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# I INFRASTRUCTURE Intelligence

*Produced for the industry by the Association for Consultancy and Engineering*



## Why good design always matters

Sadie Morgan – a driving force for the future of UK infrastructure

page 9



INFRASTRUCTURE Intelligence

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MESSAGE FROM THE EDITOR

This month’s Straight Talk interview with Sadie Morgan was easily one of the highlights of the two years since we launched Infrastructure Intelligence. It is fair to say that the sector needs more people like Sadie to stand tall.

As her interview makes clear, she brings design passion and commitment and genuinely understands that infrastructure is conceived, delivered and operated by people and for people.

In particular her description of what constitutes good design and her plainly spoken explanation of the vital teamwork and collaboration that underpins success should resonate with all across the sector.

“A happy team produces work that is good and full of joy,” she says. “You do that by making their environment nice and by listening to them.” Simple, but so often not understood. Having written many words over the years about the vital need for collaboration and team work across the silos of infrastructure, it is clear that breaking out of traditional roles is hard.

Hence the importance, for me, of a second critical point raised in the interview. “A bit of disruption is definitely good,” says Morgan. “When everyone is patting themselves on the back that is when you absolutely have to poke them where it hurts.”

The UK infrastructure sector is extraordinarily talented and has led the world when it comes to creative and innovative ideas. The challenge is not only that the rest of the world is catching up, but also that, as technology increasingly plays a central role, the world is changing. Fast.

Without disruptive ideas to break out of the status quo, infrastructure professionals will inevitably be left behind.

So as I and the Infrastructure Intelligence launch team step down and hand over to the new editorial team, it is worth reflecting on these issues.

I hope that over the last two years we have successfully brought you happiness and some small joy each week, while at the same time added a bit of welcome disruption to the fast moving world of infrastructure communications. 2016 will be an exciting year for us all.



Antony Oliver, Editor, Infrastructure Intelligence

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News roundup

AVIATION

A group of 32 British regional airports have called on the Government to back plans to expand Heathrow. The Regional & Business Airports Group which represents airfields in towns and cities including Exeter, Newquay and Southend, has written to Transport Secretary Patrick McLoughlin to voice support for a third runway at Heathrow.

MPs on the House of Commons Environmental Audit Commission have warned Government not to give the go-ahead to expand Heathrow until the operator sets out clear commitment to the Airports Commission conditions over noise, air pollution, transport and night flights.

BUSINESS

MWH has been appointed by Amey to perform Owner’s Engineer and Project Management Services as part of its £225M Isle of Wight Waste Contract. As part of this contract Amey will be applying for planning permission and an Environmental Permit for a state-of-the-art treatment facility which will include a new mechanical treatment plant and refurbishing the existing advanced thermal treatment plant at a cost of £50M.

Kier-owned Mouchel Consulting has won the contract to provide consultancy services for North Yorkshire County Council. The four year, £40M sole provider framework starts in April 2016 and relates to a range of services including estates management, property projects and highways services.

Atkins has signed an agreement to acquire the Projects, Products and



Transport Secretary Patrick McLaughlin has confirmed the plan to accelerate construction of the High Speed 2 route to Crewe by six years to open in 2027 as part of a plan to support growth in the north west. Powers to build the new route between Fradley in the West Midlands and Crewe, now known as ‘Phase 2a’ of the project, will be sought through a separate hybrid Bill due to be introduced to Parliament in 2017. “In his reports, ‘HS2 plus’ and ‘Rebalancing Britain’, Sir David Higgins recommended that we seek to build the section of the route to Crewe more quickly to deliver further benefits to the north sooner,” said McLaughlin. “We agree that we should realise the benefits of HS2 as soon as possible. We intend to accelerate Phase 2a so that it opens 6 years earlier than planned, in 2027,” he added. “This will bring more capacity and faster HS2 services to the north-west of England, including Crewe, Liverpool, Manchester and Scotland much sooner than originally planned. Our plans will help to support growth and deliver jobs more quickly.”

Technology segment of US firm EnergySolutions an international nuclear engineering services business, for US\$318M (£206M).

ICE has joined an international coalition that will develop the first set of globally-recognised ethics standards for real-estate and built environment professional organisations. The International Ethics Standards Coalition was created at the United Nations last year. ICE is the 60th organisation to join the coalition. It is hoped that the new International Ethics Standard will be ready by early 2016.

Manufacturing orders have stabilised, but exports are at their lowest for almost three years, according to the latest CBI monthly Industrial Trends Survey. The survey of 458 firms shows that output also recovered, though another small fall is expected in the coming three

months. 29% of firms reported that output grew in the three months to November, while 25% said it decreased giving a balance of +4%, from -4% in the three months to October.

ENERGY

MPs on the Energy and Climate Change Committee have grilled executives from National Grid over security of UK electricity supply this winter. The average cold spell peak power demand is forecast to hit 54.2GW this winter and the reserve margin is forecast to be 5.1%, down from 6.1% in 2014.

Coal power plants to close by 2025 as Government chases clean energy security. Gas and nuclear to be mainstays of future power mix says Energy Secretary Amber Rudd; but she announces three new offshore wind auctions though industry has to cut costs.

RenewableUK is highlighting new official Government statistics which show that more than three-quarters of the British public support using renewable energy. The Public Attitudes Tracking Survey published by the Department of Energy and Climate Change shows an increase in the percentage of people supporting renewables to 76%. The level of support has remained consistently high as it stood at 75% in the last quarterly survey. Support for onshore wind has also increased slightly since it was last included in polling six months ago, rising from 65% to 66%, despite the Government’s decision to end financial support for future onshore wind projects. Support for offshore wind stayed the same at 73%, and marine energy stood at 73%.

The UK could build one of the world’s first small modular nuclear reactors after ministers announced support for the technology through a £250M research package. A competition to identify the “best value small modular reactor design for the UK” will be launched in the new year, which will “pave the way towards building one of the world’s first small modular reactors in the UK in the 2020s”, the Treasury said.

One of the UK’s most hazardous buildings at Sellafield is closer to being cleaned up after delivery of a huge piece of decommissioning kit. A 50t ‘transfer tunnel’ manufactured by Ansaldo NES in the West Midlands arrived at the Sellafield site, ahead of being hoisted into place in the Magnox Swarf Storage Silo building. The tunnel is the main component of the first Silo Emptying Plant (SEP) – one of three 360t machines which will scoop out the highly radioactive contents of the building as part of its decommissioning.



HOUSING

House builder Persimmon has said it is to build over 80,000 homes and create 1,000 jobs over the next five years. Around 1,000 new employees will join the developer’s existing 4,500-strong workforce.

PEOPLE & CAREERS

Balfour Beatty has appointed Hector MacAulay as managing director for its regional construction and civil engineering business in Scotland and Ireland. MacAuley has been with Balfour Beatty for 26 years.

Horizon Nuclear Power has appointed Carl Devlin, London Underground programme engineer for the subsurface Tube upgrades, as programme director for the planned Wylfa Newydd nuclear power station.

POLITICS

Infrastructure professionals broadly welcomed the Chancellor’s continued focus on investment in infrastructure in the Spending Review but warned that while capital spending was maintained, cuts in operational budgets across department could have significant delivery implications.

The Welsh government has challenged the Treasury to match nearly £600M it has pledged for economic development and transport projects in south east Wales. A formal Cardiff “city deal” submission was made ahead of the chancellor’s spending review on 25 November. Welsh ministers have pledged £580M and the councils £120M, while £580M from the Treasury would make for a deal worth nearly £1.3bn.



Construction work on the £284.23M Metropolitan Line Extension to Watford will start next year, London Underground has confirmed. Completion date for the new link will be 2020.A full funding package has been agreed between the Department for Transport (DfT), Hertfordshire County Council and Transport for London (TfL), and the work will be delivered by LU. Local funding amounts to £125.35M, DfT is providing £109.82M and TfL the remaining £49.23M. It is claimed that over 6,500 permanent jobs and a 2bn boost to the local economy will be created by the Metropolitan Line Extension. Two new stations are to be built at Cassiobridge and Watford Vicarage Road, served by new walk-through air-conditioned trains every ten minutes to and from central London during peak hours.

RAIL

Dame Colette Bowe’s review into the planning of Network Rail’s 2014-106 enhancements programme slates rail industry planning and oversight. It finds the DfT, ORR and Network Rail all at fault for mismanagement of CP5 enhancements. Transport Secretary accepts all recommendations.

Tram trains are on the way. The Department for Transport approved a transport and works order submitted by Network Rail and the South Yorkshire Passenger Transport Executive (SYPTe) for the Tinsley Chord. The scheme will see 160m of new track built in South Yorkshire to link existing rail and tram networks. When the scheme is completed, European-style tram-trains will be able to run between Britain’s rail and tram networks for the first time. They will provide a direct service between Rotherham Central railway

station, Parkgate retail park and Sheffield city centre.

According to Global Construction Review Japan’s ambition to build a high-speed magnetic levitation railway in America has taken a step closer. The US Department of Transport has agreed to give the State of Maryland \$27.8M for a feasibility study into a 500km/h maglev rail link between Baltimore and Washington, DC.

Atkins has won a framework agreement to provide technical consultancy expertise for the renewal of Norway’s rail signalling system on over 4000km of track. The Norwegian National Rail Administration (Jernbaneverket) has committed to implementing the European Rail Traffic Management System (ERTMS) on the Norwegian railway network with the roll-out of ERTMS Level 2 and Baseline 3 due for completion by 2030. The duration of the initial

framework agreement is two years with options to extend at the end of the contract period.

A high-speed TGV train derailed near Strasbourg, killing at least 10 people, officials say. The crash happened during a test run in the town of Eckwersheim, on a new Paris-Strasbourg line due to open next year. The train was carrying 49 railway technicians when it derailed, caught fire, and plunged into a canal. Eleven people suffered serious injuries. The derailment was due to “excessive speed”, officials say.

Sir Peter Hendy has reported on the replanning of Network Rail’s investment programme and found that costs for rail CP5 enhancements have increased 21%. Network Rail is to sell £1.8bn of assets and raise a further £700M by borrowing to cover a £2.5bn increase in the price of its enhancement programme for CP5 (2014-19) originally priced at £11.8bn.

ROADS

Balfour Beatty’s ECI work has led to it being confirmed as contractor for the £104M Norfolk Northern Distributor Road. The new 19.5km dual carriageway will serve Broadland in Norfolk and improve access to North Norfolk international airport and Great Yarmouth.

Venson helped to highlight BRAKE Road Safety Week last week with its latest research aimed at understanding drivers’ approach to road safety. When asked what one thing they would do to help with road safety while driving, the top answer from respondents was ‘be more patient (24%), with ‘giving themselves more time for journeys’ coming second (20%). Driving slower in bad weather conditions was the third highest answer

(15%) in the Venson research. Sticking to the speed limit came in fourth (13%), followed by staying further back from other vehicles and paying more attention to other road users – each receiving 12% of motorists’ votes. Surprisingly, giving cyclists more room when overtaking only got 1% of the vote.

A new section of smart motorway is being soft launched on 5 December on the M1 near Wakefield. A 50mph speed limit will remain in place while Highways England test the technology before the first phase of the system goes live on a 7.5 mile stretch between junction 39 (Denby Dale) and junction 41 (Morley) on Saturday 12 December. An extra lane will also open on the northbound carriageway between junction 41 and junction 42 (Lofthouse). Contractor for the section is bmJV and designers are Hyder Halcrow joint venture.

