being able to demonstrate that we are making a difference.

Mike Haigh is group managing director at Mott MacDonald and the current chairman of the Association for Consultancy and Engineering.

"ACE has a huge role to play in being a voice for our industry and in bringing together all of the great things that are happening in a way that gives them a louder voice and a greater ability to influence."

We have had a lot of success in pushing diversity as an industry, though there is a lot more to do.

The Hansford Review – keeping investment on track

The Hansford Review's recommendations for driving private sector investment in the rail network are welcome news for UK infrastructure, writes *Patricia Moore*.

Successfully taking forward the recommendations of the Hansford Review will rely on strong partnerships founded on customer focused outcomes, agile financing options and well-defined contracts that perform for both the network operator and the construction sector.

The challenges facing the UK rail network are well documented. From Beeching's cuts through to the creation of new routes with HS2, successive governments and network operators have grappled with the need to maintain capacity and investment in an ageing network, while minimising the cost to the taxpayer.

With its central ambition to boost private sector investment in the rail network, the completion of Peter Hansford's review and publication of his report last month has been widely welcomed. Comprehensive and considered, it sets out a route map for building a best in class network based on bringing in private funding and finance to deliver both upgrade works and new projects.

Private public partnerships (PPPs) provide strong potential for addressing large infrastructure funding gaps – put simply; governments cannot afford it on the public purse alone. In the UK, political controversy around the much critiqued private finance initiatives (PFI) in the 1990s and 2000s often overlooks the fact that the PPP model has actually been successful on the majority of the projects. The construction and infrastructure sectors have admittedly had their fingers burned by PPP in the past, but the sheer scale of this kind of procurement has proved that it does work and that it has a future too.

So how do we garner private finance into the rail industry with all of this in mind?

Guaranteeing long-term performance

A clear message coming from Hansford's review is that the rail sector needs to provide strong reassurances to private capital that it can avoid the problems that have plagued some past PPP initiatives.

This means highlighting the success stories of PPP in the UK or globally to shake the negative perceptions that PPP/PFI have gained. Through our work with organisations like the Global Infrastructure Hub, we are seeking to shift some of these perceptions through development of leading practices related to PPP concession management.

For private funders to potentially invest in partnership-based rail projects in the future, they will be looking at returns for decades to come and therefore a whole life view is necessary to not only attract investment but to maintain confidence. It is important to ensure that all stakeholders in a programme are engaged with a whole life view at the earliest stage and have long-term performance in mind. This provides the certainty and predictable returns which are private investors' overriding objectives – and these themes act as golden threads running through Hansford's 12 recommendations.

A critical period during the lifetime of successful major infrastructure assets is during the programme set up. During this stage there is a strong focus on predictability which is fundamental to the original contract and programme, as it will ensure the relationship between the private and public sector partners is collaborative rather than combative.

Building upon this, research has demonstrated that one of the greatest challenges to delivering a successful programme is a lack of focus on the transition from contract set up to the construction and, ultimately, operational phase. Essentially – not being clear about the project direction from start to finish. The best route to building a successful programme model from the outset is to shape it to meet the needs of both private and public sector parties, establishing ground rules and processes that will guide the project in a way that accommodates the objectives of each partner.

Embedding commerciality

Of all Hansford's recommendations, a consistent understanding within the network operator of the value, opportunities and risks brought by different types of private sector funding models is the most critical.

When it comes to funding, a one-size-fits-all solution will not work and to realise the full potential of private sector involvement, there needs to be a much broader consideration of the funding mechanisms that can be used to bring investment to the network – from design and build through to the transfer or operational management of an asset.

Each scheme offers a unique set of opportunities to third party investors and benefits to end-users and regional communities; the challenge for the network operator is how to optimise the risk transfer.

This requires a particular set of skills and expertise. Embedding them is essential to enabling greater commerciality and innovative thinking, and will accelerate several of Hansford's other findings.

Building capacity, underpinned by certainty

This is especially true of those recommendations designed to create new capability and capacity within the sector, including to the call to establish a forward view of opportunities that the private sector can target and plan for.

"Ensuring that programmes are set up for success will rely on establishing strong partnerships."

Patricia Moore

Mark Farmer's review of the construction sector, released at the end of 2016, identifies the need for a strong, predictable pipeline of work to enable businesses to invest in the innovative techniques, digital skills and methods that will boost productivity.

This pipeline must be robust and attractive to private investors to leverage private finance in infrastructure projects and programmes. The pipeline should also include a range of differing sized projects; not just mega schemes designed to boost national economy. Small and medium sized projects are important for regional and local growth and attract a different type of investor that would typically target multi-billion pound investments. For private investment to be achieved, clarity and confidence in scope from the outset is also essential, as without it predictability of return diminishes overnight for the investor. Building a pipeline is therefore half the battle!

On a network-wide level, this is an opportunity to build new capability and capacity to an even greater degree, ensuring that investment in one area can be redeployed to another. Hansford's recommendations around creating an early development fund to sponsor innovative ideas as well as initiating a series of pilot projects which can be used to test market interest in a variety of project types will act as a catalyst to kick start this programme, encouraging private sector partners to start making the investment the sector needs.

Transparency and trust

Creating a consistent pipeline of work needs to be run hand in hand with making sure that work delivers a reliable outcome for all parties, underpinned by complete transparency and standardisation of project scope.

The history of private sector investment in public assets is littered with cases of scope creep and rail is no different. As Hansford notes, several projects continue to be caught out by requirements to bring old infrastructure up to modern standards, which may have been omitted from initial assessments.

Again, avoiding these situations relies on greater focus up front on programme planning. Programmes must be set up with the recognition that some flexibility may be required as they progress, but establishing a collaborative and cooperative approach to what falls within or beyond the scope of a contract from the outset will help build the trust that is needed to underpin a long term partnership.

Towards high performance partnerships

Network Rail has committed to adopting the recommendations from the Hansford Review and to place them at the core of its next control period. The speed at which the operator is looking to bring about reform, for example around streamlining responsibility for asset protection, is encouraging, and done well provides a huge opportunity to build capability and capacity for the infrastructure sector as a whole.

The devil will, however, be in the implementation. Ensuring that programmes are set up for success will rely on establishing strong partnerships that deliver predictable returns for private sector partners, consistent outcomes for the network operator and a reliable service for the fare paying public.

Patricia Moore is managing director of UK infrastructure at Turner & Townsend.

London Mayor Sadiq Khan is consulting with the public and businesses on an environment strategy for the capital and promising to implement "big, bold and sometimes difficult policies". *Andy Walker* reports.

Mayor pledges to make London the greenest city in the world

London mayor Sadiq Khan says his draft *London Environment Strategy* will do what is necessary to address the capital's air quality problem which he described as "nothing short of a public health crisis". More than 9,000 Londoners die prematurely every year as a direct consequence of air quality in the capital, which is so dirty it repeatedly breaches legal limits.

"As mayor, I have a responsibility and a duty to act. In order to match the scale of the challenge we face, we need to implement big, bold and sometimes difficult policies," said Khan. "These might not always be popular, but when the health of all Londoners is at stake we can't shirk these challenges or shy away from doing the right thing," he said.

The draft environment strategy includes a number of proposals to improve air quality. A T-charge will be introduced from October this year and an Ultra Low Emission Zone by 2019. The T-Charge (aka the Toxicity Charge) is a £10 levy on older vehicles entering the centre of London. It will apply to all vehicles which do not meet Euro 4 emissions standards – typically those registered before 2006.

London's bus fleet will be made zero emission by 2037 and fossil fuels will be phased out in the taxi and private hire fleets. The mayor will work with government and other partners to seek reductions in emissions from aviation activity in London and the south east and he will also seek reductions in emissions from rail transport and at stations.

Better information will be provided about air quality, especially during high and very high pollution episodes and the planning system will be used to help ensure that new schools and other buildings that will be used by people who are particularly vulnerable to pollutants are not located in areas of poor air quality.

The mayor will also promote and prioritise more sustainable travel in London including walking, cycling and public transport, as part of his *Healthy Streets* approach.

The introduction of a new Air Quality Positive standard is also being considered so new building developments contribute to cleaning London's air by funding the implementation of air quality plans to help schools in some of London's most polluted areas reduce their pupils' exposure to poor air.

Other headline policies from the draft strategy include:

● **Green Spaces**: A new £9m Greener City Fund for London to create and improve green spaces to help make London the world's first 'National Park City'

● **Energy**: Ambition to make London a zero-carbon city by 2050. London's first solar action plan which sets out the mayor's actions to more than double London's solar energy generation capacity by 2030.

● **Fuel Poverty**: A new fuel poverty action plan. This includes support through £10m energy efficiency delivery programmes,

● **Waste**: Setting minimum recycling standards to meet the mayor's target to recycle 65% of London's waste by 2030 and help cut food waste by 20% per person by 2025.

Commenting on the strategy, Sadiq Khan said: "London is already the greatest city in the world, now I want it to become the greenest city in the world. The measures outlined in this strategy show that I'm determined to take meaningful action to tackle the most urgent environmental challenges facing our city immediately."

Matthew Farrow, director of the Environmental Industries Commission, said: "We welcome the draft *London Environment Strategy*. It is ambitious and comprehensive and we will be looking at the detail and responding to the proposals. The determination to address the full range of environmental issues (for example non-transport as well as transport emissions on air quality and the green spaces and natural capital agenda) is encouraging as is the ambition to go beyond legal requirements for example on recycling rates and particulate levels.

"There are also some good examples of recognising the complexity and inter-connected nature of environmental challenges – such as the identification of schemes to simplify waste collection routes which also improve air quality. The recognition of the economic contribution of London's environmental businesses is also welcome. The challenge will be implementing such an ambitious agenda when so many environmental powers are split between Whitehall, the mayor and individual boroughs."

The consultation on the strategy will run until 17 November.

View the draft *London Environment Strategy* and take part in the consultation at https://goo.gl/MMbzGe

New housing guidance means that 50% of new homes built on public land in London will have to be affordable to benefit from fast-track planning rules.

Affordable housing boost for capital


Mayor Khan seeks a new approach.

At least half the new homes built on public land in London will have to be affordable to benefit from faster planning permission under a new approach to development set out in new guidance published by London mayor, Sadiq Khan.

The new Supplementary Planning Guidance (SPG) sets out the mayor's approach to increasing the levels of affordable housing, while also speeding up decisions in the planning system. It will help raise affordable housing levels from the low of just 13% given permission that Khan inherited from his predecessor when he became mayor.

Khan's new approach offers developers of private land a fast-track route through the planning process – bypassing costly and protracted viability negotiations that have become the norm for applications in London – if they meet a strict minimum of 35% affordable housing without public funding. Developments on public land will have to achieve at least 50% affordable housing to qualify for the fast-track route.

All developments should get underway within two years of planning permission being granted, or they will face detailed scrutiny of the financial modelling behind their plans. Any developments that do not meet the minimum affordable thresholds will also face further scrutiny as they near completion – with financial details in the application being published online for the public to see and a share of any unexpected profits being re-invested in more affordable housing.

On the back of the SPG, published following an extensive consultation period, City Hall officials have written to all London councils urging them to make use of the mayor's expert viability team if developers try to reduce affordable housing levels after planning permission has been granted.


More affordable housing is needed.

Khan is pushing for a greater role after the issue came to a head in June, when developers put forward plans to cut affordable housing at Battersea Power Station by 40% from its original planning consent. In this case the mayor offered his team to work with the council to scrutinise the developers' financial modelling and ensure the maximum amount of affordable housing was secured, though the offer was not taken up by the local authority.

Khan, said: "The housing crisis is the biggest challenge facing Londoners today with too many people, particularly the younger generation, being priced out of our city, unable to afford a home. We've already agreed to put £1.7bn of the investment that I secured from government into 50,000 new and genuinely affordable homes to rent and buy. This investment will work hand-in-hand with the new approach for developers, which will allow them to benefit from a fast track through the planning system if they offer more affordable housing and get building quickly."