TRL, the Transport Research Laboratory, has partnered with Colas to launch a one day roadside working training course for professionals who have to operate or stop on the roadside. The course aims to help reduce the number of roadside injuries and fatalities by raising awareness of roadside working risks and arming workers with the knowledge they need to create and maintain a safer roadside working environment.

WSP Parsons Brinkerhoff has been awarded a £2M design contract to trial innovative noise reduction barriers on sites along the M40 between junction 3 and junction 8 which have been identified as areas where road noise is a particular issue and help decide where the barriers would be of benefit. Earlier this year, Highways England, working in partnership with the M40 Chiltern Environmental Group, (M40 CEG) Wycombe

District Council and South Oxfordshire District Council, ran a competition to develop a range of cost-effective barriers to reduce noise.

TECHNOLOGY

Amey, is investing almost £1M in innovative fleet technology that has the potential to save lives by making its drivers more aware of cyclists and pedestrians. The company is starting the rollout of the technology on its fleet of over 100 refuse collection vehicles in London. They will be equipped with Cycle Safety Shield technology created by Israeli firm Mobileye. The system uses smart cameras and sensors to act as a driver’s third eye to monitor blind spots round the vehicles. The system also provides drivers with real-time visual and audible alerts as the risk of a collision increases. When the rollout is complete, Amey will have around 200 vehicles equipped with this technology – making it one of the largest fleets in the UK to be fitted with this advanced system.

WATER

An innovative treatment works using the natural environment to clean metal-rich water from an abandoned mine has been opened in Cumbria. Funded by Defra, the Force Crag mine water treatment scheme needs no chemicals or power and will clean up a 6 mile stretch of river, preventing up to a tonne of metals, including zinc, cadmium and lead, from entering Bassenthwaite Lake each year. The concept was developed by Dr Adam Jarvis and his team at Newcastle University and delivered by the Coal Authority in partnership with the Environment Agency, the National Trust, the Lake District National Park Authority and others.

INTERVIEW: Isabel Dedring, London’s Deputy Mayor for Transport



In four months’ time Londoners will choose their next Mayor. Having driven environment and transport policy throughout Boris Johnson’s term of office, Isabel Dedring well understands the huge challenges facing the capital. AO

What are the critical issues facing the next mayor? I’ll pick three. First congestion on the roads - with a rising population and a road network that isn’t getting any bigger there is massive pressure especially in areas of big growth. Second is how to bring the rail network across London into better use. We have a massive network but much of it is underutilised and without a turn up and go service. The third thing is how we link housing with transport in the growth areas. One million of the population growth identified will come from 30 growth areas – we need the right infrastructure.

Can London grow while also hitting other quality of life targets? Yes, definitely. It is just a matter of execution and often also means thinking about quality of life in a different way. Parts of London are going to get denser but that doesn’t mean that we can’t have better road safety, more trees, cleaner air, nicer playgrounds alongside a denser built environment – those things can coexist.

Why is it still so difficult to get private sector funded transport schemes such as witnessed at the Northern Line Extension going in the capital? The funding streams are

there and the financing techniques are available. What we don’t have is enough deal makers within the industry who are senior enough and have the ability to draw these complex deals together and to get the deals done. With NLE there are a lot of complex issues around risk with the developers, local authorities, TfL, and the utilities involved. You need a particular skill set to get the deals done.

Could the private sector fulfil this role? Yes I think it is a huge gap in the sector generally. We don’t have those people in house. Bringing in private sector thinking is something that we are actively looking at.

Are we doing enough to convince the public that investment in infrastructure is vital to improving life in the capital? No, I don’t think we are. We need to describe what we are delivering in the form that people understand and care about. That means talking about more cycle ways, pedestrian crossings or creating a new public plaza with shops and trees.

What is the legacy of this Mayoral administration? The roads programme is something that I am very proud of and I hope that we are now on a longer trajectory to much more investment in the network to tackle road safety, cycling issues and to make London a nicer and more liveable place. But there are many other things such as the work that we have done on low emission zones and the ultra-low emission zones coming into force in 2020.

What are you going to do next? You’ll be the first to know!



**Ailie MacAdam**, Regional Manager for Infrastructure, Europe & Africa, Bechtel

# Getting value for money on major projects

“Leadership of a successful delivery organisation will look very different tomorrow than it does today. It is up to our industry to “look around the corner” and prepare our leadership to be ready.”

Crossrail has been described as a “textbook example of how to get things right” and another milestone in the project was recently reached as Network Rail passed the halfway point on its £2.3bn investment to get the existing outer London network ready. There is still much to be done, but given many projects of this magnitude experience a ‘mid-life crisis’, reaching this point is extremely positive.

This successful milestone comes on the heels of the Reading Station redevelopment - another success story for the rail industry which sets a positive example of how to achieve value for money for the taxpayer.

As the National Infrastructure Commission kicks off, it is timely to assess lessons from individual infrastructure projects. My experience of leading delivery teams leaves me with the belief that a collaborative ethos gives projects the greatest chance of success.

Start with the end in mind is a good place to kick off. The importance of spending quality time up front to define the required outputs of the project or programme cannot be overestimated. This may sound obvious, but all too often we see this step missed in the enthusiasm to secure the supply chain and show some physical progress.

Successful project delivery models are also those with a clear delineation of responsibilities. Having an appropriate balance between autonomy and governance, with the freedom to take difficult and timely decisions, is also crucial to success.

Another important factor is ensuring there is a broad market of capable and interested contractors. Procurement and delivery structures should match the capability of suppliers in the marketplace. This is particularly important for the largest projects where there may be very few creditworthy suppliers who can guarantee delivery.

To address this challenge, in some cases consortia are formed to share the risk. A more innovative solution could be for the private sector to manage the implementation of such projects and to procure capital works delivery from a broader cross section of suppliers, generally via a number of smaller valued contracts.

In setting up the National Infrastructure Commission, the Government has signalled its intent to take a longer-term view and learn lessons. This is to be welcomed. We owe it to our colleagues to show that we can learn from their achievements to deliver successfully in the future.



**Paul Jackson**, Chief Executive, EngineeringUK

# Time will tell if George Osborne’s latest spending review is good for engineering

Having had a mixed reception across the business world, the impact of the Government’s new apprenticeship levy, may be very different to firms across the engineering sector.

Engineering pays above average salaries, an important detail given the criteria for the levy is not (as anticipated) the size of the company, but the size of the salary bill.

With 0.4% of engineering companies employing over 42% of the workforce, there is a real question around whether we can be confident of getting the right capacity.

Engineering is an industry dominated by SMEs: almost 80% of engineering firms have fewer than five employees. However, it is the small number of large companies that generate the greatest levels of employment, resulting in a uniquely skewed distribution that brings its own challenges.

Other elements of the Chancellor’s Statement have been more widely welcomed by the industry, not least the capital investment in infrastructure. There was also support for the announcement that the science budget is to be protected for the next five years.

Both are vital to the prospects of the industry and both are reliant on a steady stream of new talent entering the

workforce.

Will engineering employers reap the benefits of the apprenticeship levy with an influx of ‘earn as you learn’ recruits or simply end up subsidising other parts of the economy?

While we continue to have an annual shortfall of engineers and technicians, that talent pipeline is not restricted to engineering roles. As things stand we do not have the teachers and academics in higher education to deliver the rate of qualified workers the industry needs.

The introduction of maintenance grants for part-time students and greater access to loans for anyone looking to do a second degree in a STEM subject could push up the numbers interested in engineering qualifications.

But are universities and colleges in a position to take on more students in these subjects? Are we taking seriously enough the need to build capacity to deliver the required change?

We will need time to really take stock and see how much engineering will gain from this latest spending review.

If investment in infrastructure and the aerospace, automotive and energy sectors is accompanied by a strong programme of innovation and a system that supports the development of new talent then we may be onto a winner.



**Beth West**, Commercial Director, HS2

# ‘The Government Must...’ Really?

In my various procurement roles, I quickly came to the conclusion that having an open discussion with suppliers about pipelines of work is the first step to achieving competitive and high quality bids.

Unprepared suppliers mean last minute bids which are likely to result in sub-optimal outcomes for both parties.

So when I joined HS2 Ltd, I was committed to talking to our potential supply chain, particularly considering the size and scale of the programme and the need to mobilise a massive supply chain. So we’ve been talking. A lot.

And because we’ve sought to demonstrate that we’re a collaborative client, we’ve listened to what our potential suppliers have had to say and we’ve adjusted our strategies accordingly. And we think that this approach will end up with higher quality bids, more appropriate partners and better outcomes.

But there has been a consistent theme heard from the contracting community: that ‘Government should do more to provide us certainty of work.’ I find this attitude troubling as it seems to be unique to the construction industry and counter-productive to their

long-term self-interest.

As far as infrastructure investment in the UK is concerned, it’s never been so good. The commitment and cross-party consensus towards infrastructure investment is amazing. In most other industries, companies would look at this massive opportunity, figure out how they’d like to profit from it and invest accordingly. This does involve taking risk and not everyone will be successful.

Two percent margins, you say. Shareholder pressure. Privately held companies can do it but we can’t.

I worry that if this is the approach that construction companies have to the incredible opportunities that we have at this moment in time, we’ll all lose. To win, and to improve margins, research and development is needed.

Yes, we clients have a massive role to play in procuring for value rather than lowest cost. But we need something back in return. We need to see that contractors are providing us with that value.

And if we don’t, and delivery of this infrastructure investment is late and over-budget, we’ll all look back on this period as opportunity lost, to the detriment of everyone.



**Claire Gordon**, Chairman, Copper Consultancy

# Time to share the infrastructure story

The public’s published views on infrastructure are largely restricted to those relating to the impacts of specific projects, in particular how construction affects communities and individuals. This naturally serves to perpetuate people’s negative perceptions. Yet the broader picture is that people want new infrastructure and there is much enthusiasm for it.

Our report, launched in December 2015, ‘Independent survey of attitudes to infrastructure in Great Britain’, shows there is overwhelming support. Over 87% want investment in energy, housing, transport, waste management and flood defences, with 42% seeing this as being a priority to boost the economy.

But, the report also reveals that only 6% believe there is a “very well co-ordinated” infrastructure plan. People are calling for more leadership and engagement to understand how decisions are made and how they can be part of the process.

There has never been a clearer case for improving communications in this sector. In the context of the National Infrastructure Plan (NIP), the current scenario is that those consulting with stakeholders on a major project are

required each time, at great expense, to communicate a national story and broader need case, from each client’s perspective.

Logic concludes that this is happening now across the country in the context of many different Nationally Significant Infrastructure Projects (NSIPs).

And the story is being told differently each time. This is inefficient and means that the consultation and engagement phase of planning is taking longer and costing more than it should. It is also causing uncertainty and a lack of public and stakeholder trust, which can affect investment decisions.

Developers, therefore, should be encouraged to discuss project benefits, mitigation and community gain ideas with host communities during the planning phase. There are many reasons why historically this has not been encouraged, yet the fact is people want to know what is in it for them. In our work we find that hosting infrastructure rarely features on a community’s wish-list, but as a project unfolds, opinion can change dramatically for the better.

The British public is keen and willing to press on.