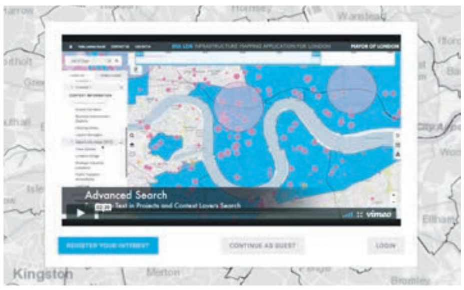
Improved London Infrastructure Mapping Application launched

A second phase of the London Infrastructure Mapping Application (IMA) has been launched, writes *James Robertson*. The IMA is a free online tool that displays infrastructure and development data from a range of sources in an easy to use map that can be filtered based on the interests of users.

Users create their own bespoke map by using 'layers' on different types of infrastructure projects – such as development, transport and utility projects – to display different results. Users can further refine the results by cost, funding or planning status (such as projects with secured funding and approved plans), data source, or a specific location. Individual projects can then be selected to find out more information.

Users can also use 'overlays' to add further context to results. These include opportunity areas, housing zones, air quality ratings, broadband 'not spots' and even accessibility to public transport. Overlays allow users to analyse projects or particular areas against a range of planning policies and research.

The updated version allows users to download data from their map results for use in other GIS tools. Users can also import external data to the IMA, allowing for



further personalised maps.

One aim of the mapping tool is to encourage infrastructure providers – including engineers, contractors and developers – to work together in order to plan better and save resources.

Jules Pipe, deputy mayor for planning, regeneration and skills, said: "Through this application, we have been able to bring data from across a wide range of sectors so that infrastructure providers have at their fingertips everything they may need to know about how the city will grow, and can take decisions accordingly."

The IMA is currently available in two versions, a public interface available to all users and a private version with additional datasets accessible through registration with the Greater London Authority.

The public version is now available at **http://maps.london.gov.uk/ima/**

Taking control of tr

Local council leaders and mayors call for a new 'Council of the north' to represent the region to government, as the transport secretary says local leaders should take control of their transport network to provide better value for taxpayers.

Leaders from across the north have called for the setting up of a new representative body of political, business and other leaders to speak with one voice for the north.

The leaders, who were meeting in Leeds at the Northern Transport Summit in August, said that a new body was needed to bring the northern perspective to crucial long-term issues currently being debated, such as Brexit and transport funding. The body will also be able to make the case for further devolution of power from Westminster to the north of England.

The summit also called on government to honour the promises it has already made to the north to improve rail infrastructure and pledged to build a broad-based campaign, working with northern members of parliament, to win parliamentary backing for its demands.

The new pan-northern body, already being dubbed by some as a "Council of the north", could have a critical role to play in forthcoming Budget and Brexit discussions. Greater Manchester mayor Andy Burnham said: "The north is getting

Grayling: "Take control."

organised and ready to get its voice heard more loudly than ever before. By working together with our council leaders, businesses and MPs – alongside trade unions and the community and voluntary sector – we can ensure a strong voice and a fair deal for the north. If we get this right, a new 'Council of the North' could mark a real change to the politics of our country."

The unprecedented gathering of business and political leaders was called after the transport secretary Chris Grayling appeared to cast doubt over long promised improvements to northern railways. Hitting back, Grayling challenged the north's political and business leaders to "take control" of its transport network. "It is central government's responsibility to provide funding and a delivery structure that ensures efficiency, value for money

The case for end-to-end electrification of the Transpennine Route Upgrade is now overwhelming and business and political leaders in the north need to start arguing for it, says *Adrian Marsh.*

Making the case for trans-Pennine electrification

In July, the government decided to scrap the planned electrification of routes between Cardiff and Swansea, Kettering, Nottingham and Sheffield, and Windermere and Oxenholme, saying that it would instead introduce faster trains with more seats and better on-board facilities.

We should not let this happen to the Transpennine Route Upgrade (previously known as Trans-Pennine Electrification). Electrification is a key plank of this investment in infrastructure. If elements of the upgrade are removed or watered down by, for example, introducing bi-mode trains in place of end-to-end electrification, the benefits will be downgraded or lost.

The transport secretary appears to favour bi-mode trains in order to save some of the overheads of full electrification. However, the feeling of many in the rail industry is that this would be a short-sighted decision. Although the Great Western 'electrification' project ran into many difficulties, we should not lose faith in Network Rail and its ability to deliver on electrification.

The rail industry is finally accepting the need to speak out on key issues and adopt politically astute messaging to support its case for obtaining both funding and consent for major infrastructure and rolling stock investments. Now that adequate funding for one of our most important national rail services investments is far from certain, those who believe in it need to make a strong case for electrification.

The Transpennine Route Upgrade is a vital infrastructure development for the north. Current rail connectivity along the Manchester–Leeds–York corridor is woefully inadequate for such a vital economic and social axis. And we cannot wait for the proposed cross-Pennine Northern Powerhouse Rail route, as that will not see service for decades and may never be built.

Rail services in the north are becoming increasingly important. While currently far fewer people in northern England use trains for commuting, leisure and regional intercity journeys compared with those in London and the south east, driving to work or visiting the north's main urban centres is incredibly frustrating owing to the increasingly congested roads.

Sadly, the railways in their current state offer poor alternatives and often-terrible passenger experiences. Network Rail and

ansport in the north

and accountability. But beyond this, I want the north to take control," said Grayling.

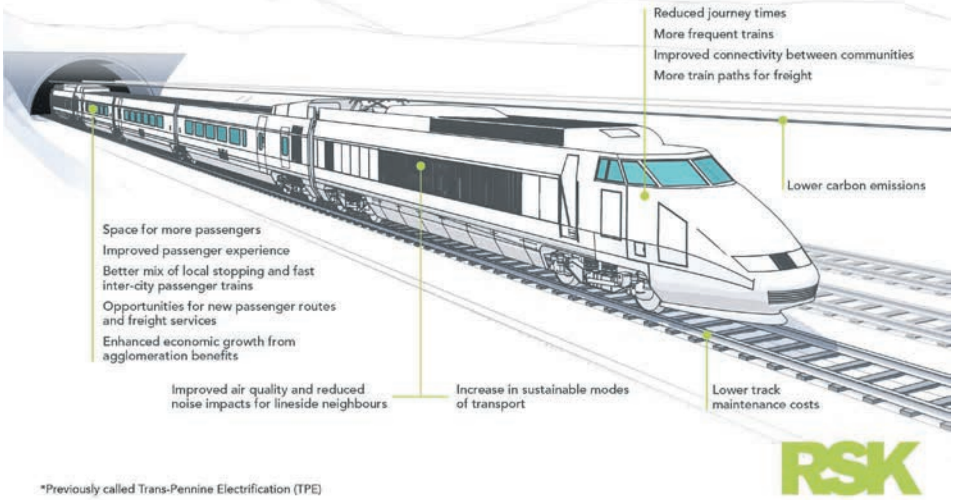
Grayling said that the funding of transport projects was only part of the solution. "What's just as important is the north stepping up to shape its own transport destiny," he said. "By setting up Transport for the North (TfN) and backing the election of metro mayors, we have given the north greater autonomy and control and a powerful voice to articulate the case for new transport projects. Instead of ministers and civil servants in Whitehall deciding what's best for the north, I want TfN and other northern leaders to come forward with fully costed proposals to improve journeys for transport users and provide value for taxpayers," he said.

"The success of northern transport depends on the north itself – on TfN, businesses, mayors and devolved authorities, and on local communities. They understand the north's transport problems better than anyone, and with their knowledge, we can fix them," said Grayling.

City leaders want the government to deliver.

A statement signed by six city leaders from across the north – Julie Dore, leader of Sheffield City Council, Andy Burnham, mayor of Greater Manchester, Judith Blake, leader of Leeds City Council, Sir Richard Leese, leader of Manchester City Council, Steve Rotheram, metro mayor of Liverpool City Region and Nick Forbes, leader of Newcastle City Council – calls on the government to:

- **Honour in full commitments already given to deliver improvements to rail services across the north, including full electrification, track and signalling improvements on key commuter routes and the upgrade of hub stations, and to remove uncertainty about this at the earliest opportunity;**
- **Prioritise manifesto commitment to deliver new west-east rail infrastructure reaching across the north, work with Transport for the North to set out a clear timetable for its delivery in the autumn Budget, develop an appraisal process to support it, and provide evidence that this timetable will not be adversely affected by decisions to fund other large infrastructure projects elsewhere in the country; and**
- **Set out a fairer distribution of transport funding – road and rail, revenue and capital – across all regions of the country.**



the train operating companies are slowly delivering piecemeal improvements to the rail network and passenger experience, but the big issue is the trans-Pennine journey.

I believe that the case for end-to-end electrification of the Transpennine Route Upgrade is still overwhelming. Of course, the willingness to make this investment is not actually about 'electrification' per se; it is about defining and achieving robust outcomes that support the local, regional and national economies.

These outcomes will be achieved by a judicious combination of many different interventions and enablers, from new rolling stock and improvements in rail traffic management through to physical work on structures and track infrastructure. It is the people and the communities who will benefit in so many ways from these investments in future years, as the infographic above shows.

But omitting one or more 'difficult' sections of electrification to save a modest amount of capital investment and reduce short-term disruption to existing rail services seems perverse. This is particularly troubling when the nation is prepared to spend over £1bn on upgrading a relatively short section of the A14 road in Cambridgeshire that will just move the congestion a few miles farther down the road.

Politicians, businesses and the public need to continue to press the case for an undiluted Transpennine Route Upgrade. However, the rail industry must also play its part in helping to sell this, not least in order to secure the widest possible support of the communities along the route, which is so important in the Transport and Works Act Order authorisation process.

In addition to getting the messaging right, there are steps that Network Rail can take to improve public relations. On the Great Western route, members of the public could be forgiven for thinking that Network Rail was singlehandedly trying to alleviate overcapacity in the global steel industry with its unsightly overhead line equipment frame designs. Surely, we can design and erect more elegant, less visually intrusive structures with similar functionality and durability at a comparable cost.

Messaging and design do matter, particularly when it comes to obtaining public support and regulatory consent for route upgrades involving overhead electrification.

Adrian Marsh is development director for transport at RSK.

Paul Dimoldenberg, chairman, public relations and political communications consultancy, Quatro

Time to get serious about Crossrail for the North

Support for IPPR North's petition calling for more money to be spent on transport in the north is going from strength. The petition, which is approaching 70,000 signatories at the last count, calls on the secretary of state for transport to take a number of immediate steps to improve transport in the region. These include:

- Pledging his immediate backing for the Northern Powerhouse Rail programme including a new state-of-the-art 30-minute rail link between Manchester and Leeds – a 'Crossrail North';
- Making an immediate commitment to at least £59bn 'catch-up cash' over the coming decade to support the transport priorities being developed by Transport for the North;
- Giving Transport for the North the same powers as those enjoyed by Transport for London so that it can also raise private finance towards its own transport priorities.

The petition needs to be the start of a relentless campaign for Northern Powerhouse Rail. The north needs to organise and campaign as a single economic entity if it is to secure the government funding for Northern Powerhouse Rail. In Transport for the North we have a strong body and a clear message – this message now needs to be amplified from across the north. The North cannot rely on anything other than its own efforts making the case with facts and figures, passion and a relentless, single-minded campaign.

> "The north needs to organise and campaign as a single economic entity if it is to secure the government funding for Northern Powerhouse Rail."

Last November, we helped our clients Addleshaw Goddard, Atkins and Grant Thornton to draw together over 100 northern-based businesses and to create the report Unlocking Growth in the North.

What we now need is a relentless, focussed and effective campaign to force Northern Powerhouse Rail on to the national political agenda and to keep it there until government agrees to the necessary funding and powers to make it happen.

The campaign needs to be led by a private/public sector partnership with cross-party support and reaching out beyond the narrow confines of Westminster and Whitehall.

The Northern Powerhouse Rail campaign should be the beating heart of the UK's post-Brexit future, bringing new opportunities, new promise and new hope for many northern communities. Importantly, it will need to be one clear message echoed by a thousand voices.

Rachel Shorrock, director at training provider, Systems Group

Training providers should register for success

It's a little over six months since the government's Register of Apprenticeship Training Providers (RoATP) opened in a move aimed at helping those in the transport and logistics sector, among other industries, select a training provider. The register lists the firms that are approved to deliver apprenticeship training to employers using the online apprenticeship service and includes those who were successful in making an application in October 2016 and at the second opening in March 2017.

The register sets-out a list of approved training organisations that are subject to the Apprenticeship Levy guidelines. These providers can be used to deliver apprenticeship programmes and it requires them to meet a broad range of standards in areas spanning quality, capability, compliance and financial health.

Due diligence checks on the organisation of potential training partners and their directors, which cover financial checks and an assessment of capabilities to deliver high-quality training, are a guiding tenet of a structured and organised scheme. For many, this will be a welcome catalyst in driving up quality standards in those industries that are perceived to have suffered for years from a poor reputation when it comes to investment in skills training and apprenticeships.

However, latest government statistics suggest that less than half of eligible employers are still to register. A total of 8,200 accounts were registered by 31 May, according to figures published by the Department for Education. But, figures published by the Department for Education last August estimated that 19,150 companies, which represent just 1.3% of all employers, would be eligible to pay the apprenticeship levy. This suggests as many as 11,000 large employers have yet to sign up with the online service that enables them to spend their levy funds.

If so, the DfE has to be doing more to try to encourage additional employers to sign up. Levy payers have two years to spend their money and undoubtedly many will be considering what their mix of apprenticeship training should be, whether

Roseanne Green, consultant at Iceni Engagement

Metro mayors show imbalance of devolution

"Diversity brings with it different and wide-ranging abilities and judgement, and ensures there is affinity between decision-makers and their constituents."

Our six metro mayors have now passed their 100th day in power. Overshadowed by the subsequent general election result and, with atrocities in Manchester and London naturally transferring national attention, the metro mayors first few months as frontrunners of devolution may have passed some by with relative immateriality. As such, with top teams now in place, many might have missed an obvious omission within the regional devolution structures, that being the near complete lack of women, not just amongst the metro mayors, but within their cabinets too.

Steve Rotheram has a nine, all-male cabinet overseeing the Liverpool City Region which is made up of around 1.5 million people, and the story is a similar one throughout all six devolution regions. Only Greater Manchester and Tees Valley have (one or two) women on the top team. It is reckoned that among the metro mayors and their top teams, 94% are male.

This is not necessarily a reflection of the mayors themselves. As an example, Greater Manchester mayor Andy Burnham has resolved to achieve a gender-balanced combined authority in his manifesto and has further committed to rejecting invitations to appear on all-male panels. There is also an inhibitor of the devolution deals which requires the combined authority cabinet to be made up of the leaders from each local authority and so the real root of the problem falls with the bias of local government. Only one in seven, of the 352 England local government leaders, are women.

It seems the (perhaps most obvious) solution – that of enforcing combined authorities to broaden and diversify – would face constitutional and democratic difficulties. Due to the principle of devolution being the transfer of power to local government, co-opted members may not be well received by the existing local leaders of our combined authorities.

Change needs to come in a more strategic and long-term format. Local government and political party barriers prejudicing women need to be lifted (for instance, only 4% of councils in England have a maternity, paternity or parental leave policy for councillors) making politics, particularly senior level local politics, more accessible and appealing.

With Andy Street in the West Midlands looking on the brink of securing a second devolution deal with Whitehall and the Northern Powerhouse making headlines in recent weeks, devolution continues to shape the agenda in our regions. However, local government and relatedly devolution's, shortfall leaves a democratic shortfall. Diversity brings with it different and wide-ranging abilities and judgement, and ensures there is affinity between decision-makers and their constituents.

For devolution to be an enduring success, all-inclusive representation (and not just on a gender basis, but for all minorities) is needed and far too-long awaited.

via recruitment or training up existing members of staff, and at what levels of engagement. Given this situation, the time might be right when we should be looking to encourage the DfE and other sector leaders to start to ramp up the work they do to support employers and get them into a position where they're engaged, enthused and ready to use their funds to invest in quality training for apprentices.

But it shouldn't just be left up to government and their agencies to act. We all have a responsibility and part to play if we are going to equip employers with the highly trained and job ready workforces they need to be competitive. There's a job for providers to do as the government's apprenticeships' sales force to explain to a significant proportion of employers the benefits of using their levy funding. We also need to communicate the key message that Brexit means investment in skills via apprenticeships, is going to be more important than ever.

Giving employers the control over their apprenticeships needs and funding is an

"We all have a responsibility and part to play if we are going to equip employers with the highly trained and job ready workforces they need to be competitive."

essential feature of government's plan to create an adept and skilled nation and the register means that only organisations that eschew the mediocre for quality can deliver apprenticeships. Furthermore, the register offers investment in a national infrastructure to give employers the confidence to do business with high-quality training providers, and, moreover, make sure that individuals can benefit from gold-standard routes as they climb the ladder of opportunity.

The RoATP provides levied organisations with a list of top quality training providers and gives employers a level of assurance that the organisations they are partnering with possess both the capacity and capability to deliver high quality, sustainable apprenticeship training.

Inclusion in the register underlines the quality of a provider's apprenticeship programme and its ability to deliver training of the highest calibre to ensure that the wheels of the economy keep turning.

Electric vehicle power challenges – can the system cope?

The government's ban on all petrol and diesel vehicles by 2040 has the potential to disrupt businesses on a large scale, say *Simon Sjenitzer* (left) and *Phil McVan.*

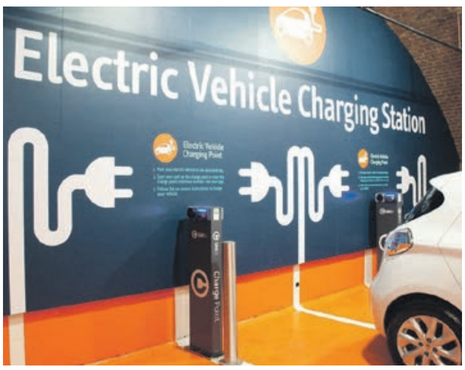
The government's commitment to move away from internal combustion engines to adopt 100% new electric vehicles by 2040 is set to see the growth of electric vehicles (EV) accelerating as governmental incentives (and penalties) are put in place to help us make the change.

EV charge points are normally 3, 7, 22 or even 50KW, with 7 KW being the typical size. Fast chargers can be 50KW as we strive to grab as much boost as we can whilst on that service station coffee break. Typically though, electric cars are charged at home and then "topped up" almost like a phone as we move around during our busy day.

So far, so good, and there is nothing much to worry about until that point. Until you wonder where these charge points are and how much power they will need. Well, if all 30 million cars on the road in the UK were electric, needing 7KW of charge that would be… 210GW of installed capacity, (we currently have around 70GW). That's a lot, so where is that going to come from? With diversity factors, we expect it won't be anything like that demand, and, of course, with battery storage technology we should be able to charge cars at off-peak rates.

To scale this number, UK demand at time of writing is 23.88GW, with a power generation mix of nuclear 7.7GW, coal 7GW, wind 5GW, CCGT 4.5GW. This might then suggest we need a very substantial increase in generation capacity to meet this forecasted increased demand.

Renewable installed generation capacity in the UK is approaching 20GW, although, typically, it may produce 10GW actual. However, its characteristics of distributed and intermittent generation are causing major headaches for National Grid. This situation has induced the capacity market, whereby keeping the lights on is managed through buying in both capacity and balancing services at substantial extra cost.



Substantial investment is needed to create the charging stations required.

The strike price for offshore wind under Contracts for Differences, required to underpin investor certainty, are reported as high as £140MW for 20 years – expensive stuff compared to historic costs based on gas CCGT at around half that figure.

So, where are these additional costs to be recovered from? Well, everyone, of course! The massive increases in extra levied charges for "pass through" costs have been added back to every kWh on our bills to recoup government incentives, such as feed in tariff, renewables obligation, contracts for differences and capacity market.

This has seen our energy bills change from 70% energy component to less than 50% and heading towards 30%. We find ourselves heading towards 70% now being essentially levies or, perhaps, green taxes.

The other key factor in switching to electric vehicles will be the loss of tax revenues to the Treasury. Currently, the Treasury receives around £28bn per annum in fuel duty plus VAT revenues from wholesale energy. This could become a huge loss. Perhaps, there needs to be other ways to recover this lost income. Maybe we could tax other forms of energy and recoup losses that way?

We can now see substantial investment required in energy generation capacity, infrastructure to deliver power to already constrained local networks, returns on investment on renewables and the cost recovery from users through energy levies paying for much of these changes.

Adding up all these changes, it is now beginning to look like it all has potential for business disruption on a grand scale. Corporate governance of these matters now becomes a key risk. The need to appraise and mitigate what may seem relatively small steps and remote from day to day operations, but could begin to impact the businesses' freedom to act and courses of actions open.

How organisations buy energy, generate and store, where possible, then use it efficiently to support the business process, has become an increasingly complex landscape. Decisions being made in boardrooms today will affect whether, in years to come, this revolution was seen as an opportunity wasted or realised.

So, which side are you on?

Simon Sjenitzer is director of energy business development at WYG and Phil McVan is managing director of CarbonBit.

Game-changing lessons from Denmark

Lessons from the digitisation of the Danish rail network endemic have the potential to revolutionise the digital transformation of rail globally, writes *Mark Fielding-Smith.*

Traffic Control Centre, Copenhagen.

The Danish National Signalling Programme is currently delivering the first ever national rollout of the latest version of the European Traffic Management System (ERTMS). There are some key lessons that can be learnt from this 14-year £2.4bn game-changing programme as it introduces new digital technologies onto live operational railways.

As governments everywhere wrestle with enhancing capacity on their networks, while delivering new standards in reliability, safety and value for money, Denmark has a lot to teach us. This is particularly true of the value of implementing a whole systems approach and integrating cybersecurity into the safety approvals process.

Banedanmark, the Danish railway operator, retains responsibility for the integration of the systems with the support of a joint venture of Atkins, Rambøll, Parsons and Emch+Berger. From the outset, the team focused on how to effectively reduce potential risk and identified the need for a joined-up approach to the development of systems architecture and systems engineering. Previously, applications and asset owners could make independent decisions without considering their overall impact; now all change is coordinated centrally from a whole-systems view and agreed across all relevant stakeholders, applications and interfaces.

A key element has been the creation of a systems integration lab, allowing the simulation of digital scenarios, prior to their application to the rail network. The Joint Test Lab, established to flush out integration risk early, has become a successful model of collaborative delivery. A wide range of equipment has been co-located or simulated to ensure radio block centre integration works first time, and that the handover between the two traffic management systems is seamless.

Not only does this deliver significant value by identifying and enabling the early resolution of digital integration issues, it also significantly reduces the time needed for possession of the railway, reducing inconvenience to passengers.

This is also the first time that the common safety method (CSM) has been applied on a national rollout and many lessons have been learned. It is important that the CSM Risk and Evaluation assessment and safety approvals process are clearly defined early and understood by all stakeholders and suppliers.