Lord Adonis, Chair,  
National Infrastructure  
Commission

## Now we must turn the theory into practice

The public wants more investment in world class infrastructure - that's the message of Copper Consultancy's excellent 'Attitudes to Infrastructure' report, released earlier this month.

I also know the industry wants to see greater investment in top quality projects.

Her Majesty's Opposition certainly does - three years ago the Labour Party asked Sir John Armitt to draw up plans to revolutionise the way we introduce nationally significant development in this country.

And it is clear the Government does too - that's why it took those plans forward and established the independent National Infrastructure Commission, which I chair.

So there we have it: a broad consensus. The willing is there, so the question for us all is how we turn that theory into practice - and an answer is long overdue.

For too long British people have had to suffer from train delays and road chaos, electricity bills that are too high and affordable decent housing a scarcity of; all consequences of successive governments' failure to plan for the long term.

For Britain to get on with the job of delivering high-quality infrastructure that benefits everyone, we need more than just a commitment to invest - we need strategic plans and the maximum possible consensus.

So the new, independent National Infrastructure Commission will transform the way we plan and deliver major infrastructure projects in this country, enabling the long-term decision making we need to unlock the jobs and growth of the future.

The NIC will collect the evidence, listen to the arguments, and think dispassionately and independently. We will report on what the UK needs, providing authoritative and impartial advice on the country's priority requirements over the coming decades.

Of course, Ministers and Parliament must take the decisions, but the Commission will provide the evidence they need - and hold them to account if they duck or delay.

Major projects span governments and parliaments, so building consensus nationally will form a vital part of our work. Where it does not exist - as with runway capacity in the south-east - decisions have again and again been deferred, and are now decades overdue.

Without big improvements to its transport and energy systems, Britain will grind to a halt. So this is where the NIC will begin, with reports on three of the most pressing issues ahead of the

March 2016 Budget.

First, connectivity between the great cities of the north has been too poor for too long. It takes almost two hours to travel from York to Liverpool. You can get to London, twice as far away, just as fast. If the Northern Powerhouse is to become a reality, its connectivity must be improved. Now we need cost-effective plans to make sure that happens.

Next, London's growing population - set to be 10 million by 2030 - means an additional five million journeys a day in 15 years' time. So the NIC will assess the need and options for future large scale investment in London, including proposals for Crossrail 2 and analyse the impact that transport investment can have on employment, housing and productivity.

Third: energy. The nature of our supply is changing - and without action the UK's power sector faces a growing problem matching demand and supply. Our existing infrastructure, designed for a post-war world where homes and businesses were supplied almost exclusively from large fossil fuel generators, is coming to the end of its natural life. As we decarbonise our power supply we need to find new ways to manage the network in the most efficient way possible. The NIC will consider how we make that happen.

Over the longer term the Commission will provide an assessment of the UK's infrastructure needs once every parliament, looking 30 years ahead and examining the evidence, from transport and energy, to broadband and flood defence.

That National Infrastructure Assessment will be at the heart of the way we reshape infrastructure planning and delivery in the UK. It will look across departments and across the country to create a genuinely strategic overview.

That insight will help provide industry and investors with the certainty and confidence they need to back major projects and share in their success. It will help ensure that Britain is best placed to compete in the future, and crucially, over the long term it will allow us to ensure that the people of this country are free to get on with their lives unencumbered by the chaos, costs and confusion that too often hold us back today.

We must never forget that infrastructure boils down to the stuff of everyday life - the school run, the heating bill, staying in touch with our friends and family. For families, businesses and the country little is more important. So we have to start getting it right.



Sadie Morgan heads a group of 45 experts that will look to support and inspire the HS2 design.

## A conversation with...

Sadie Morgan, dRMM founder, chair of the HS2 Design Panel and member of the National Infrastructure Commission

**S**adie Morgan finds herself at the cutting edge of infrastructure design and planning in the UK. She is chair of the unique High Speed 2 Independent Design Panel and now one of seven members of the influential National Infrastructure Commission under Andrew Adonis.

"My mission," she says, "is to ensure we don't just create efficient infrastructure; we create places that we truly deserve and love being in".

Morgan recently named her 45 strong panel of experts for a Design Panel that will embed creativity "in the DNA of the organisation" and be influential but not disruptive, she says. The goal is to help the HS2 organisation deliver its Design Vision for an "outstanding passenger experience" based upon: People - Design for everyone to benefit and enjoy; Place - Design for a sense of place; Time - Design to stand the test of time.

**"My mission is to ensure we don't just create efficient infrastructure; we create places that we truly deserve and love being in"**

Sadie Morgan

Morgan is well placed to lead this team. As a hands on designer she founded London-based dRMM with Alex de Rijke and Philip Marsh in 1995. This award winning and highly innovative practice has pioneered the use of timber construction with recent projects ranging from schools and art galleries, housing schemes, art galleries, and the Endless Stair timber art installation.

Other larger commissions have included contributing to designs for the London 2012 Olympics Athlete's Village, and more recently with Ian Simpson on the first phase of the £5.5bn Battersea Power Station redevelopment project.

Morgan, studied at the RCA and until earlier this year was president of the Architectural Association school in London, leading her to be described as one of the most influential women in construction and infrastructure.

"Big vision and great design are key to the UK's infrastructure future," she said as she joined the National Infrastructure Commission - one of seven commissioners with a bold vision to "take control of our future".

"My mission is to ensure we don't just create efficient infrastructure, we create places that we truly deserve and love being in."

*Continues p10*

**"The NIC will collect the evidence, listen to the arguments, and think dispassionately and independently. We will report on what the UK needs, providing authoritative and impartial advice on the country's priority requirements over the coming decades."**

Lord Adonis



Interview by Antony Oliver

The HS2 Design Panel will have a crucial role in supporting and challenging the project. How will you influence the whole design process?

Firstly it is not my design aspiration – about a year and a half ago the project asked about 100 people from different disciplines what good design looks like and from that process they published their Design Vision. This sets out the vision and has huge aspirations to ensure that good design covers everything – tickets to trains to the experience. So they have set a very high bar and asked me to chair a group to be their critical friend.

From what you’ve seen so far, does the project need help?

Every project needs help. In my own business we have design crits every Wednesday and it can be anyone that asks the simple questions. I have always said that the panel should be supportive and it should be inspirational. It shouldn’t just be there as a gate post review. I don’t want this to run as a normal design critique process because the design is going too quickly to make that happen. It has to be a fluid process.

Design on this project has been going on for years - how have you been received?

I haven’t had to push on any doors. People have been coming to me and to the panel and saying “will you come to talk to us and give us advice”. Of course when it steps into delivery after Royal Assent there could be times when I imagine things will get a bit hairy and the last thing anyone wants is unnecessary input. I’d like to think that our input will be small and often rather than big and infrequent.

Is this exercise about look and feel of the service or is it more focused around customer experience?

It is about the culture. It is not just about the physical object but very much about the experience

You have a 45 strong design panel. That sounds a lot. What will they do? It is a lot but if you look at the range of disciplines that you have to cover it is extraordinary. To be clear we are not going to sit with 45 people on a panel at one time – that would be impossible. So for a specific issue we will pick the



Sadie Morgan: “A bit of disruption is definitely good”

“HS2 is the biggest infrastructure project that this country has ever undertaken and so if we can’t end up with something that we are proud of then it would be very depressing.”

Sadie Morgan

expertise that we need. The whole point is having a different perspective on the questions that might be asked and there are also regional panels. Over time it will change - again it will be fluid - I am hoping for change. At the minute [the focus] is civils, then it is stations and then trains so as we move through to the next stages there are plenty of people that we would hope will be ready and willing.

You have stated that on HS2 “first we need to understand what ‘successful design looks like’. What have you concluded?

Good design for me is something that is intuitive – that fits into its place that people enjoy and that offers delight.

If I think about projects that I have enjoyed the most then a lot are personal milestones – Centaur Street was very different at the time; Sliding House was one of our smaller projects but had over a million hits on YouTube and saw German students making it out of Lego. It is those projects that show inventiveness and lateral thinking. It is also about interaction – we had the Endless Stair outside the Tate which was used by many people in different ways from the flash dance mob to people getting married on it. Then there is our housing in Battersea and Kings Cross which is all about the public realm and trying to maximise the space around the buildings to make sure that you had a sense of community.

So apart from scale, is this different from any other project brief?

It shouldn’t be. Whenever this country builds anything - small or big – it should aspire absolutely to do the best it can. HS2 is the biggest infrastructure project that this country has ever undertaken and so if we can’t end up with something that we are proud of then it would be very depressing.

You talk about creating “a clear brief now which can serve the needs of the future” - is that possible given the speed of this project’s development?

It is difficult so you have to have an element of flexibility. Projects like this are a cry to everyone. Everyone has to step up, not just the designers but also the people who are going to construct it. Everyone has to think a bit more collectively and a bit more cleverly about how to mitigate those potential risks. Good design should mean things going quicker. It shouldn’t mean things going slower.

Your career has included design, business management and procurement. Why is that important?

Throughout my career I have always looked at things in the round, starting from how you make your team happy because a happy team produces work that is good and full of joy. You do that by making their environment nice and by listening to them. You can put that into the wider context of a project – how do you collaborate and partner properly, how do you design processes that aren’t just about the straight line design but that have a more holistic look? If there is anything that I can

bring it’s the capacity to look at a lot of different things and see how they fit together.

You also said recently that you try to be “influential without being disruptive” - is there ever a role for disruption?

A bit of disruption is definitely good. When everyone is patting themselves on the back that is when you absolutely have to poke them where it hurts and make sure that they continually think about how to make things better and about the wider issues. It is more about not just defaulting to the status quo. Status quo is fine but it is never going to deliver something that is extraordinary.

You were the fourth woman President of the Architectural Association and one of the most influential women in the profession. How can you help boost the number of women in infrastructure?

I’d hope leading by example is one of the things that any woman can do when they are in a position of some sort of authority. There is a wave of girls coming through so we have to get the working environment right so that whatever their life choices are they can continue in their career. I am who I am and I would hope that the young girls and the young boys in the office would look at me and think “if she can do it anyone can”. But there is still big work to be done in schools in educating young women that this is a career that is interesting and that they are completely capable of doing.

How do you describe your style?

I am just myself and I deal with issues on my own terms. I like to think that [I lead] by listening to people and saying I’m interested in what they have to say. Every Tuesday I speak to everybody in the office and have a little chat. It might be personal or about what they are doing [at work] and that is my style – hands on but in a connected and personal way.

Were you surprised to be invited to join the National Infrastructure Commission?

I was pleasantly surprised. If you look at the wealth of talent around me on the panel one always wonders why you are there. But then you start to contribute and people listen to you and ask questions. I’m very good at asking the questions that no one else dares ask and I have huge confidence in my ability



Sadie Morgan: “I am just myself and I deal with issues on my own terms.”

to make sure that my questions are part of the conversation and that every now and again everybody does look up and say “oh yes that’s an interesting way of looking at this”.

How does design excellence accelerate delivery?

Excellence helps in many ways. People in government are now starting to realise that design matters. There are so many large scale infrastructure projects around the world that are on time, on budget, that look amazing and that work seamlessly. That is showing that well designed projects make a massive difference.

What makes you say government appreciates that?