Cybersecurity is critical to the safety and availability of digital solutions and needs to be incorporated into the safety case approach to ensure driver and passenger safety is maintained by containing the impact of cyber incidents. The stated policy, strategy, processes and assurance are central to the CSM and the advice provided to the operating organisation regarding the security of assets throughout their lifecycle.

This system-wide approach has meant working closely with the suppliers to ensure their systems are compliant. Where the cybersecurity scope is outside that of the suppliers, the team has completed the design and implementation of the system to include extra monitoring, technical controls and firewalls as required.

We have found that connecting IT and operational technology systems requires a different strategy and the addition of further features to the standard IT data protection. The primary challenges identified include the need to connect with legacy systems which are not built for secure interconnection, the requirement to connect to external stakeholders' systems and the adoption of commercial off-the-shelf IT solutions.

The creation of an offline digital twin simulation, replicating the operational system, will be essential for facilitating integration and testing software changes. This will be used to test and strengthen cybersecurity throughout the life of the system, adapting to the changing cyber threat landscape.

Finally, for effective cybersecurity, there needs to be a certification system governing which software can communicate across the fixed and mobile network. This is best implemented through Online Key Management to semi-automate the rapid, comprehensive and efficient distribution of these authorised codes to all train-borne and trackside ERTMS and IT components.

For the UK and other countries which are actively pursuing digital rail programmes, it is important to expend effort early to identify and mitigate any integration risk posed by using systems architecture, modelling, simulation, systems integration facilities and validation on test tracks. This will minimise the late discovery of issues which could reduce the availability of the operational railway and give assurances as new digital technologies are introduced to the railway for the first time.

Mark Fielding-Smith is client director for digital rail products and services, Transportation, at Atkins. The article was written with support from the Atkins Denmark team.

Meeting the challenge of change and moving forward

Amey appointed Andy Milner as its new chief executive in February last year. *Andy Walker* visited him at the firm's London office recently to talk about his first 18 months at the helm and find out about the challenges he's faced.

When Andy Milner took over as chief executive of Amey a year and a half ago, it was widely seen as a big move for the plain-speaking Yorkshireman. Civil engineer Milner joined Amey in 2006 and since being appointed managing director of consulting in 2008, he grew the business to be one of the leading engineering and technical consultancies in the UK, as well as expanding Amey internationally.

I asked him if his first 18 months in the top job has been what he expected. "In terms of the challenges that we face externally, yes, it is absolutely what I expected," he says. "We are going through almost unprecedented uncertainty in all of our markets as a result of austerity and then to compound that Brexit and this has caused a huge amount of public and client uncertainty and that has an impact on spending profile," says Milner.

On taking over as chief executive, Milner said he knew that the environment facing Amey was going to be difficult, challenging and to some extent volatile, but "what I realised relatively quickly was that we had some work to do internally to be able to respond to that and perhaps a little bit more than I'd anticipated, if I'm being honest," Milner admits.

That work included a period of significant change at Amey last year, a complete restructure and big changes to the way the business was set up. "We went from three big divisions to five much smaller more agile divisions which were much more client focused, so taking out a layer of management and bureaucracy and making the business much more fit for purpose," Milner explains. "The previous structure was fine when there is lots of capital and investment in infrastructure around but the new structure is much more appropriate for the agility required by our customers and also the transparency that I needed into the performance of those units and individual contracts," he says.

As a result of the changes made, Milner can see more clearly how well a particular business unit or contact is performing and that means a better service for the customer he says. "We can also identify opportunities to bring more value," he says. "We have a big focus on our engineering and asset management capability which comes out of the consulting part of our business. Understanding where the opportunity to use that asset management capability or that engineering knowledge to reduce the cost of the operation for a customer or to improve the efficiency or the outcome of an asset's performance is really important for us," says Milner. "It differentiates us but it also helps our customers manage themselves through difficult times. Our new structure helps us to see these opportunities," he says.

While the external challenges facing Milner were expected, what was less predictable, he says, was the size of the task internally to reorganise and refocus the business. "I think the scale of the internal restructure and some of the difficulties we found with some of the contracts were at a greater level than I anticipated it to be," Milner explains. "It's only when you really start digging into the detail of some of the operations that we realised that significant action had to be taken. I knew there would be some of that but there was a lot more of it than I thought there would be," he says.

"That resulted in a difficult year for us last

"We have to work with our customers to make sure that they are getting a value service from us."

Andy Milner

"At a macro level, the exporting of infrastructure, skills and products is a real catalyst for the repositioning of the UK in the global market, independent of Europe."

year, financially and in terms of change for the organisation. But what we were able to do was reduce our cost base by £50m on a recurrent basis, reorganise and implement a new regime for the organisation and one which has got greater transparency and greater visibility but also greater empowerment and which involves our employees to a much greater extent," says Milner.

As a result of all the changes, Milner says that the company is now starting to feel much more optimistic in 2017 that it has the right management team and operating structure in place. "We are working hard on engaging with our people and we are looking at ways in which we can embed efficiency and improve the services to our customer. So, the journey over the last 18 months has had some surprises in there, but is in keeping with the climate we are operating in today," he says.

Like many companies working in the infrastructure sector, Amey has to operate in a challenging and uncertain environment made even more difficult by the UK's decision to leave the EU. So how does Milner view the effects of Brexit and can he see any upside? "Brexit is going to create some enormous challenges due to the uncertainty around how it's all going to pan out," he says. "That uncertainty and the whole Brexit process is preoccupying government and as most of our revenues are government-led revenues, we need to have a strategy in our business to respond to that level of uncertainty," says Milner.

While Brexit brings uncertainty that the industry needs to navigate, Milner can see some positives. "What is good is the clear recognition by government that infrastructure is a catalyst for economic stability and growth and that is really positive," he says. "At a macro level, the exporting of infrastructure, skills and products is also a real catalyst for the repositioning of the UK in the global market, independent of Europe," Milner says.

Challenge and uncertainty also mean that firms have to work harder with their clients on developing solutions that add real value. "We have to work with our customers to make sure that they are getting a value service from us. The extensive use of data to do our jobs better is crucial in that," Milner says.

Combining capabilities to provide an even better service is also important. "Can we improve on the asset value in a utility environment and then can we overlay that onto engineering contracts? Yes we can," says Milner, who is also keen to work with his customers on ways of financing future infrastructure. "There is still a gap on the funding of infrastructure. How can we bridge the gap, with government, with local authorities, utility organisations, the rail sector and private finance? We need to discuss that collaboratively," Milner says.

That spirit of collaboration also extends to Amey's people who Milner sees as absolutely central to the company's future success. The restructure of the company has been underpinned by new values for the organisation which put people first and Amey is investing in the skills and capability of its staff and also in ensuring that the company is more diverse. All this will help Amey deliver great service to clients, says Milner, and enable the business to "find ways to be constantly improving and create better solutions".

As one of the industry's key leaders, Milner's thoughts on the prospects for the infrastructure market are worth hearing. While he says the commitment to large scale mega projects like HS2, Hinkley and Heathrow are to be welcomed, he believes that the bigger picture issues are going to be shaped by technology and how the industry deals with those challenges. "There is clearly a demand for improvements in existing infrastructure and that will continue, but the way in which things can be done smartly is going to be very important," says Milner. "I believe we are on the cusp of a different place for the market. It's now much more technology led. Smart motorways, the digital railway – these technological developments are going to fundamentally shift the infrastructure market in the UK over the next few years and probably much quicker than that," he says.

Organisations need to start to innovate and embrace new technology says Milner otherwise

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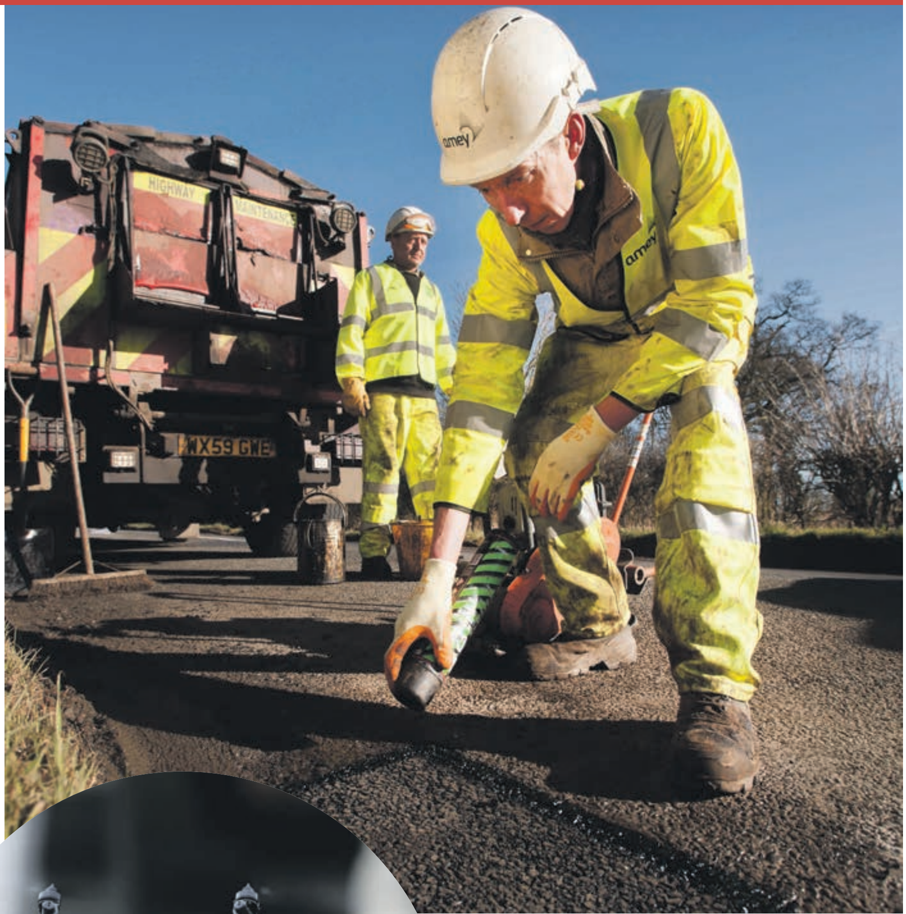
they will be left behind. Amey is putting a big effort into technology investment in order to add value. "The infrastructure sector has traditionally lagged behind on technology but we are in a completely different situation now with the ready availability of data," he says. "Use of data from the location services on mobile phones and applying that to improve infrastructure – that's where the future lies as well as in ongoing traditional engineering activity," says Milner. "The infrastructure sector needs to tap into that and use that data to provide solutions to improve people's lives and help create better places to live, work and travel. Focus on the future."

As well as seeing technology as a key industry driver, Milner also believes that there needs to be more focus on improving health and safety across the industry and in material innovation. "The use of recycled materials and developing low carbon solutions will become increasingly important long term," says Milner.

Despite all the challenges the industry faces, it's clear that Milner sees people as the solution to just about all of them. "Amey is nearly 100 years old and we have overcome many many challenges because of the capability of the people in our business," he says. "We need to completely expand the age range of people in the organisation and do more to attract people into the industry and invest in our people's skills. Apprenticeships are key in that as is promoting greater diversity and being open to all genders and ethnicity," he says.



> "People are attracted to the way we are developing software and tech. This can be really important for the future, not just of Amey but the whole industry,"
>
> **Andy Milner, chief executive, Amey**

Milner says that the application of new technology is helping Amey to attract new recruits into the business and he sees that continuing. "We have put a lot of effort into building our asset management analytics capability and have attracted some really bright people who are attracted to the way we are developing software and tech. This can be really important for the future, not just of Amey but the whole industry," says Milner.

Looking further afield, Milner sees opportunities for UK firms in the North American market, as clients there look to better look after the nation's infrastructure. "In a more constrained financial environment there is now pressure on clients in the US to handle their assets differently. There is clearly an opportunity there to bring our UK experience to bear but this is in the context of a very protectionist government and we need to work through that," he says.

> "Technological developments are going to fundamentally shift the infrastructure market in the UK over the next few years and probably much quicker than that."

It's another example of using infrastructure and UK expertise to get ahead of the Brexit curve to blaze a trail internationally says Milner. "We can support the government in building the profile and the knowledge of UK expertise so it can be exported. We have been maintaining assets here since the industrial revolution and we are experts at it, so if we can capitalise on that and demonstrate that capability to other countries then we are creating something really valuable," Milner says.

After 18 months as chief executive, Milner says that the best part of his job is seeing the effect that Amey and its people have on a daily basis. "I'm immensely proud of the capability that we have in Amey," he says. "I am really proud travelling around the country and seeing the impact of what we do on the roads, the railways, in buildings, prisons and in the huge range of different facilities that we operate and deliver. I'm really pleased to see that. I think the bit I enjoy the most is making that delivery easier for people, inside the organisation and for our customers," he says.

"We are there every day, 24 hours a day, making a difference to people's lives. What's important to us is that we are enabling success for our customers but what's also important to me is to enable success for our people. We are looking at long-term partnerships with our customers and the most important thing is us knowing that we've done a great job, our customers knowing we've done a great job and our people knowing that we've done a great job."

Two must-attend events for senior executives

We preview two major high-level business conferences this autumn that will offer key insights on topical and emerging issues for industry leaders and senior executives working for infrastructure businesses.

This autumn sees two significant business conferences aimed at senior executives in the construction and infrastructure sector that will set the agenda on key issues and provide attendees with intelligence and insights unavailable elsewhere. The annual European CEO Conference on 9-10 November and the first ever European CIO Conference on 30 November and 1 December promise to be must-attend events where prompt booking will be well advised.

The **European CEO Conference**, a unique high-level event attended by CEOs and senior business executives from across Europe, combines a hard-hitting business programme with exclusive social and networking opportunities, including the European CEO Awards Gala Dinner which recognises and rewards the outstanding leaders from the industry.

Key aims and objectives of the event are to provide a European forum for discussion and debate between CEOs in the consultancy and engineering industry in the UK and continental Europe. The conference will include the presentation of a Europe-wide industry benchmarking report and delegates will have the opportunity of discussing the impact of the current economic climate on markets and growth strategies.

The event offers a valuable platform to CEOs for high level financial and strategic debate to help position and direct their corporate business strategies. Those attending will gain information and tools for business planning and get factual evidence to plan and manage their business portfolio and also mergers and acquisitions activity.

Key conference sessions include discussions on opportunities and challenges in emerging markets, new developments in technology, global market dynamics, merger and acquisitions, economic infrastructure including aviation, road, rail, port, environment, water, oil and gas and energy as well as a social infrastructure focus looking at property, buildings, housing and urban development.

Delegates will also be able to gain insights from panel discussions with key industry leaders and plenary sessions on a range of topical issues including leadership, growth, management and succession planning, different ownership models and future growth strategy. The event will also reveal the results of the always-interesting annual European industry business benchmarking survey, so all attendees are sure to gain insights and core strategic messages to apply within their businesses over the coming 12 months.

If all that wasn't enough, the European CEO Awards Dinner is attended by CEOs from across Europe, as well as representatives of client organisations, members of parliament and other stakeholders and is an excellent opportunity to network with key industry decision makers from over 14 countries in Europe as well as attendees beyond the continent from the United States, Japan, Australia, Nigeria and South Korea.

ACE's first-ever **European CIO Conference** is a one-and-a-half-day summit for chief information officers of engineering and construction firms involved in delivering large-scale physical infrastructure projects. The agenda has been developed with an advisory board of global leaders and is designed to explore opportunities to drive business transformation and value through IT innovation.

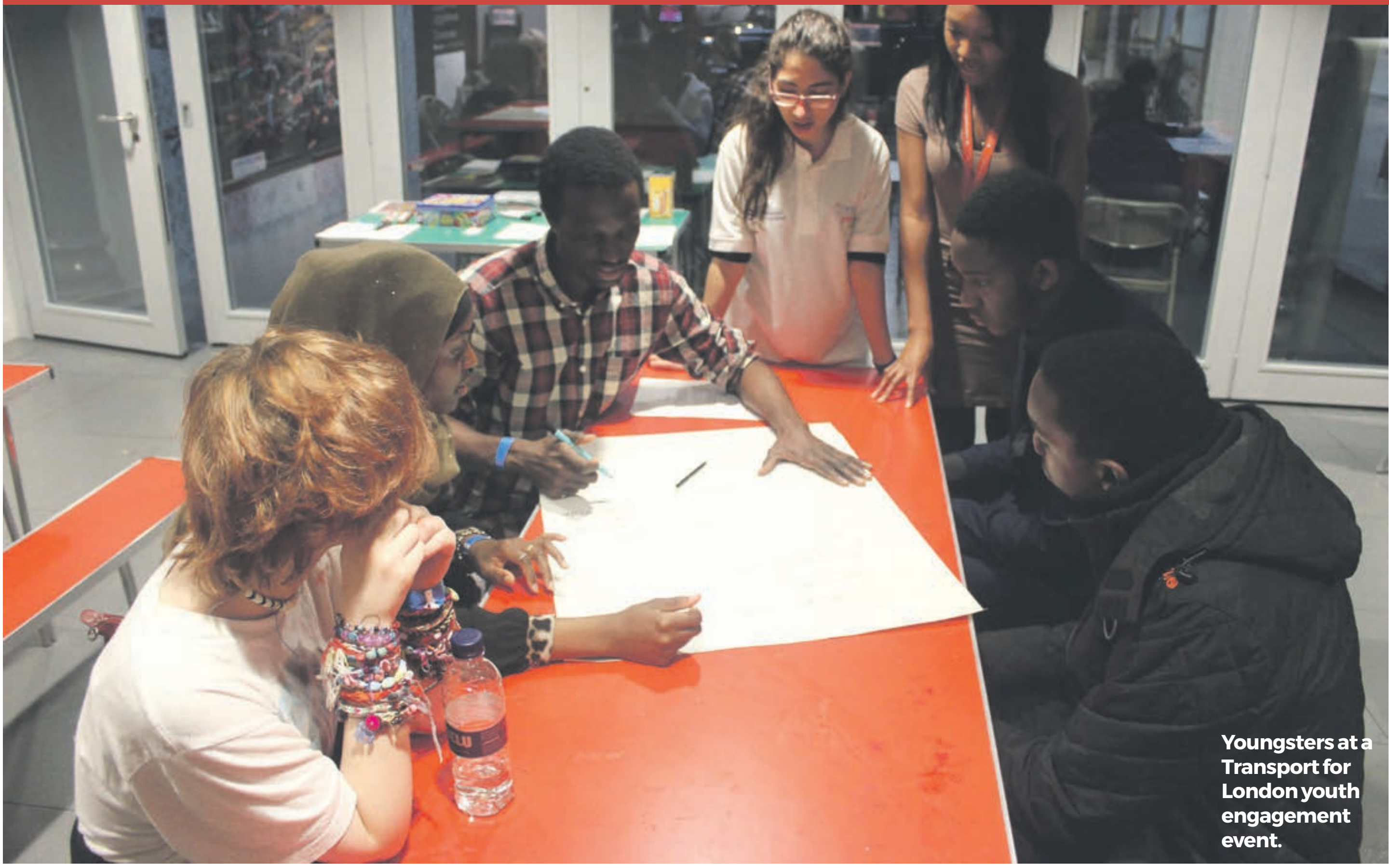
Technology has revolutionised the engineering and construction industry and continues to do so, with the pace of change ever quickening. The European CIO Conference offers delegates the opportunity to find out more about the business and financial implications of the strategic technology challenges facing the infrastructure sector's IT leaders. Those attending will also benefit from attending thought-provoking presentations and networking with senior professionals from the industry.

With key sessions on technology futures, the cloud, the client's perspective and a presentation of the results of a new industry CIO survey to help gauge industry views about key technology issues, the European CIO Conference promises to be well worth attending. There are discounts for bookings made before 12 October, with prices rising after that, so early booking is advised.

Both events are sure to be popular and the best way to book is online via the dedicated conference websites listed below. Full details of all the speakers and sessions are available online together with discounted delegate options.

European CEO Conference
Find out more at www.aceceo.co.uk

European CIO Conference
Full details at www.acecio.com



Youngsters at a Transport for London youth engagement event.

Building effective advocacy for infrastructure projects

With more and more major infrastructure projects being planned, getting the public onside and engaged in the process has never been more important, says *Jo Field*.

Despite current business uncertainties around Brexit and the economy, one thing that is abundantly clear is the importance of continuing investment in major infrastructure to drive growth and create prosperity.

Where does stakeholder engagement and advocacy fit in? Well, the answer is that it's the key to making major infrastructure projects happen.

So, what is stakeholder engagement and why is it important? Stakeholder engagement means building relationships with the communities and groups that are interested in your project and creating opportunities for decision makers to hear from the people their decisions directly affect – the stakeholders themselves. Engaging with those stakeholders means that better policy decisions are made.

For example, engaging with disabled people's organisations and involving them early in shaping your scheme will ensure you get things right first time, rather than spending money and time on expensive retrofitting later. Involving local communities in plans will also help improve a project. After all, local people are often the experts on what will and won't work for their area.

Reaching out to consult and engage with them is crucial because when people feel they've been listened to and have had an opportunity to properly contribute to the project development process, they're much more likely to become advocates for a project.

In all of this, creating advocates for a project is very important. But, what do we mean by advocates and why do we need them?

"Advocates can help make the case for and shape the scheme."

Advocates are people, or groups, who are willing to support your project. They can help make the case for and shape the scheme. And stakeholder advocates will applaud the delivery of the project if their views have been considered, taken into account and things have been done well.

Infrastructure projects, especially major ones, need advocates from a range of sectors, including business, industry, communities, campaign groups and equalities groups. As an example, young people and the organisations which represent them can be fantastic advocates for your project. Young people are the future of society. They're our prospective engineering and infrastructure workforce, and upcoming business, industry and political leaders. So it's only right they have a say in decisions that will affect them.

By involving young people, we will ignite interest in engineering and related careers. We will build the skills pipeline for the future and we will educate future business and political leaders about the importance of infrastructure to drive growth. Today's young people will be the decision makers on the infrastructure projects of the future and they will also be the main users and beneficiaries of the projects being built today. Young people are a major stakeholder group, so we need to get our infrastructure schemes right for them.

Youth engagement needs to be participatory, fun and interactive, with lots of opportunities for young people to make their voices heard. When I was at Transport for London (TfL), I set up the organisation's youth panel, a board of 25 young people who give their views on TfL's policies and campaigns. Youth boards and panels are great ways of giving young people a direct voice in policymaking.

But you can vary the type of engagement you use depending on the audience you want to reach. If you're carrying out a consultation, engagement needs to be taken into the heart of the community – exhibitions in public places, pop-up stands in shopping centres, and meetings in community halls. I'd recommend partnering with already established community organisations to help you reach out to your audience. All engagement events need to be fully accessible and communications should use clear and simple language. You should provide opportunities to receive information in different languages and accessible formats such as easy read, large print, braille and audio.

But there are many more ways to engage your stakeholders and have in-depth, meaningful dialogue such as summits, roundtables and focus groups. Social media enables you to have a two-way dialogue with your stakeholders in real time, but be careful.

So, do infrastructure projects need stakeholder advocates to make them happen? I think the answer is undoubtedly "yes!" The Crossrail project is a fantastic example of this. Crossrail finally came to fruition because business backed it and was willing to campaign for it and pay its share of the costs.