What is becoming obvious around the world is the influence that great designers are having on projects that are seen as great successes. Those people in power are now beginning to realise that they didn’t materialise from thin air. They had a group of very talented people. I also passionately believe that good design does save money – and that is the crucial turning point in the minds of the public and the decision makers. Getting off the mind-set that bringing in a good designer will double the cost. It won’t, it will halve the cost.

The Commission had its first meeting recently - what happened? There are three things that the

Commission is looking at first – the trans-Pennine link; energy and how we can make sure the lights don’t go off; and transportation in London and Crossrail 2. We spent our first commission looking and listening. In particular I am looking at how transportation may help to solve the London housing crisis which is a big passion of mine. It is a gathering of intelligence so that we can make good recommendations.

The Commission is such a diverse bunch of people - why is that good?

A great conversation is made up from people who bring different views and different ideas to the table. [The Commission] it is a fantastic mix and when you hear the conversations that go around you realise that everybody is there for a very good reason.

The future must see greater focus on infrastructure service for customers and on function. How will the Commission help that to happen?

What excites me is having the knowledge and the foresight to not make big mistakes [as in the past]. We have to combine that with a vision and a belief in ourselves as a group of creative people that we can do it. We have to make sure that this industry starts re-believing in itself collectively. We send our designers and architects all around the world to deliver everybody else’s amazing infrastructure projects. We have the talent - do we have the belief?

From what you have seen from HS2 and NIC what are the missing skills that clients and the supply chain will need?

The Commission is trying to collectively think about what we need in 30 years not what this government needs now. If someone has a good idea how can they share it? The first thing about getting to an answer is asking the right questions. Good design can turn this great [HS2] project into something that is world beating. If everybody starts to believe in that then there is a fighting chance.

Sadie Morgan was interviewed by Infrastructure Intelligence in the Straight Talk series, filmed by ACOonAir and supported by AECOM. The video is available at [www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)





Tender visualisation for a proposed onshore windfarm scheme in Scotland: Highly valuable material for developers.

Prospects for expansion of onshore windpower still look good in Scotland, without Government subsidies, but with a viable future owing to developing technology, the sector's maturity and industry's expertise. This is the view from Tony Gee & Partners, reports *Jon Masters*.

Government in Westminster confirmed in October this year that indeed, as industry was expecting, subsidies for onshore wind will effectively come to an end from April 2016. The closing of the Renewables Obligation does not necessarily mean it's all doom and gloom for onshore wind power, however; not in Scotland anyway.

Consultant Tony Gee & Partners is still upbeat about market prospects, partly as a reflection of views coming from some of the firm's clients. So says Tony Gee infrastructure director Alasdair Fowler.

"Absolutely there is still a market. The Scottish Government remains very pro-renewable energy and we're still hearing from our clients, from one major developer in particular, that they're still feeling bullish about prospects," Fowler says.

Scotland has set an ambitious target of generating the equivalent of 100% of the country's power demand from renewable sources by 2020. Projections published by Scottish Renewables in November this year show that Scotland

will fall short of the target at its current rate of development, but not by much.

Energy from renewable sources is on course to reach 87% of equivalent demand by 2020 with a forecast installed capacity of 11.9GW. In June 2015 available capacity from renewables stood at 7.4GW, of which 5.2GW can be generated by onshore windfarms. According to Scottish Renewables, another 1.5GW will come on stream from projects under construction. Schemes that have secured planning permission and await construction will provide a further 990MW.

"Scotland had reached 44.5% of its power generation from renewables by the end of 2013, so by the end of this year it should be just about hitting its 2015 target of 50%," Fowler says. "The country already had a base load of hydro power generation, but this achievement of getting to 50% renewables, or close to it, has been reached mostly by encouraging development of onshore windfarms."

The changes to subsidy arrangements are likely to make further new projects difficult for smaller developers,

Fowler says. "But we expect the larger promoters, who can provide the necessary capital funding, will still be able to develop more sites because the business cases should still stack up. It's generally easier to make onshore schemes work in Scotland than it is in other parts of the UK."

There is another reason for Tony Gee's positive outlook for the onshore wind sector; that is the challenge of operating and repowering the first and second generation of existing windfarms.

"Even if we stop building new sites over the next five years or so, there will still be a significant market in upgrades to increase power output and efficiency. Windpower technology is still developing," says Fowler.

Energy companies have strong incentive to re-engineer their first generation windfarms, Fowler adds. One such site has had a further 19 wind turbine generators (WTG) built to add to an existing array of 45 WTGs. The additional 19 WTGs provided more power than the initial 45 strong development, which was just 10 years

old when it was extended.

"Smaller schemes are now possible with far more powerful machines and better controls that get more power at lower wind speeds and can maintain electricity generation in higher winds. So overall the latest WTG models have a greater operating range and a bigger power yield," says Tony Gee's technical manager Peter McDonald.

There is a lot of work involved in upgrade projects; practically as much in terms of engineering as development of a new scheme. Furthermore, Tony Gee is looking at a significant amount of work for industry to do in renewing and re-engineering the transmission supply network. "This is another big opportunity for us," says Fowler.

"The majority of power supply for the north of Scotland used to come either locally from hydro power or the country's central belt. But now the direction of supply is being reversed and much of the power generated in the north is going south. This has created the requirement to re-engineer the transmission network."

This work to come will present another interesting phase in the evolution of onshore windpower in Scotland specifically and the UK in general. Clients have come to realise the importance of getting the engineering right at the front end of project developments.

"A trend we have seen in recent years, is that the larger developers now recognise that while the civil engineering is a relatively small part of overall scheme cost, the civils design is a vital part of risk to delivery," McDonald says.

As a civil, structural and geotechnical engineering practice, Tony Gee & Partners is commonly involved in all aspects of windpower projects, from early scheme development, through to planning, detailed design and construction supervision.

"Schemes require modelling and design of supporting infrastructure including transport route assessments, access roads, local road improvements, WTG foundations and substation buildings. We're often providing all of this," says Fowler.

"During planning, developers are now keen to see the civils design considered early on to take the risk of delays to the construction programme due to amendments to planning out of the equation," McDonald says.

"Proper visual design representation is now common, as is high quality



**"Even if we stop building new sites over the next five years or so, there will still be a significant market in upgrades to increase power output and efficiency. Windpower technology is still developing"**

Alasdair Fowler

detailed ground investigation. Clients now recognise the importance of SI and that prices from contractors are not fixed if they don't have knowledge of ground risks."

Specifically with regard to WTG bases, clients have come to realise that design efficiency is not good value at the expense of successful operation. A number of developers now commission directly for the design of WTG bases. Technical knowledge has grown as the sector has matured.

"The sector has been through a painful learning curve in terms of WTG foundation design. There have been some cases historically where bases have been designed insufficiently for the high fatigue forces of larger WTG models," McDonald says.

"There are many things to look at during early scheme development, such as siting and wind yield and supporting infrastructure. Crucially, however, the business cases demand developments are connected to the grid as soon as possible more than they need construction cost savings, so

value engineering has been replaced by certainty of delivery."

Scaling up of WTGs, from circa 1MW turbines to the 3MW machines now commonly built, has brought a more than three times magnitude increase in moment forces on base structures. Design codes are different for the task and the industry has recognised the change of requirements with a more rigorous approach, Fowler says.

"Most clients are now very strict on this. The design methodology has become more rigorous and holding down systems are more robust. We take a cautious approach to ensure long term operational success, and we consider close site supervision is essential to ensure construction is of the highest standard. We work with our clients to ensure they understand the importance of this."

Efficiencies in WTG foundations are still there to be made, says McDonald. Bases are being designed to maximise the efficient use of materials while ensuring the required robustness of the structure is maintained. The bases are not necessarily three times larger in line with the magnitude of load increase of the bigger WTGs.

"We're looking for construction efficiencies in the construction of the WTG foundations. Innovation comes from how we detail structures to make construction as rapid and straightforward as possible. This is what we're trying to bring to the market all the time. Half a day saved on each base makes a lot of difference to the overall construction programme," McDonald says.

Opportunities for efficiencies on foundation design are also coming from use of partially precast solutions. And rock anchors instead of simple gravity solutions are becoming economically viable with the new generation of turbines of 4MW and more.

Furthermore, a growing focus on high resolution imagery of what windfarms will look like is starting schemes off on the right foot and significantly speeding up processes that would otherwise rely on designs printed on paper.

"This is a significant change in the market, making a big difference to projects at planning stages," Fowler says. "Having a 3D model of windfarm designs on a topographical image is helping to reduce visual impact and showing people what the windfarm will really look like when built. This is highly valuable material for developers."



# Stepping up to meet the infrastructure apprenticeship challenge

The government has set out its stated ambition to create 3 million new apprenticeships by the end of the current parliament. Crossrail chairman *Terry Morgan* is tasked with driving a new strategy to boost apprenticeship levels across the UK's transportation sector.

**T**he UK government is unequivocal – the UK economy is being held back by poor levels of productivity compared to large parts of our global competitors largely due to the historic underinvestment in skills and training across all sectors.

Not least in the infrastructure sector, few can ignore the increasing pressure on resources and the challenge of meeting a growing pipeline of economy driving investment in new assets and the renewal of existing networks across transport, energy, water and communications.

A key element of the solution, says the government, is greater focus on and investment in vocational training across the whole of the UK's workforce.

The ambition to drive culture change into industry through the creation of 3M apprenticeship posts by 2020 was reinforced by Prime Minister David Cameron at the CBI conference last month. And as confirmed by George Osborne in his recent Spending Review, it is underpinned by a 0.5% levy on business payrolls over £3M.

Crossrail chairman Terry Morgan, having already overseen the delivery of over 500 new apprenticeships on the Crossrail project, is at the heart of delivering this ambition across the UK transportation infrastructure sector.

Having already launched the Tunnelling & Underground Construction Academy (TUCA) in Ilford, the National Rail Academy in Northampton and now as chair of both the High Speed Rail National College and Manufacturing Technology Centre in Coventry, he is aware of both the challenges and the opportunities.

Morgan's first task is to set out a new transport and infrastructure skills strategy to establish how the sector should:



**Terry Morgan has the task of setting out a strategy to meet some tough targets.**

- deliver on its ambition for 30,000 apprenticeships in roads and rail over the 5 years to 2020, working together with supply chain partners
- ensure the right mix of apprenticeships are on offer, including many at higher levels with training in new technologies
- explore upskilling the existing workforce to meet new challenges
- encourage greater diversity in the workforce, including attracting more women into engineering
- develop a co-ordinated national network of transport infrastructure skills colleges to train the transport workers of the future

Key to Morgan's plan is the creation of the new National College for High Speed Rail to springboard off the massive HS2 project and create up to 2000 new skilled apprentices from two new sites in Birmingham and Doncaster each year. Former First Group director John Evans was appointed chief executive last month.

And having seen the apprenticeship levy set out in the latest spending review alongside plans and funding to underpin both the HS2 project and the Northern Powerhouse programme, Morgan is ready to press ahead.

## Interview by Antony Oliver

**The Government's ambition around apprenticeships is clearly welcome. But is it realistic?**

In the lifetime of this administration the government wants to create 3M apprenticeships. I think that is equivalent to every school leaver between now and 2020 becoming an apprentice and clearly that isn't going to happen. So [to meet this target] we have to redefine what this meant by an apprenticeship. I can see an individual, for example, having more than one apprenticeship to reflect advancement through different stages of their career.