If we spend time engaging a range of stakeholders on infrastructure schemes it will not only help to gain their support, but will also help drive the project forward. Having a two-way dialogue with stakeholder groups, listening to what they think and acting on suggestions, will ensure the project gains momentum, as stakeholders will have a personal interest in its completion. By doing this we will build advocates for our infrastructure projects.

It's important to understand at what stage stakeholders can help your infrastructure project. In fact, stakeholders can help at every stage in an infrastructure project's progress, from its initial concept all the way through to final delivery.

Stakeholders can help shape the idea itself if they are involved early enough. They can also help build political support for the project and make the case for funding. Stakeholders can contribute their thoughts and requirements into the design and this will help you get it right first time. If you take your stakeholders with you on the project's journey and provide meaningful involvement, from design through construction to operation, they can help you turn a good scheme into a great scheme.

An example is taking the time to reach out to disabled people and their representative organisations to gain their perspective. If we get infrastructure schemes right for disabled people, we are likely to get the scheme right for everyone. This is

"The Crossrail project is a fantastic example of stakeholder advocates."

because many adjustments we make for disabled people actually improve schemes for everyone. For example, wheelchair ramps are also helpful for parents with buggies and people carrying luggage.

So, we know that engaging with stakeholders is vital to a project's success. If you want to improve stakeholder engagement on your project but are not sure where to start, then it's worth considering the following top five tips for good stakeholder engagement.

Identify your stakeholders: The first stage of stakeholder engagement is to carry out a thorough mapping exercise to identify and understand your stakeholders, and their views of the project.

Have the conversation: This is a major part of stakeholder engagement. Don't be scared to talk to your stakeholders. Doing so will help gain their respect. Different stakeholder groups will often have different perspectives on a project and competing views, but the worst mistake you can make is to ignore them. All interested groups have the right to be heard and they must be.

Engage early and often: It's important to make contact with your stakeholders early on in the project. They need to be consulted at every stage and have a real opportunity to influence the project. Stakeholders should be given the confidence that you are going to listen to, and take account of, their views and requirements. I'd recommend going above and beyond what planning law requires. Turning a good project into a great one means embedding stakeholder engagement from the start and aiming to be an exemplar rather than just delivering the minimum legal requirement. I'd recommend sharing initial ideas with trusted stakeholders and gaining their perspectives, insights and expertise at the earliest possible stage. After all, you're unlikely to achieve advocacy by delivering the bare minimum.

Aim to build advocacy among your stakeholders: You should engage with a wide range of stakeholder groups and aim to build advocacy for your project by carrying out top-quality, meaningful engagement. This will help make the case for your project, drive it forward and protect its reputation. But, be aware, building advocacy is a long-term process and it doesn't happen overnight. And fundamentally, it's all about building relationships and listening and working in partnership with your stakeholders to deliver results that work for everyone.

Consider the impact of social media: Social media can be an excellent tool for promoting your project. But it also means even the smallest of issues can be blown out of proportion. Make sure you are aware of your stakeholders, what they are saying on social media, and how it can play a part in communication and promotion. A good social media plan should be a key part of any stakeholder engagement strategy.

By following these tips, we can all help to better engage with our stakeholders and build advocacy for our infrastructure projects. This will undoubtedly help to keep projects on track, and ensure we have a stronger economy, regardless of any business and economic uncertainty that might lie ahead.

Jo Field is the founder and director of JFG Communications, an agency specialising in communications and campaigns, gender diversity, stakeholder engagement and public affairs for the transport and infrastructure sectors.

Doing health like safety

WSP recently announced a landmark appointment of a new health and wellbeing manager. *Andy Walker* spoke to Chris Hanson-Moring about his new role and its importance for other construction sector organisations.

Chris Hanson-Moring's arrival at WSP as health and wellbeing manager forms part of the consultancy's commitment to further improve its employee wellness and productivity. Based in Tewkesbury, Hanson-Moring has more than 17 years in the wellbeing sector and he arrives at WSP from Healthcare RM, where he helped secure a multi-million pound contract by identifying the underlying personal and occupational risk factors that cause ill-health and injury.

At WSP, Hanson-Moring will apply his knowledge and experience to a role where, amongst other things, he will be responsible for reducing employee sickness levels, whether that's from musculoskeletal issues or mental health, which currently account for 13% of all employee absences in the construction sector.

"The main objective of the role is to 'do health like safety'", says Hanson-Moring. "We have spent a lot of time in the industry looking at safety and health has always been a bit in the background if we're being honest. We now have health, safety and wellbeing at the forefront of our business in everything that we do from projects to office work and that's right because health and wellbeing is actually more influential on safety than just putting safety by itself," he says.

So how will he go about his role in a sector that he has not previously worked in directly? "First of all we've got to look at a risk-based strategy and try and understand what the drivers behind ill health and injury are," he says. "To really do that we have to understand our people. I've spent my first couple of months in the business trying to understand our people and cultures and that's been a big eye-opener and we now need to support people in their roles," Hanson-Moring says.

I ask Hanson-Moring whether there are any things that have struck him about the construction sector and the way that it operates that impact on the health and wellbeing of the people who work within it. "There are a lot of pressures and demands within the construction industry

and that itself has its own risks for staff," he says.

"We are starting to see mental health, stress, anxiety and depression really moving to the forefront of ill health and you can start to understand why we need someone like me in this position to really move this topic forward and start to push down some of these taboos and get people talking," says Hanson-Moring. Getting people talking about issues like wellbeing and health is clearly a challenge in the construction sector and one that Hanson-Moring is keenly aware of.

"What happens is that people don't tend to talk about issues or share that they are struggling and they get left until the point at which they really are struggling and probably are not at work anymore. I want to ensure that this doesn't happen," he says. But how do firms create that supportive culture where people feel able to put up their hand and say "I need a hand here"?

"People don't want to show weakness in high pressured, high demand roles but we have got to prove to them it is not a weakness to speak up, this is life and as a business we can support you. We have the infrastructure, we have the support services and we want to make sure that asking for help doesn't come across as a weakness. It's life and we should be very open about talking about it," he says.

WSP is clearly committed to fostering that supportive approach for its people. Lorne Clarke, UK head of health and safety at WSP commented: "Ensuring that our colleagues go home healthy and safe at the end of each day to spend time with their family and friends is a priority for WSP, along with ensuring that those who work with us and who interact with our projects stay healthy and safe. It's great that we have Chris in our business to lead on this issue and to encourage us to 'view health like safety' and to help build the wellbeing of our colleagues into our culture."

Hanson-Moring's arrival at WSP has been welcomed by staff who are looking forward to the benefits that a more professional approach to health and wellbeing can bring. "The people here are delighted that there is someone like me that has the focus to really support them," he says. "With my background knowledge and my passion for the subject I'm going to make sure that that support is in place and continues to be there for our staff for the long term. Having this role will make staff feel happier and more supported and when people feel supported and cared for they want to work for the business," he tells me.

I ask Hanson-Moring what are the biggest challenges in implementing a wellbeing-centric approach in an organisation like WSP and for other construction organisations? "The first issue is engagement. How do we get 7,500 employees to engage in the process? I'm very positive that there is a lot of engagement there already but we can incentivise it and make people aware of their own health and wellbeing and we have a few online platforms being launched towards the end of the year to encourage that. That creates engagement and once you start to get engagement you can then start to give people the knowledge and education they need. As long as they feel as if they are constantly being updated on issues then that engagement will remain and you will get long-term buy-in," he says.

Hanson-Moring also sees his appointment as having benefits for WSP's clients as well as its staff. "I would hope that our clients are very excited because they can see that WSP are a business that not only cares about their employees, but they also care about the people who they work alongside. The support we will put in place is not only for our employees but also to support all the projects we work on," says Hanson-Moring.

Given his enthusiasm and passion for his subject, it's clear that Hanson-Moring intends on making an impact at WSP and, more than likely, in the industry more widely. "I'm really excited to join a forward thinking company that identifies that health, safety and wellbeing is united in its approach to reduce and, where possible, eliminate ill-health and injury. I see huge opportunity in my role," he says.

"There are a lot of pressures and demands within the construction industry and that itself has its own risks for staff."

Chris Hanson-Moring

Isn't supply chain finance just a sticking plaster?

The endemic and long term payment problems that beset the construction industry are crying out for real solutions, not the sticking plaster of 'pay to be paid', says *Sarah McCann-Bartlett.*

We need companies to pay their supply chain, not increased levels of 'affordable finance'.

Back in 2012, David Cameron, then prime minister, proudly announced what was called a "ground breaking agreement" to help "tens of thousands of businesses secure increased levels of affordable finance". Cameron was promoting supply chain finance, basically 'pay to be paid' – reverse factoring, as it's sometimes called. You can have your money in, say, 120 days without finance or in 30 days if you pay a small finance charge.

The facility is the payer's. Supporters say that this means the whole supply chain can take advantage of the – usually – bigger payer's ability to negotiate lower finance rates. They say that SME specialist contractors get their payments more quickly, without all the hassle of chasing. The payer is able to hold onto their money for longer and the administrative load is considerably lighter – one payment a month.

Is this really a win/win or is it high risk to rely on a complicated, costly and largely unregulated product?

Some SMEs like the idea and find it helpful. But it is not a panacea and as always, the devil is in the detail. All schemes are different and some are more complicated than others. Key issues include:

- Some contractors require their supply chain to be part of such a scheme, whether they want to be or not.
- Others might push specialist contractors to 120 days payment or more if they don't sign up to a scheme.
- Such long payment periods might nullify credit insurance, which tend to have a maximum payment period.
- The finance is off-balance sheet so the extent of the factoring is not transparent. If a contractor fills up its credit allowance at one lender, what is to stop it simply moving on to the next and starting all over again?
- It allows payers to look like they are paying within the legally mandated 30 days for public contracts.
- And if the scheme ends, will payers go back to normal payment periods or will SMEs be left with payment at 120 days? This can become acute where the scheme allows the payer to terminate the scheme with no notice, and payment terms revert immediately to being those in the contract.

Somewhere along the line, industry has forgotten the Late Payment of Commercial Debts Regulations 2013, which provides that business to business payment terms can only be longer than 60 days if they are not grossly unfair.

The finance cost will be added to the overall cost of doing business, increasing costs for clients and adding to the overall cost to construction for UK plc – something government is at pains to reduce, not increase. There is no regulation of these facilities and I have heard stories of one finance house which has 12,000 of these schemes (from various sectors, not just construction), all administered by four people. An extreme example, but telling.

These schemes can also mask the fact that a payer is unable to generate enough positive cash flow from its operations to pay its supply chain on time.

Supply chain finance schemes operate over a number of sectors of industry, not just construction, but the endemic and long term payment problems that beset the construction industry are crying out for real solutions, not the sticking plaster of 'pay to be paid'.

A less risky alternative is project bank accounts which are low cost and simple in comparison. The account is set up by the client and all participating contractors are given access. Payment terms can be whatever is required by the client; the account acts as a receptacle to hold monies, it doesn't prescribe any particular payment terms. For all but the very smallest projects, interest earned on the account (which belongs to the client), should cover the costs of the account.

Project bank accounts ensure that all contractors are paid at the right time and benefit SMEs by providing protection without any cost to them. Better to use them as the Westminster government and all the devolved governments, to varying degrees, do.

What is needed is not, as David Cameron seemed to think all those years ago, "increased levels of affordable finance". What is needed is for companies to pay their supply chain reliably and within a sensible time and project bank accounts provide a simple way to do this.

"Endemic and long term payment problems are crying out for real solutions, not a sticking plaster."

Sarah McCann-Bartlett

Sarah McCann-Bartlett is the director general of the British Constructional Steelwork Association.

Much to learn from 25 years of Manchester's Metrolink

As Transport for the North (TfN) develops its plans for improving connectivity in the north of England, there is much to be learned from Manchester Metrolink's success, says *Michael Odling*.