**What is realistically achievable in transportation by 2020?**

Certainly the strategy is to create a mechanism to deliver 30,000 apprentices in the lifetime of this government. What that means to me is a three-fold increase inside the transportation sector.

**Having seen how hard it has been to create 480 apprentices on Crossrail, how do you get to 30,000?**

On HS2 they have a much bigger ambition – as does Network Rail, Highways England and TfL. Then, of course, there are the marine and aviation sectors. If government is serious about its 3M apprentices, and infrastructure is seen as a vehicle for

investment going forwards, then we have to step up.

**Where are the quick wins?**

By 2017/18 we can put in place two brand new colleges capable of turning out 1000 apprentices each year. The support is there. But we must also use procurement and providing clients build [skills development] into prequalification then there is no question it is a fair requirement under EU legislation and so there is nothing to stop the private sector also putting these obligations in place.

**The skills levy was confirmed by the Chancellor in the recent Spending Review – will that help your strategy?**

The apprenticeship levy clearly shows the government is looking at both ends of the equation – they want apprentices but they have to find a way to pay for it. And in truth I don't yet know all the answers – the question is still how will the levy be administered? The language that I hear is that it is going to be based on vouchers and employer led. Part of the debate is whether you should base the levy on headcount or the value of contracts. I am sceptical of a headcount based levy because it penalises companies who would pay as they earn as opposed to companies who don't directly employ people themselves.

**The new National College for High Speed Rail is central to delivering the required increase in skills – are you on track?**

It has been delayed as we should have been given the green light three months ago. But we have now taken on a new chief executive and [following the recent spending review] it is now firmly part of the story about changing the profile of government spending away from overhead to value added spend on infrastructure. We have concept designs for two colleges – in Birmingham and Doncaster. When open in 2017 they will have the capability of turning out 1000 students a year.

**How will this National College operate?**

My ambition is to have two centres of excellence – Birmingham predominantly working around digital technology and Doncaster around heavy engineering – with a hub and spoke model to drive skills between the two locations. But of course if there is already a regional centre of excellence why would we want to replicate it? Take Northampton,

which has its National Academy for Rail or TUCA in East London, why would we want to replicate what they are doing? But you can move the core curriculum. Also we're not planning to do entry point apprenticeships and will still look to further education colleges to do that work, allowing employers to then step in at level 4 and upwards.

**Will your strategy be limited to just road and rail?**

When you talk about transportation you have to work out what is going on around skills strategies. This for me is much more around a national network of transportation specialists. So in theory I have the four sectors – road, rail, marine and aviation – to report on.

**What have you learnt from Crossrail about building an apprenticeship network?**

Primarily that it will never happen naturally. It is a very brave project manager that will yellow card a contractor who is on time and hitting cost profile just because they haven't hit their apprenticeship numbers. So we set up a contractual obligation. Second we built an academy to help drive those skills. Third we held the supply chain to account to demonstrate they are meeting their obligations.

**Has it made a difference on the project?**

I think it definitely has. Could we do better? Certainly. One in five of apprentice programmes nationally employs someone defined as a NEET (Not in Education, Employment or Training). On Crossrail it is two in five. That is because we have a skills academy in quite a deprived area but we have also had to work hard at it. Our supply chain has done a great job finding people. We are doing a lot through Young Crossrail [schools outreach programme] because you are only going to get more apprentices if you increase the number of potential candidates and that means getting to youngsters while they are still at school.

**There is already huge focus on boosting the numbers of young people entering the infrastructure sector. What will make your strategy different?**

Correct, there are just too many initiatives and it is one of the things we are looking at. We have to coordinate them much better. The challenge is that everyone thinks that their

particular programme is very precious and, of course, it is so important that programmes are championed by individuals. But the question is how do we get that enthusiasm that is currently seen around relatively small programmes to build around something bigger.

**How do you do that?**

We have three months to do the strategy. We have to get to the big organisations, such as Engineering UK and the engineering institutions to build on the work already underway. We must ask what more can we do to ensure that we are not replicating things that are better done by one organisation. There has to be a better joined up approach. That said, when people say that they are already doing it, I generally don't believe them. Nothing will change my mind that we would not have had more than 500 apprentices on Crossrail if we hadn't made it one of the legacy stories of the project.

**How will HS2 help build on the Crossrail legacy?**

Certainly HS2 will give us a world class railway but it needs to be more than that. Through the work that we have done on Crossrail we now have people with skillsets that were not considered possible five or six years ago. We now have a group of ex-apprentices earning good money as a consequence of the programme.

**When you look at other countries and other sectors, who is tackling the apprentice issue best right now?**

Nobody has got it perfectly sorted but if you ask who is doing the best, you have only got to go to Germany and some other European countries to see this really happening and see where they have got the correct combination of public private engagement. Across the sectors I think that the aeronautical and automotive industries are good – I would struggle beyond that. At Crossrail we took what was done at ODA and asked if they did it again what would they do differently?

**What does success look like to you?**

An agreement for upskilling the UK workforce to meet the challenges of infrastructure, and a commitment from the supply chain to actually do something different. That means we have to put in the physical assets to enable those who want to be trained to be able to be trained in the right way. Which is why the centres of excellence that are coming are very exciting.



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# Mobilising the aviation sector for success

Is there place for an Airport Development Group to champion and drive the sector forward? The industry believes there is. *Antony Oliver* reports.

**R**egardless of the on-going post Davies Commission Heathrow vs Gatwick debate, the long term challenge facing the sector is to ensure that its supply chain is in shape and prepared to meet the predicted uplift in workload across the UK airport network.

As a recent Infrastructure Intelligence round table discussion on airport development heard, that will mean the sector raising its game to design and construct new world beating infrastructure as it helps the UK to succeed in an increasingly competitive global aviation market.

Deep collaboration will be essential with the key to success clearly resting on engaging the entire supply chain of clients, contractors and consultants down the tiers and industry representative groups.

“This is an opportunity for the airports development sector as we have a large volume of work in our sights,” said Heathrow executive procurement director Ian Ballentine. “The key is to be able to corral that opportunity through conversations with the supply chain.”

However, given the massive investment now seen across all sectors of infrastructure, Ballentine warned that if the aviation sector failed to pull itself together with a unified supply chain, other better prepared sectors could steal a march to drive and focus limited supply chain resources away from airport development, leading to cost increases, delivery delays and a loss of confidence in the sector.

“We need some sort of airport development representative body of our supply chain,” asserted Ballentine.

“First to lobby government with some weight to represent the aviation supply chain and ensure that it is not pushed down compared to other sectors,” he added. “But the other side is to help influence clients and drive better procurement, design and delivery.

The proposal, loosely titled an “Airport Development Group”, Ballentine suggested, would stand above short term political decisions and act to



meet needs of the sector.

“Irrespective of the Davies decision we need a body that can represent the supply chain as a whole and lobby as a collective group,” he said. “It would get the clients listening but also put weight behind the supply chain - not just for client organisations but also with government.”

An Airport Development Group could provide representation for the sector and create a single voice, able to lobby government but also airport operators over issues such as the need for workbank visibility, safety and measures to boost investment in resources for the future of aviation related infrastructure.

Ballentine drew comparison to the rail sector which used the resources of the Rail Industry Association (RIA) to represent and challenge the supply chain and provide a political weight to really influence both government and client thinking / policy.

Gatwick director Piers Warburton agreed that establishing an overarching industry body would be a very effective way to overcome “some very significant bumps in the road ahead” as he put it, as the sector wrestles with the differing commercial and political pressures facing large global, medium sized international airports and small regional facilities.

“The carriers are currently disproportionately important in the UK aviation debate, especially in London,” said Warburton pointing out that the industry really had to collectively raise its gaze beyond the short term domestic arguments over airport planning towards the global opportunity.

“If it were possible for the aviation development community to better organise itself I think that would be a significant benefit,” he said. “The whole binary Davies choice is something of a distraction here and should not really interfere with the larger discussion. We have carriers, particularly the Middle East, with very ambitious plans for their airlines and for their airports. They are a formidable influence on global aviation and London aviation in particular.”

Designers and contractors around the table agreed that while they were ready and willing to take on the expected UK airport development workload, the global nature of the market meant that any sector representative body would have to look outwards from the UK to find examples of best practice.

Arup director Dervilla Mitchell said that while the UK industry had evolved in terms of its appreciation of global client needs, it still had a way to go.

“We are having a very local debate about Gatwick and Heathrow but I agree that we should lift our eyes and look beyond our boundaries to the development of the Middle Eastern carriers,” she said. “They are going to be a huge challenge to our airlines and to our market here and we need to be thinking collectively about how to respond to that.”

Mitchell accepted that while the sector had moved on from just talking in engineering disciplines to become companies who really understood the operations of airports, a new representative body would help to drive home this new need and help look beyond the UK to appreciate and respond to trends and help the industry to work more closely together.

“It is a language that we have had

to learn but I think that we are better placed now to address the challenges that our clients may put in front us,” she said. “We need to continue to evolve.”

Mott MacDonald aviation director Paul Fairbairn also felt the industry was ready to respond not least as “around the world we punch above our weight”. But he felt that a UK Airport Development Group could help to galvanise the UK market behind the global challenge.

“We are on a journey together and I hope that we are already making huge leaps forward,” he said. “There is a revolution going on in terms of technology and airports will look different in the future. We see immense innovation going on but there is still great untapped opportunity.”

For Heathrow development director Phil Wilbraham this need to innovate was the critical factor in how a new representative body could really help the airport development community better organise itself to prepare for the inevitable growth in workload.

Specifically, Wilbraham’s question was how the sector could work together over the next few decades to boost productivity and drive efficiency as it tackles the boom in workload driven by the UK’s need to meet its runway capacity shortfall.

“The risk is that we will continue to do the same old things and that we are not challenging each other enough to improve,” he said.

“We have a supply chain at Heathrow that has been quite consistent over a long period of time but we are now going to a stage where that workload is going to grow quite fast and by quite a lot so we are going to need to perform on a different scale to the past,” he explained. “If we are not careful we will try to deliver that workload with the same old tricks that we have used over the last 10 or 15 years. If we do that we will come up with the same answers. But I think that we can do a lot better.”

The goal, explained Wilbraham, was to get the right people into the discussion – the tier 2s and tier 3s – to drive innovation and produce infrastructure that would serve customers and passengers better and cost less to operate and maintain.

Contractors around the table welcomed any initiative that brought them into the airport development conversation earlier.

“It is vital that we understand clients’ needs and challenges and we are very keen to be engaged in discussions at the appropriate time,” said Balfour



Beatty’s Andrew Nash. “I suspect that contractors will be keen and ready to be involved with any new sector group.”

However, it was the ability of an Airports Development Group to champion a longer term view that was the critical factor for Foster and Partners partner Huw Thomas.

“But there is also potential to ask where do we want to be in 30 years or beyond – which the Davies Commission hasn’t been able to do – and to map out from global experience what might be happening and get ourselves a bit more prepared,” he said.

“I also suspect that there are opportunities around interfaces particularly with regional airports and to help work out how government transport policy fits into the wider policy picture,” he said. “Maybe with a stronger voice industry could interface with some of the critical decisions that would allow capacity to increase. We could lead that conversation and take leadership on multi-modal connectivity which many smaller airports would struggle with alone.”