July marked 25 years since the opening of Manchester's Metrolink tram network. A quarter of a century later, Greater Manchester has transformed into one of Europe's most economically dynamic city-regions with its economy growing by 42% in the decade to 2012 alone. Metrolink, now the UK's largest light rail network, has undoubtedly contributed to this success.

Since its first line between Bury and Altrincham in 1992, Metrolink has expanded to seven of Greater Manchester's ten boroughs, with plans for more. Its extension was particularly important in the aftermath of the 2008/09 recession. At a time of faltering business confidence, the then-new MediaCityUK line helped attract major new employers and the East Didsbury route improved commuting times from some of Greater Manchester's most popular residential areas.

There is much to learn from Metrolink's success, particularly as Transport for the North (TfN) develops its strategic plan for improving connectivity in the north of England. One major lesson is the benefit of local authority collaboration. Transport for Greater Manchester (TfGM) has successfully corralled the city region's ten boroughs in pursuit of one strategic goal – to improve connectivity for all of its 2.6 million residents. That means a Metrolink that reflects Greater Manchester's economic priorities, bringing commuters into key commercial and industrial districts such as the city centre and Salford Quays.

Whilst some boroughs, such as Stockport, don't currently see any direct benefits from the major investment in Metrolink over recent decades, local authority leaders nevertheless acknowledge that a prosperous city-region is greater than the sum of its parts. It is rare to see any publicly expressed dissent on infrastructure issues. On transport – as with most issues – Greater Manchester speaks with one voice, and the faith in TfGM's strategic vision as set out in the Greater Manchester 2040 Transport Strategy is clear to see.

Another fundamental element of Metrolink's enduring success is the partnership between the public and private sector. At Mace we've been privileged to lead delivery of the new Altrincham interchange and public realm improvements at St Peter's Square as part of the revamped Metrolink station and refurbished Central Library project.

This relationship between the ambitious vision of TfGM and Greater Manchester's political leadership, and private sector organisations like ours which underpin this strategy with specific skills and knowledge to deliver the complex programmes and projects, has been key to the renaissance of the city region over the last 25 years.

As the UK begins negotiations to leave the European Union, and the government sets out its plans for a new modern industrial strategy, it is important to learn from our nation's infrastructure successes, as well as identify areas for improvement.

Metrolink shows what can be achieved when infrastructure is prioritised as part of a long-term economic vision. Over the past three decades, Greater Manchester has identified its sector strengths, selected key sites to support strategically important industries, and provided TfGM with the resources to connect these sites to make them attractive to employers and investors. The huge investment in logistics capacity at Airport City, for example, has been delivered alongside an extension of the Metrolink network, giving confidence to occupiers that they'll benefit from a city-region wide pool of skilled employees.

With its strategic plan for the north, TfN is seeking to replicate this approach by identifying strategic development corridors to integrate economic activity and

> "TfGM corralled the city region's ten boroughs to improve the connectivity for all of its 2.6m residents."
> **Michael Odling**

Metrolink is the UK's largest light rail network.

infrastructure development. Improvements to road and rail links across the Pennines, addressing historic infrastructure underinvestment in cities like Bradford and Leeds and enhancing connectivity between the north's ports and airports, are particularly important.

Ensuring new transport connections ally with economic priorities over the coming years will be particularly important for northern England given the historic underinvestment in our region's infrastructure.

TfN is already supporting a number of potentially transformational projects such as; Northern Powerhouse Rail, a plan to link northern cities with increased services and significantly reduced journey times, and additional highways infrastructure such as improved trans-Pennine road connections to reduce reliance on the M62.

Metrolink shows what can be done with strong leadership, real ambition and commitment to collaboration. Let's hope in another 25 years we can look back on similarly impressive improvements to transport connectivity across the north.

Michael Odling is head of rail in the north for Mace.

Mitigate risk – take ACE's health and safety guidance

Forthcoming seminars in London, Manchester and Glasgow will help businesses understand and address current and emerging health and safety risks.

Over the last decade, the UK has seen a decline in the yearly number of incidents in the workplace, yet there has been an increase in prosecutions as well as financial penalties being handed out for breaches in health and safety law since 2014, when compared to previous years.

In addition to financial or legal repercussions for breaches in health and safety law, businesses also risk considerable damage to their brand reputation, which can discourage potential clients.

Due to the repercussions that a breach can cause, health and safety issues are not a short-term risk for businesses but a long-term risk that needs to properly be considered and mitigated within a firm's overall business strategy.

To help businesses understand the risk, what is needed to comply, as well as provide expert insights into health and safety, the Association for Consultancy and Engineering (ACE) is hosting a number of training seminars throughout the UK between October and December 2017. Building on a series of health and safety training seminars that took place in 2016, the events will provide businesses with much-needed guidance to help them mitigate risks.

The seminars, delivered by experts in their fields, include sessions on driving at work, the key emerging issue of health and wellbeing in the workplace and a company's responsibility for staff when they attend out of office events and other activities.

Current seminars include:

- **Driving for work – Is this your biggest business risk?**
- **Health and Well-being – Understanding health and wellbeing in the construction sector**
- **Out of Office Activities – What are your responsibilities towards employees at these events?**

The seminars will take place at venues in London, Manchester and Glasgow during October and December. To sign up for the health and safety seminar near you, book online at www.acenet.co.uk/events

For further information on the seminars or ACE's work on health and safety issues contact Kate Buranska at *kburanska@acenet.co.uk*


The ACE training seminars will give much-needed guidance.

Devolved national groups serving members' interests



With the increasing influence of the devolved nations on the planning of strategic infrastructure and construction projects, ACE's organisation in Northern Ireland, Wales and Scotland is growing in importance as member firms look to access support and information.

Bill Taylor, Simon Shouler and Sam Ibbott are ACE's Northern Ireland, Wales and Scotland managers respectively. As ACE employees their role is to support the chair of their respective devolved nation group and its committee in developing the group's strategy, organising and administering meetings and activities and acting as the local liaison in responding to member queries, promoting ACE member benefits and identifying new members.

Bill and Simon are seasoned industry professionals who have been based in Northern Ireland and Wales for almost their entire careers. Sam has seven years of experience with ACE's sister association, the Environmental Industries Commission, and relocated to Glasgow in August 2017.

Bill, Simon and Sam are keen to support members on a range of issues and

If you have an questions or wish to get involved, please contact them as follows.

Bill Taylor, ACE Northern Ireland – btaylor@acenet.co.uk
Simon Shouler, ACE Wales – sshouler@acenet.co.uk
Sam Ibbott, ACE Scotland – sibbott@acenet.co.uk

Apprenticeships providing a world of opportunity

Apprentice of the Year winner at this year's Consultancy and Engineering Awards, *Jordan Laraway* of Arup, writes about the increasing popularity of apprenticeships as a route into the industry.

An apprenticeship is a work-based training programme that gives people the opportunity to gain professional qualifications whilst also getting invaluable on-the-job experience. It is an ever-developing training programme, growing in both popularity and academic opportunities, with more and more young people viewing this as the preferred option to launch their career.

Working for Arup as a railway engineering apprentice myself, it is an exciting prospect to know that by the end of my apprenticeship I would have earnt my degree and have gained almost five years of work experience, which would only be a year longer than the equivalent of three years of full-time study and a year sandwich placement.

In the UK alone, Arup's apprenticeship intake increased by 97% between 2010-2016, emphasising the increasing popularity of the route with students and employers alike. With the number and standard of people applying for apprenticeships increasing every year, the academic routes available to potential apprentices are expanding to accommodate demand, as demonstrated by the introduction of the degree apprenticeship.

Degree apprenticeships give people the chance to achieve their degree whilst gaining at least five years of industry experience. With the launch of the apprenticeship levy in April 2017 the scheme is now even more appealing to employers looking to recruit and develop staff. The levy is a fund employers pay into, which is in turn used to finance academic costs. In order to draw down from the levy, the funds would have to go towards putting someone through an approved apprenticeship scheme.

As well as these economic advantages of employing an apprentice, apprenticeship schemes give employers the opportunity to train apprentices to suit their specific requirements, which assists in freeing up existing staff time and enables employers to address skill gaps within their organisation.

Taking all of the above into account, one can reasonably expect the popularity and academic prospects of the apprenticeship programme to continue their growth trend. With more apprentices being trained to a degree level, the progression options available are likely to expand as a result and it is increasingly likely that post-graduate courses will be developed in the future, enabling graduates of the apprenticeship scheme to progress even further.

Some of the apprentices Arup has welcomed to its Midlands campus.

Exciting times in the regions for ACE

September promises to be an exciting month for ACE in the north, north west and Midlands regions of England, writes *Anil Iyer*.

Following the appointments in May 2017 of the new mayors of Liverpool City Region, Greater Manchester and West Midlands, ACE's north west and Midlands regional groups have mobilised to develop action plans for approaching mayors Steve Rotherham, Andy Burnham and Andy Street in respect of the interests of ACE member companies in those regions.

Additionally, the Progress Network groups for young professionals in those regions have arranged events with Midlands Engine and Northern Powerhouse themes. The first of these events, a panel discussion on the Midlands Engine was held on 28 June in Birmingham and this will be followed by a Northern Powerhouse-themed event in Manchester on 28 September. Also, ACE's north group based in Leeds is re-launching in September.

If you would like your company to have say in the development of emerging policies in the English north west, north or Midlands regions (based in Manchester, Leeds and Birmingham respectively) we would encourage you to join the regional groups as that helps strengthen our 'single voice' representation. The north west and Midlands groups will be finalising their strategies in September. Emerging professionals are also invited to attend the forthcoming Progress Network events.

For more information on any of ACE's English regional or devolved nation groups or Progress Network please contact Anil Iyer, ACE chief operating officer at aiyer@acenet.co.uk or 020 7222 6557.

Opportunities looming for Chinese collaboration

Despite economic uncertainty and overcapacity in key sectors, investment from China remains a key opportunity and a challenge for UK infrastructure leaders, writes *Nelson Ogunshakin*.

After many years of supercharged growth, China is in an unpredictable economic state as industrial profits slow, debt rises, demand slackens, and overcapacity continues in many key sectors. With around 30% of development funding coming from China and the country wishing to take on risks associated with global infrastructure, industry leaders are faced with some thought-provoking questions on the impact that the collective Asian investors could have on both funding for infrastructure as well as project preferences.

In December 2016, when I looked at some of the key challenges facing industry leaders, I identified the Chinese market as a key driver for business leaders in 2017.

Though many are currently focused on achieving political stability in the UK in the aftermath of the Brexit vote and the uncertain outcome of the UK general election, it is incumbent on business leaders to prepare for the immediate or near future impact of changes in the Chinese market players' strategic objectives. Ultimately, it is up to industry leaders to ensure that business success is assured, no matter what the fluctuations to the market might be.

For leaders, it will be essential to establish a sustainable business model that embraces the opportunities in the Chinese market as part of the collective Asian market as well as the UK market. This becomes an additionally challenging prospect when we do not know how those investors or companies currently operating in the Chinese market will be entering the UK marketplace.

Though growth is still seen as unusual in the Asian market when compared to the west, the relevant investment flows remain high, with China in particular continuing to rank amongst the strongest markets in the world for annual GDP growth.

Some key UK infrastructure projects depend on Chinese investment with Hinkley Point C, Thames Tideway, Heathrow Airport and High Speed 2 all being partially or substantially financed with Chinese money. While the investment sector is clearly keen to increase collaborations with those Chinese investors to co-finance major projects, there is also an increasing concentration on social and economic infrastructure in major cities such as Manchester or Birmingham. However, such forms of collaboration have not yet fully reached or entered the supply chain.

Some projects in the UK are reliant on China's funding.