Creating a sector body to help set the long term development strategy and policy was seen as crucial, particularly now that the UK National Infrastructure Commission was up and running and pressing forward with work to establish the National Needs/Infrastructure Assessment.

“It is crucial that this sector has a strong input into that,” said Pinsent Masons partner Robbie Owen, who worked with Sir John Armitt on his original plans for the Commission.

“However, when we get a decision [from government on airport expansion]

the real job for an industry voice is to plug into DfT and other government policy,” he added. “All sorts of other policy announcements will start to flow and I think that there is a role for an industry group to make a strong combined representation on how that policy should develop.”

ACE chief executive Nelson Ogunshakin pointed out that any new body would most likely be best launched out of existing organisations.

“What matters most is leadership, consistency of message and true representation,” he said. “There are already a number of organisation out there but as we move from debate over the Davies report to operation and execution there is a gap to create a platform to engage and to allow a single point of contact – there is nothing as bad as too many voices.”

## The way forward

“Any new group has got to have clarity around what it has to achieve and it must be focused. Does it create benefit for the client organisations as a whole? Does it create benefit for the supply chain organisations across the split of first and second tier suppliers? Does it create benefit for Britain as a whole? We need to decide what is the mechanism or model that we think would enable it to best operate, how would it work and how could it be funded; what are the first campaign areas to target and what is the model to make it work?”

*Ian Ballentine, Heathrow*

## Around the table:

- Jas Basi, CBI
- Ian Ballentine, Heathrow Airport
- Julian Francis, ACE
- Paul Fairbairn, Mott MacDonald
- Paul Jackson, NG Bailey
- Dervilla Mitchell, Arup
- Richard Matthews, Arup
- Duncan McIndoe, Turner & Townsend
- Andrew Nash, Balfour Beatty
- Nelson Ogunshakin, ACE
- Antony Oliver, Infrastructure Intelligence
- Robbie Owen, Pinsent Mason
- Geoff Smith, EY
- John Turzynski, Arup
- Adam Tuke, CECA
- Huw Thomas, Foster and Partners
- Piers Warburton, Gatwick Airport
- Phil Wilbraham, Heathrow Airport



# Final advice from the final advisor

After three years as the government’s chief construction advisor – a role now scrapped by the “hands off” Tory administration - *Peter Hansford* bowed out at the end of November. *Antony Oliver* talks to him about the role and future challenges facing the industry.



Peter Hansford was the second and final chief construction advisor.

Peter Hansford succeeded Paul Morrell as the government’s second chief construction advisor in December 2012. His two year appointment was extended by then construction minister Michael Fallon for a third year primarily to ensure that there was a sensible handover period following the May 2015 general election.

And while Hansford had always been clear that he would step down after three years, the new Tory administration announced in July this year that it was streamlining the Construction Leadership Council as the main point of contact with government. The axe fell on the chief construction advisor role after Hansford’s tenure ended in November.

So having delivered the Construction 2025 industrial strategy, led the industry towards the 2016 BIM level 2 mandate and helped the industry to champion a lower carbon, lower cost future, Hansford is clear that the role has helped evolve the industry-government relationship. And he is also clear that this relationship can never stay the same.

## Interview by Antony Oliver

**How do you describe the industry successes over the last three years?**  
I think the industry is now coming together around a common agenda. Most leading people in the industry know that the agenda is all about people and productivity, about technology and unlocking innovation and it is about cutting out process waste.

**Why has the chief construction advisor role been a success?**  
Pre Paul Morrell [the first chief construction advisor] government didn’t know who to talk to in industry and industry didn’t know who to talk to in government. I think that has changed. Paul did a brilliant job and over the last three years we have really strengthened those channels. The CLC is now a really important forum where government and industry will come together – it will be different but the engagement will continue.

**So is the loss of the Chief Construction Advisor role a backward step for the industry?**  
No. I think it is a change. Coalition government was all about creating partnership with industry and creating

a new industrial strategy for Britain using industry sectors to fuel growth - Construction 2025 was our strategy and it something I’m very proud of. This government is different. It is much more hands off and wants industry to step up and take the lead. It is there to enable but not to lead. In this new world of hands off government and with a restructured CLC the logic goes that you don’t need a chief construction adviser. How sound that logic is is a matter of opinion. But it signals a change.

**What have been your highlights?**  
Creating the Construction 2025. I came to the role at a time when business secretary Vince Cable wanted to engage the industry and he threw that task at me. Working with such a great group of people from across the industry to develop and launch Construction 2025 was a fantastic experience.

**What have been your biggest challenges?**  
You don’t get from A to B in a straight line in government. Sometimes it’s a bit like running in treacle and for an outsider that can be a challenge.

**Has the role really ever been a key single point of contact between our sector, ministers, and officials?**  
No, Paul described the role as helping to improve the conversation between government and industry and helping each to understand where the other is coming from. It is not a single point of engagement nor should it be and this role is not a government spokesman nor is a lobbyist – it is the glue. You can argue that in this new world you might still need that glue.

**Could it have had more teeth?**  
I don’t think it was ever intended that this was a role to make things happen. Certainly not in a leadership way but perhaps it could facilitate conversations but I think it would have been a mistake to expect the role to make things happen.

**Yet Paul Morrell did manage to introduce a successful mandate for the use of BIM.**  
I agree – and I am amazed that it happened. But it has made a huge difference so I am delighted. But [with more mandates] we would have been weaker for it because we would have been an industry that only did things when government told it to. That is not very healthy – what other industry does that?



**Construction 2025 - strategy for the construction sector and a piece of works that Hansford is “very proud of” delivering for Government.**

“In this new world of hands off government and with a restructured CLC the logic goes that you don’t need a chief construction adviser.”

Peter Hansford

**Will the Construction 2025 targets ever be achieved?**  
When we created the 2025 ambitions we wanted them to be bold and some people said we hadn’t gone far enough. The truth is government thought we had gone too far. They were jointly decided upon and in the last two years I haven’t heard anyone say they were wrong. Of course some people missed the point – cutting 33% off the cost, for example, is not about cutting margins. I want the industry to be more profitable – this is about doing things differently and cutting out process waste.

**What can be done to really engage clients with whole life value?**  
Some clients are there – Anglian Water and Heathrow for example. But government is not there yet, although it is being actively discussed in Government and the new construction strategy majors on whole life costing. It all comes back to the client – an enlightened client who can see the benefits. [In the public sector] we have capital budgets and operational budgets and it is very difficult in the public sector at the moment to transfer funds from one to the other. But we all know that a little bit more invested from the capital budget can make massive savings in the operating budget. But it needs strong clienting and the rules to allow it.

**Are you seeing the industry breaking out of its inherent conservative approach?**  
Yes but slowly. I think we need a shakeup of the industry with new entrants. They could be Chinese, French or British but they will be businesses that look at our industry and say “you do what?”. There is great strength in having companies that are 150 years old but we also need new thinking.

**How does construction compare to other UK industrial sectors?**  
Aerospace is the exemplar industry alongside automotive. But you have to remember that construction is a much bigger player and aerospace and automotive have a small number of big players so these are different industries. But take automotive, they changed because they had a burning bridge as the Japanese came into the sector. Construction never seemed to have that burning bridge – it adapts and morphs. But we need a burning bridge that gets construction to sit up and change. We need a disruptive technology.

**Can the National Infrastructure Commission help?**  
I was surprised and delighted when George Osborne announced that he was appointing Lord Adonis – it was an inspired choice. They have now got an interesting Commission that cuts across party politics and will hopefully be a body that government listens to. It is about joining up decisions – in the past many of the decisions have been taken separately. It all works as a system.





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# Time to act on plans for 2016 and celebrate 2015

The New Year has come. Time to put in place plans for 2016 and reflect upon triumphs of the past 12 months, writes *Nelson Ogunshakin*.

**H**ere at the ACE group offices, and across our membership, we have many accomplishments to celebrate from 2015.

Every year I have the opportunity to host industry CEOs from across Europe at the European CEO Conference. Reflecting upon the discussions we had at the November event, many had similar concerns regarding mergers and acquisition, late payments, international collaborations, skills development, retention gap, as well as diversity and inclusion. I am sure these topics will continue into 2016. Therefore, ACE must continue to foster a spectrum of event and debate opportunities for all size businesses to ensure upcoming challenges are addressed with effectiveness, gained through the sharing of knowledge and best practice.

Across the board, our industry has seen significant government commitments, including the establishment of the National Infrastructure Commission (NIC), further developing the infrastructure pipeline as well as UK skills development. ACE is confident that government momentum shall continue into 2016, and hopes that NIC will take on board expertise seen in bodies such as NIPSEF, to move projects forward as efficiently as possible.

The increased number of projects has inspired further government involvement in UK skills development; such as the Apprenticeship Levy and availability of apprenticeship positions and specialised colleges.

ACE will continue to be actively engaged in the devolution process, ensuring that members have a voice at all government levels throughout the United Kingdom, for 2016 and beyond.

The Technician Apprenticeship Consortium (TAC), supported by ACE, has shown the importance of industry collaborations for the development of apprentice skills standards, having served 1000 apprentices within its five years of existence. In 2015 TAC programmes and apprentices won or were nominated for numerous awards, showing further proof of successful skill



**“The business case for a diverse and inclusive workforce has never been higher. In January 2016 ACE will provide the industry with tangible and realistic recommendations for incorporation into business strategies.**

**ACE chief executive Dr Nelson Ogunshakin, OBE**

development to meet industry needs, and create opportunity for the industry to attract diverse candidates.

Continuing to look towards incoming and new talent to our industry, ACE engagement efforts for young professionals in the field have increased through the continued expansion of Progress Network, providing a supportive network that encourages industry wide retention of talent.

Recognising these initiatives as crucial to business performance, ACE's National Conference on 15th March 2016 will focus on the key theme of

**‘Building Teams: Boosting Productivity’.**

Given the nature of international projects undertaken by members, ACE is delighted that 2015 saw the launch of Progress Network Middle East. This complements and builds upon existing ACE efforts abroad, such as the Middle East Group and the International Business Group, which ensures that even when working on projects abroad members are able to access the discussion forums and strategic insights from the wider ACE group.

Closer to home, ACE has been actively involved within the Royal Academy of Engineering, Diversity Leadership Group in the production of the first ever benchmarking tool specifically geared towards the engineering sector. Particularly with the current skills and retention challenges, the business case for a diverse and inclusive workforce has never been higher. In January 2016 ACE will provide the industry with tangible and realistic recommendations for incorporation into business strategies. This is a key solution for businesses large and small to address challenges ahead. ACE encourages all industry leaders to engage in industry wide improvement, through the report and resource hub launched in January.

2015 has also, regrettably, seen the rise in concerns pertaining to security. With the tragedy in Paris still raw for many of us, security of one's workforce at home or abroad as well as general site security must now be considered.

Though physical security currently dominates minds in preparations for 2016, the industry must also look towards other cyber security, particularly with the continued use of internet based company resources, cloud technology and the use of BIM.

ACE has high hopes for 2016, and we are confident that our industry will continue to rise to the challenges before it. ACE will continue to serve the industry through specialised research, collaborative working groups, financial and insurance advice, contract and legal services, high level representation and lobbying, as well as numerous events with networking.