Will the Chinese players enter and engage within the UK market through the African model or will the entry model be entirely different due to the different legislative and regulatory environment? If so, could this be an opportunity to be leveraged upon?

While time can only tell, one can look to recent acquisitions by Japanese companies for clues as to how their Chinese counterparts from the collective Asian market will choose to enter the UK market through the supply chain. Through Japanese companies acquiring UK consultancies, they have acquired delivery capability and an access point into new market opportunities.

Ultimately, money and investment will drive the collaboration and the entry strategy for Chinese companies. It will remain to be seen whether this will take the form of strategic collaborations or if they will look to acquire consultants, contractors or technology.

> "Now is the time for leaders to discuss and explore forms of strategic collaboration with the Chinese players."

In the UK we have the advantage of understanding the European legislative, regulatory and procurement processes, which can be packaged as an advantageous benefit for future international collaboration. Delivering growth for profitability in a shifting business landscape means that CEOs and business leaders must be fully aware of the opportunities and challenges faced from international investment.

Given the number of recent, large scale acquisitions in the UK and USA marketplace, now is the time for leaders to discuss and explore forms of strategic collaboration with the Chinese players. The European CEO conference, taking place in November, in collaboration with the European Bank for Reconstruction and Development (EBRD) presents leaders with a unique Chatham House opportunity to discuss collaboration with other global market players as well as other issues related to how companies in the built and natural environment navigate the various forms of global uncertainty ahead.

If we are to deliver growth for profitability in a shifting business landscape then we need to devise a strategy to address how we work in collaboration with not just the Chinese market players and investors, but across the world.

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

Searching for silver linings amidst the Brexit clouds

With the business implications of Brexit still far from clear, *Matthew Farrow* looks at what the implications are, and how the prospects might unfold, for environmental consultancies when the UK leaves the European Union.

Almost six months on from the triggering of Article 50 it's hard for anyone to feel much the wiser as to the way Brexit will unfold. No deal; staying in the Single Market; the 'Norwegian option'; a bespoke trade deal; indefinite transition arrangements – only a brave person would rule any of them out at this point. In business though, planning has to be done whatever the uncertainties, so it's worth thinking about the likely implications for a core part of EIC's membership – environmental consultancies.

Both consultancy and environment protection are international activities and so it's no surprise that many environmental consultancies recruit staff from across the EU. Some have told me that up to 20% of staff in their London offices are non-UK EU nationals and that there are specific fields – ecology has been mentioned – where it is hard to fill posts from UK candidates alone.

To my mind there is already a question as to whether the UK environmental sector has adequate capacity to deliver the environmental requirements of the government's broad objectives across housing, infrastructure and air quality – something I'm not sure ministers fully grasp – and Brexit-induced skill shortages are hardly going to help.

Of course, environmental consultancies are not alone in having concerns and it may be that a solution will be found. One minister I spoke to recently mused that a likely compromise would be going back to 'free movement of labour' rather than the current 'free movement of people '– i.e. an EU national could move to the UK to take up an advertised job.

Another impact could be on the future ability of consultancies to win work from the European Commission and other Brussels bodies such as the European Environment Agency. For the multinational large consultancies who have offices in Brussels this won't be much of a problem, but for UK-based SME environmental consultancies it may be more of an issue. It's vital that as we leave the EU the UK signs up to the WTO Government Procurement Agreement as this will facilitate UK-based firms' access to EU contracts.

How will consultancies be able to win work from the EU and agencies such as the European Environment Agency after Brexit?

What about the broader impact on the demand for environmental consultancy services post-Brexit? For nearly 40 years EU membership has locked the UK into a process of gradually tightening environmental standards and steadily more complex environmental obligations on mainstream firms such as developers and manufacturers. Given the time EU legislation takes from initial agreement of principles to actual implementation at member state level, this has helped support a fairly predictable pipeline of work for the environment consultancy market.

> "There is already a question as to whether the UK environmental sector has adequate capacity to deliver the environmental requirements of the government's broad objectives across housing, infrastructure and air quality."

Of course it's possible that post Brexit the UK will continue to have to comply with EU green laws. This will be the case if we stay in the single market in a relationship with the EU similar to Norway's, or if we conclude a free trade deal with the EU which stipulates UK compliance with these laws (the EU parliament recently declared that such compliance should be a 'red line' in EU trade negotiations with the UK). But if this does not happen, then my personal view is that UK (or at least English) environmental policy will be a combination of stasis in some areas combined with kneejerk reform in others in response to scandals and tragedies such as the Grenfell fire. This could mean less predictable work pipelines for consultancies.

Having said that, many firms look to consultancies for support and advice in times of uncertainty and with the outlook for environmental regulation and policy more uncertain than for decades, this in itself could drive additional consultative work.

Every cloud and all that…

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

Phasing large-scale recruitment for project success

Like any successful construction project, large-scale recruitment of staff should be phased to avoid potential pitfalls, says *Michael Brennan.*

The latest HS2 milestone has been grabbing headlines as the winners of £6.6bn worth of contracts have been announced, not least because this phase of the project will support 16,000 new jobs.

HS2 will be a genuine engine for growth across the UK as it greatly improves rail capacity, reliability and speeds between the north and the Midlands to London, bringing British rail infrastructure into the 21st century.

Over its lifetime HS2 will create around 25,000 jobs during the construction phase alone as well as 2,000 apprenticeships and fuel economic benefits worth more than £103bn.

For the likes of Carillion, Costain, Balfour Beatty, their joint venture partners and sub-contractors, this signals the start of a major recruitment drive to identify and attract the right people to fill these all-important roles. So, when it comes to large scale recruitment, where should employers start and how can they avoid any potential pitfalls?

A phased approach

Businesses large and small are well aware of the vital importance of hiring the right people. As Lawrence Bossidy, former chief operating officer of General Electric Credit Corporation, now GE Capital, said: “Nothing we do is more important than hiring and developing people. At the end of the day you bet on people, not on strategies.”

When looking to fill numerous roles, it can be tempting to hire quickly, bringing in extra hands en masse. It’s worth bearing in mind that recruiting too many candidates, too fast can create challenges when it comes to on-boarding and there is a danger that organisational and team culture can be diluted if this isn’t handled carefully. We advise creating a schedule of phased recruitment to ensure businesses are maximising employee engagement. Enabling managers to invest time with new starters helps to building better morale, improves retention and provides better value for money in the long run.

Investing time in new starters will pay dividends in the long-term.

It is understandable that British businesses may look to recruit construction and engineering talent sooner rather than later, as they await clarity on the access they will have to European workers once Brexit negotiations have concluded.

The UK already has a record £500bn pipeline of infrastructure projects. As we leave the European Union the country is expected to invest further in infrastructure to boost growth and improve connectivity to international markets. The requirement to recruit on large scales is expected to increase.

Finding talent during a skills shortage

While it’s great news that the pipeline of new business for contractors remains strong, the construction and engineering industries are still in the grip of a skills shortage. The UK’s engineering industry alone is facing a shortage of unprecedented levels and is expected to need 1.8million people trained by 2025. Leaving the EU could also see Britain lose 8% of its workforce according to RICS.

If employers communicate a compelling vision of their business, they stand a better chance of hiring the right people. For this reason, it’s essential to consider branding and communication as part of recruitment strategy. Establishing a meaningful brand does not just help you win customers, it helps attract people who will be passionate about working for the company.

Organisations can also focus in on the importance of a project to attract talent. HS2 itself offers workers a once-in-a-generation opportunity to work on Europe’s largest and most exciting infrastructure project. This gives businesses without a well-known brand a strong hook to seek out exceptional talent.

Businesses operating in countries which have skills shortages do have other options to help widen their talent pools. They can look outside their own industry to train up workers with transferable skills by analysing complementary sectors in which engineers for construction could be recruited from. They can also look outside their own country to bring in talented workers from abroad.

When handling large-scale recruitment, it can be tempting to cut costs and percentages as much as possible. But be wary that this can often be a false economy. In a world of global competition and a shortage of skilled workers, it makes sense to work with recruitment partners that have broadest and deepest talent pools to ensure the right people are brought in who will add real value to your businesses.

Michael Brennan is UK operations director at NES Global Talent.

Investing now to futureproof tomorrow's infrastructure

With existing infrastructure systems straining to meet demand, updating of existing infrastructure networks and massive new investment is a priority to support expected rates of growth, say *Helen Garthwaite* and *Suzanne Gill*.

As global populations both grow and become ever more connected – both physically and digitally – cities across the world are increasingly recognising the need to significantly invest in infrastructure today to prepare for tomorrow. Fundamentally, existing infrastructure systems are straining to meet demand, with McKinsey Global Institute estimating that the world will need to invest $3.3 trillion in economic infrastructure (from airports and highways to telecoms and power) annually until 2030 just to support current expected rates of growth.

For the UK, the infrastructure priority was tackled head on in a post-election statement by chairman of the independent National Infrastructure Commission, Lord Adonis. His subsequent 12 priorities – ranging from London airport expansion to an eastern crossing of the River Thames, as well as action around telecoms and power – invoked a Victorian spirit with large-scale infrastructure planning central to UK's global competitiveness and productivity.

To this end, connecting UK cities with each other through updating of existing infrastructure networks is a priority, but so is connecting the UK to other global powerhouses. The need is summarised poignantly by Adonis saying there is "no point saying Britain is open to the world if business cannot get in because Heathrow is full".

Arguably the UK is taking some steps to address its historic underinvestment in infrastructure. The mayor of London's latest transport strategy will have struck the right note for many city dwellers, addressing concerns around the digital and physical infrastructure in the capital, along with an appreciation of where these converge.

Whilst this forward-looking approach is to be applauded, there remain real challenges to effective implementation. London, and the new devolved city mayors of Birmingham and Manchester, do have some powers to implement significant change but civic governance structures will likely need to adapt to keep up with the pace of change. Whilst one city solution may not suit all, city-to-city collaboration at this level may be valuable and consideration should be given to how this can be facilitated for the future.

Tomorrow's cities will be 'smart' so preparation and investment is crucial.

However, the city of the future will be nothing like its Victorian predecessors. Tomorrow's city is a smart, connected city and today's challenge is to prepare and invest accordingly. For example, it is estimated that £17bn could be added to UK output by 2025 as a result of increased broadband speeds, so it is unsurprising to see Adonis emphasise the need for renewed attention to the government's broadband and mobile commitments.

Further, Cisco predicts that global internet traffic in 2020 will be the equivalent of 95x the volume of 2005, with an estimated 30.7 billion connected devices at this point. As we become ever-more digitally connected, new rules are likely to be needed and new risks addressed, with cyber-security and data protection firmly in the spotlight.

Arguably, this future is closer than we may think. The opening of the world's first smart, sustainable street in London's West End, has brought together energy efficiency, data-collection and pollution reduction. Elsewhere in the capital, BT has rolled out next-gen phone booths providing free superfast wi-fi replacing London's iconic red pay-phone boxes, while increasing attention is rightly being given to the role of autonomous vehicles in cities and AI in public transport systems.

As these new solutions continue to develop, significant regulatory changes may be required to not only enable better, more effective, implementation, but also to police the system and ensure that tomorrow's city is not only mobile and integrated, but safe and secure.

Lord Adonis has called on the UK government to address his particular priorities by the end of 2017, but some of the big questions that always arise with significant infrastructure projects is where does the money come from and how it is used?

There remains socio-political tension between how much new and future-proofed infrastructure is wanted (and needed) and how much we are prepared for the state to deliver systems for the good of all. There is a place for private sector investment too, but current financial, lending and tax structures will probably need a shake-up to better facilitate and encourage the patient capital investment that infrastructure demands.

Helen Garthwaite (left) and Suzanne Gill (right) are partners at Wedlake Bell and co-founders of Tomorrow's City, Today's Challenge. http://tctc.wedlakebell.com/