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# ACE – the value of membership

Being at the heart of industry is fundamental to the association says outgoing chairman *John Turzynski*

**M**y year as ACE Chair is coming to a close, so it is the right time to reflect on the important issues facing our organisation. My thoughts are based on our meetings and conferences, and discussions with members and regional teams throughout the year.

ACE has over 100 years of experience and knowledge of what makes engineering and consultancy work for the UK and beyond. As a representative body for our members we reach out to all levels of government, our collaborators, our clients and our customers. And I have certainly been witness to that over my term of office.

In a world where work is based on relationships, our role continues to be to help you, our members, maintain and create those relationships.

You may rightfully ask how ACE does this.

ACE works at a number of levels to gather knowledge of the future market and the pipeline of work to help our members position themselves to win good work. Additionally we hear from clients, both public and private, on their needs and what they seek from consultants so that we may respond appropriately.

ACE provides direct access to knowledgeable resources on business matters including legal, human resources, the business environment and legislative changes. By keeping abreast of the latest legislation, and up-to-date practise, we are able to advise our members on the range of issues affecting business, employment and compliance. This is no easy task given the pace of change, but it remains a core part of the association's day-to-day activities.

ACE provides a focal point for discussions with other bodies where there are issues that affect our members.

For instance the procurement of our services has become more complex, time-consuming and costly. ACE has collected information and published a report on the current landscape. This will be followed up with discussions with a range of organisations involved in procurement. It has become more evident that the costs are effectively disengaging some members from opportunities, which limits the market,



**“ACE needs to continue to address the needs of both the small and medium sized consultants, and the larger consultants. Our broad range of activities will provide all members with value, both tangible and intangible.”**

**John Turzynski**

the potential for widening the supplier base, the means to seek innovative organisations, and, ultimately, the route to growth.

Another area is the increasing levels of limits of liability and PII required, particularly in the public sector. These increases are adding cost, disenfranchising many firms for no benefit to clients or users. ACE is campaigning to remove these hurdles to running businesses, and the combined voice of ACE can prove to be a stronger way of influencing the recent change in attitudes.

ACE also represents members in cooperation with other organisations in the industry in front of government bodies. By combining our weight with organisations such as the ICE, CECA, RIBA, CPA etc. we collectively represent the majority of people designing and constructing the UK's future. Through

these alliances we have shown that we can influence government at all levels through NIPSEF and other bodies. This remains a prime focus for ACE in the future.

ACE-organised conferences are hugely successful and the list of presenters, panel members and attendees has grown from strength to strength. The subject matter is designed to suit members depending on the nature of the conference, whether national, international or for European CEO's. They certainly pick up on issues that look forward and that will affect all of our businesses in the coming years. The conferences also provide platforms to make our collective voice heard. And, not insignificantly, they also inform the direction of ACE activities with respect to member's needs.

ACE has pursued a strategy of broadening our business model, and has successfully launched *Infrastructure Intelligence* over the last two years. This has undoubtedly made a big impact on the world of infrastructure in terms of the technology of communication, which has increased awareness at all levels of all organisations involved in infrastructure. The ACE looks forward to continuing to develop *Infrastructure Intelligence* and ensure it remains a major contributor in the sharing of knowledge and being the forum for debate.

Over the recent years it has become clear that our membership has changed, with significant mergers and acquisitions, and continued consolidation in the market. ACE needs to continue to address the needs of both the small and medium sized consultants, and the larger consultants. Our broad range of activities will provide all members with value, both tangible and intangible.

ACE continues to make a major contribution, whether through business, technology, diversity and inclusion, or the next generation of engineers and consultants. I am confident that the new Chair and Deputy Chairs, with the Board, will continue to make ACE fully relevant to our members in 2016 and beyond.

My thanks to the ACE Board, the ACE staff and past Chairs who have all shown their continuing dedication and support. Thank you.



## Face the threat from management consultants, warns ACE Lifetime winner

Former URS boss *Geoff French* urges engineers to defend their territory as ACE rewards industry's top bosses at annual European CEO Awards.



Left to right: ACE chief executive with Life Achievement Award winners Geoff French and Kimmo Fischer.

European consultancy leaders have been warned to recognise and meet the threat from global management consultancy firms as they increasingly target clients in the growing infrastructure sector.

Speaking at the Association of Consultancy and Engineering's annual ACE European CEO Conference and Awards this week, Lifetime Achievement winner, former URS chairman Geoff French, urged the audience of global engineering consultancy leaders to recognise and react to the threat.

"I am going to use every opportunity I get to challenge the industry to face up to the threat from the big four," said French.

"The threat is other people coming into our territory and stealing the more profitable bits of our business and leaving us with just the bits that they don't want," he added. "I think that is a real and serious problem and I am not sure that we are taking that enough into consideration."

French also highlighted the on-going need to turn the current political impetus behind infrastructure and engineering into real careers.

"Engineering is recognised as a profession that is required," said French. "But I am not sure that we have turned this appreciation of engineering into an appreciation of the advantages of doing engineering – the recession and the lack of jobs in the recession set that back." French was speaking after the

annual ACE European CEO Award which rewarded the sector's best performing bosses.

Winners included Gavin English, managing director IMC Worldwide.

Strong leadership in an increasingly disruptive environment was highlighted by the winners as critical to success alongside the need to encourage creativity and innovative thinking.

"I think there is better opportunity for innovation and creativity in smaller to medium sized organisations," said IMC Worldwide's Gavin English, who led the management buy-out of the business from WSP in 2011.

"Sometimes larger businesses don't allow staff to move forward with freedom to develop ideas – it still happens but you have to work a lot harder at it in larger organisations," he added.

The six leading consultancy and engineering executives were rewarded at the ACE European CEO Awards dinner held in London on Wednesday 12th November. The awards are part of the European CEO Conference, a forum for discussion and debate between CEOs in the consultancy and engineering industry.

Speaking after the awards ceremony Flemming Pedersen, president of the European Federation of Engineering Consultancy Associations and the chair of the judging panel said the awards celebrated the great work by business



This year's ACE European CEO Award winners

leaders across Europe to drive economic growth.

"I am constantly impressed by their determination, innovation and the personal contributions they make to their companies," he said. "The individuals honoured at the ceremony will no doubt continue to be the wealth creators of tomorrow."

The full list of award winners:

- Sterling Award – Gavin English, Managing Director – IMC Worldwide, UK
- CEO of the Year Awards [Small Firm] – Simon Innes, Managing Director – Goodson Associates, Scotland
- CEO of the Year Awards [Medium Firm] – Dominik Courtin, CEO – Basler & Hofmann, Switzerland
- CEO of the Year Awards [Large Firm] – Pablo Bueno, President & CEO – TYPISA Group, Spain
- Lifetime Achievement – Geoff French, AECOM, UK
- Lifetime Achievement – Kimmo Fischer, Chairman – SITO, Finland

## ACE announce a full calendar of events in 2016

Following on from a busy year of conferences and awards, ACE has announced its Calendar of Events for 2016

Kicking off in March with the annual gathering for the UK's engineering and consultancy experts and professionals, ACE's National Conference on 15th March 2016 will have the key theme 'Building Teams : Boosting Productivity' and will help to identify business opportunities and new strategies for innovating in a changing, technology driven environment.

ACE is excited to be launching its new and innovative Consultancy & Engineering Awards with categories open to the wider industry including four 'Champion of the Year' awards in the areas of Diversity & Inclusion, Sustainability, Technology and Collaboration.

Now in its third year, ACE's International Conference on 15th June will capitalise on previous successes in attracting key business leaders, influencers and thought-leaders from across the globe.

As always ACE's event year will culminate in November with the European CEO Conference & Awards and its prestigious Parliamentary Reception.

Attending an ACE event or activity is an important way to keep up to date with the latest thinking within our industry and allows delegates to participate in stimulating exchanges of ideas.

To find out more information or register for an event visit [www.acenet.co.uk/events](http://www.acenet.co.uk/events)

### KEY DATES

- ACE National Conference : Tuesday 15th March 2016
- Consultancy and Engineering Awards : Tuesday 24th May 2016
- ACE International Conference : Wednesday 15th June 2016
- European CEO Awards: Tuesday 8th November
- ACE Parliamentary Reception: Wednesday 9th November
- European CEO Conference: Wednesday 9th November and Thursday 10th November

## COP21: The 'battle for interpretation'



Matthew Farrow writes on the Paris climate talks.

I'm writing this just after the start of the COP21 summit – the Paris climate change talks (COP stands for Conference of the Parties, ie, the Parties to the Kyoto Treaty). By the time you read this, the Summit will have ended, and while I don't know what the precise outcome will be, I'm pretty sure that the details will be obscured by the 'battle for interpretation'.

This is because for many individuals and stakeholders, whether on the green side of the argument or the climate-sceptic side, persuading the public and the media what to think of COP21 will be almost as important as what is actually decided.

In the year leading up to COP21, there has been much more optimism from neutral commentators as to the prospects for a good result.

This optimism is based on three factors:

- The climate science around the risk of 'dangerous climate change' has broadly consolidated in recent years
- The cost of low-carbon technologies such as solar has fallen dramatically
- Countries are more willing to set out national carbon reduction goals

In contrast critics of the COP process, such as Nigel Lawson's Global Warning Foundation, make their attack based on several arguments.

First, they point out that adding up INDCs (Intended Nationally Determined Contributions) still does not cut global emissions enough to keep the world on a trajectory to below 2 degrees of warming. Second, they argue that because Paris will not result in a binding international treaty, there is no way to enforce the INDC's. Third, they argue that the COP process has just become a series of expensive, self-perpetuating jamborees.

On balance, I think the optimistic view is the more accurate one. After the widespread dismay at the failure of the 2009 Copenhagen COP talks, getting a deal in Paris would give a real boost to the low carbon movement. I also expect that the final agreement will include some form of review process to encourage countries to raise their targets over time.

In terms of the lack of a legally binding treaty, I think this is inevitable. We know from the problems with the Kyoto Treaty that in practice it is almost impossible to have meaningful sanctions on countries that don't achieve these sorts of targets. In the end, a combination of public and peer pressure, self-interest and a desire to protect national reputations has to do the job. And this is why the scale and razzmatazz of COP21 is justified. No country wants to have its leader making very public pledges on climate change and then to be seen to be failing to live up to this. Equally any agreement must cover the vast majority of emitters. So the grand public nature of the talks, the attendance of world leaders, and the huge number of countries involved, is essential.

What will be the long term impact of COP21? Not knowing what final agreement will be reached, its hard to be sure, but I do think that there is a good chance that a deal will be done which gives further momentum to low carbon investment and activity, and of course this will have big implications for infrastructure. There is also a possibility that we will see real progress towards mobilising the \$100bn a year of climate finance which was the figure agreed in Copenhagen as being the scale of financial flows needed by 2020 to really start delivery of a low carbon revolution. There has already been a lot of debate in Paris as to how much has now been pledged by richer countries (the OECD says over \$50bn, others say much less), it is clear the finance issue is getting the attention it deserves.

So while a broadly encouraging agreement is expected, the days after the Summit concludes will see a concerted attempt by various stakeholders to portray the talks as either a huge breakthrough or a colossal failure. The business community needs to be aware of this, and focus on the real implications for infrastructure, investment and markets.

Matthew Farrow is director general of the Environmental Industries Commission, the leading trade body for environmental firms. [www.eic.co.uk](http://www.eic.co.uk)



# Shaw report reveals Network Rail shake up options as MPs call for overhaul of the organisation

All articles can be read in full at [www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)

## TOP STORY: Shaw report implies big shake up of Network Rail ahead

A major rethink of Network Rail's structure and financing with more DBFO projects constructed by the private sector and even full scale privatisation are options being considered.



Nicola Shaw

HS1 chief executive Nicola Shaw's scoping report "The future shape and financing of Network Rail" was published ahead of firm recommendations to follow in Spring 2016.

The structure of the organisation will drive the financing options, Shaw said, with the structure question being considered through three perspectives: the customer perspective will consider who Network Rail's direct (and potentially indirect) customers are, and how effectively the current organisational structure works to deliver for them; the devolution perspective will consider the question of the geographical organisation of Network Rail's operations, and whether this enables effective delivery of railway infrastructure; and the

growth perspective will ask whether Network Rail's structure works to enable effective planning and delivery of enhancements to rail infrastructure, particularly with a view to meeting growth projections and increasing capacity.

The report shows that alternative funding mechanisms are being considered to remove Network Rail's reliance on direct public sector funding, "with different company structures likely to require different financing and funding solutions at various levels of Network Rail's capital structure and/or for specific projects, to ensure sustainability and affordability" the report said.

It anticipates that "while government support is expected to remain an important component of the system, especially for enhancements of the network, the introduction of specific forms of private sector capital may facilitate risk transfer (albeit partial) away from government, as well as potentially reduce the upfront capital demand on the taxpayer."

Solutions offered in the report are not meant to be mutually exclusive and several combinations may exist, the report explained.

"For illustrative purposes, one scenario could be maintaining Network Rail as a public sector body, while separating out a route to be given in concession to private parties and financing specific infrastructure projects through a combination of private and public money."

"I am grateful to all those who have already given me their thoughts and views and who have taken time to think through the options for the future," Shaw said in the report introduction.

## MPs call for rail overhaul



### Network Rail and ORR in the firing line from Public Accounts Committee.

The Public Accounts Committee (PAC) has lambasted severe planning and budgeting failures in Network Rail's current five-year investment programme. In particular it points to "staggering and unacceptable" cost increases in the project to electrify the Great Western Main Line from London to Cardiff, which is now expected to cost up to £1.2 billion more than the £1.6 billion estimated a year ago.

The PAC warns more projects could be delayed in order to balance Network Rail's budget. As a result, the PAC is calling for a fundamental review of the regulator's role and effectiveness.

The PAC report follows the scoping report by HS1 CEO Nicola Shaw into future financing options for Network Rail which also implies a major shake up is needed at the rail operator.

It also urged Government to publish a revised and re-costed programme of electrification improvements, including the rationale for prioritising.

"Network Rail has lost its grip on managing large infrastructure projects. The result is a twofold blow to taxpayers: delays in the delivery of promised improvements, and a vastly bigger bill for delivering them," said chair of the PAC Meg Hillier.

## Mott MacDonald and Hatch separate



### Mott MacDonald and Hatch have announced that the Hatch Mott MacDonald (HMM) joint venture will be separated into two distinct businesses.

HMM's Canada business will become part of Hatch while HMM's US business will become part of Mott MacDonald. HMM's Pipelines business, which operates in both Canada and the US, will also join Mott MacDonald.

Hatch Mott MacDonald was created 20 years ago as a joint venture providing engineering and professional services to the North American infrastructure market. HMM has grown into a major engineering and infrastructure business, with 3,000 staff and 77 offices throughout the US and Canada.

In addition to the HMM joint venture, both Mott MacDonald and Hatch provide services in various North American sectors outside of HMM's infrastructure markets. With the joint venture having more than fulfilled its original intent, Mott MacDonald and Hatch agree that the route to achieving their respective global growth ambitions is that each should now move forward as two separate businesses.

Mott MacDonald and Hatch will continue to operate in all sectors throughout North America. The change will enable both companies to focus on all markets and services, offer more expertise to more clients, and provide their staff with greater opportunities.

## Consulting within contractors



### Amey's Dave Spencer on being a consultant that's part of a contractor.

Major contractors need to have in-house design capacity according to new ICE president Sir John Armitt. Spot on, says Amey's consultancy MD Dave Spencer. There are gains to be had and only a little initial pain.

One of the core elements of effective collaboration is a strong relationship between design and construction – something that Amey addressed nearly a decade ago with the strategic acquisition of Owen Williams.

The civil engineering profession has become ever further committed to collaboration and all that it entails, as we move to deliver more complex and challenging contracts. We only have to review the UK's major projects over the last few years to recognise the necessity, benefits and success of our collaborative activities: Terminal 5; London 2012; Crossrail; CTRL; etc.

Amey has been at the forefront of the integration of design and construction over the past few years. During this time, we have gone through a huge cultural and organisational change to drive a better business model, creating a business that values consultancy and engineering skills alongside operational skills.

The benefits have been worth the time and effort. We are able to optimise whole-life value through this more integrated delivery; we are able to reduce costs, through fewer interfaces and deliver more innovative solutions and incorporate safety into the earliest stages of a project's design.

## HS2 announces design panel



### A team of 45 experts from across all fields of design have been chosen by panel chair Sadie Morgan

The UK's leading design experts have been named in the new High Speed 2 Independent Design Panel tasked with helping the project apply the best design principles to all its work.

The 45 experts have been drawn from design fields across multiple industry sectors including: urban; landscape; equality, diversity and inclusion; digital; brand and product and will work alongside internationally-renowned architects; sustainability experts and engineering specialists.

"I am delighted that we're now up and running with the HS2 Independent Design Panel. Our aim is to mentor and inspire HS2 to design a railway system which will exceed all of our expectations," said Morgan at the launch of the panel.

"The British creative and engineering industry is already delivering design excellence around the world. HS2 is a huge opportunity to bring that brilliance home," she added.

Members of the group will form part of regional site-specific design panels, for example at Birmingham Curzon Street station to ensure the whole project design meets the principles of the Design Vision.

HS2 chief executive, Simon Kirby said: "It's a mark of HS2's significance that it's attracted such a wealth of talent to help us deliver this transformational piece of infrastructure for the nation."



# Effective risk management and transfer for infrastructure projects

Brian Denney, head of Infrastructure at Arthur J Gallagher Construction offers advice on how to protect yourself on major projects.

The effective management of risk can be one of the most significant factors in the success or failure of complex infrastructure projects. Where risk can be managed with clarity within the terms of the contractual framework, projects are generally completed successfully.

Conversely, projects can encounter major problems because risks were not properly identified or the allocation of known as well as unforeseen risks was not clearly defined.

The well recognised principle that a risk should be allocated to the party that can best manage the risk is not necessarily appropriate for infrastructure projects where there are multiple stakeholders, each of whom can influence the occurrence and severity of a risk. Further, the understanding that only one party can manage the risk or that one party is best placed to manage the risk does not reflect how risk can be influenced by some or all project participants and stakeholders.

The reality can be that the party who has least bargaining power ends up being the party that bears the risk. In many cases this situation can be attributed to commercial pressures with risk being pushed down to those who will accept it.

When faced with a risk that it cannot adequately control, that party will seek to protect itself by either increasing its contract price; or later in the project, by engaging in adversarial behaviour, such as bringing contractual claims or change orders so as to recoup their costs resulting from the consequences of that risk.

Where inflated contingencies are included as a result of inappropriate risk allocation, these costs can be compounded through the contractual chain with a multitude of risk contingencies. An inflated project cost, an owner or government authority may be faced with having to commit greater capital expenditure, or in extreme circumstances, abandoning or down sizing the project.

All of these outcomes have the potential to call into question the



**“We believe it is important for a project owner or procuring authority to recognise the concept of risk sharing in successful project delivery and negotiate contract terms that build trust with their contractors”**

Brian Denney, head of Infrastructure at Arthur J Gallagher Construction

economic viability of a project and subsequently, generate adverse publicity which may create a negative attitude from the end user.

We believe it is important to recognise the concept of risk sharing in successful project delivery. Project owners should negotiate contract terms that build trust with contractors and promote a collaborative means to solve

the challenges that will inevitably occur during the course of a project. Contracts must set out and apply clear parameters for risk allocation and sharing in order to avoid situations where each party simply seeks to optimize their own position rather than that of the project as a whole.

We have experienced a number of situations where project owners seek to practice risk shedding rather than risk sharing and it should be remembered that it is almost never possible for one party to totally absolve itself of risk by transferring that risk to another party.

A good example of how the management of risk has evolved is the Code of Practice for Risk Management of Tunnel Works. Since the Code was introduced, the use of a risk register to identify and manage project risk has increasingly become standard practice, and widely viewed as best practice which can be applied to any infrastructure project, with delivery of the same positive benefits.

Insurance premiums can reduce in direct proportion to the understanding and management of risk. The implementation of an effective risk management program will help to drive down the frequency and size of losses. Through proactive risk management and the involvement of a risk advisor at an early stage, associated risks can be understood, facilitating an informed decision of the financial aspects of project risk and insurance.

The desired result is lower insurance premiums, hence a reduced total cost of risk and related cost savings, benefiting the project out turn costs and improving the project programme. Clearly, risks and unforeseen occurrences can and will still occur regardless of risk management. However, mitigating the severity and the frequency are key aspects to achieving the goal of project completion on time and on budget.

Our experience in the infrastructure sector has shown us that this approach will lead to successful and cost effective projects that build the trust of the public and support sustainable infrastructure investment and development.

## Career path: Dylan Shankland, Construction Youth Trust Winner 2015

North Ayrshire Council's Dylan Shankland was awarded the Winner of Winners prize at the prestigious Duke of Gloucester's Young Achievers Scheme in 2015.

Dylan Shankland started his working life as an apprentice plasterer at Ayrshire Council but a serious car accident meant that he was unable to continue with any manual labour. Rather than let that hold him back, Dylan took up a role as a clerical assistant within the contract performance team. During his three and a half years in this role, Dylan completed an HNC in quantity surveying at the City of Glasgow College which, along with his enthusiasm and hard work, led to him being offered a role as shadow contract performance supervisor at North Ayrshire Council.

Wanting to achieve more, Dylan has now started studying for a degree in Quantity Surveying at Caledonian University in Glasgow. “I am extremely grateful for the opportunities, training and support which I have been provided with throughout my time at North Ayrshire Council,” he says. “Without that support and encouragement I wouldn't have found my passion for



quantity surveying and have been able to pursue it in the way that I have.”

The future is clearly very bright for Dylan. “How far Dylan can go, and in what direction, is only limited by his own ambition. I would just like to see

him being really ambitious, because he could achieve so much,” said one of the judges. “Another exceptional candidate, with such enormous potential, and the perfect role model for Construction Youth Trust.”

Judges are now looking for entrants for Construction Youth Trust's 5th annual awards scheme The Duke of Gloucester's Young Achievers Scheme 2016. This is a great opportunity for exceptional young professionals under 30 working in construction and the built environment to be commended and celebrated for their achievements. There are five categories to enter:

- Construction Delivery
- Design, Planning and Architecture
- Engineering
- Project Management
- Surveying.

One of the category winners is chosen as overall winner of the awards scheme. Finalists are judged by a panel of industry experts through a process of presentations and interviews.

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## Collaboration:

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