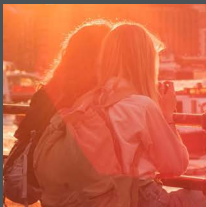
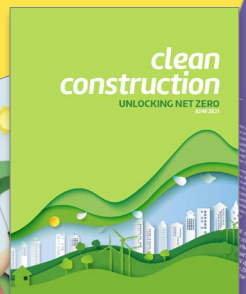




# Unlocking net zero

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New report out now!



## DIVERSITY

'Queering' public places to encourage inclusion.

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Biden's green challenge to US construction.

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## Message from the editor



As we look forward to better days ahead (hopefully) as we emerge from pandemic restrictions, there's a distinctly future theme to this issue of the magazine. Our interview with the brilliant Emma-Jane Houghton is a must-read and the live recording of the chat I had with her about the future of our industry is a must-watch too.

We cover the government's future plans for the rail network following the Williams Review and the sector's response to that and also take a look at how the public realm might look post-Covid, as well as how it can be shaped to make it a more diverse and welcoming place for all communities.

Our coverage of the Big Contracts Debate we organised with Atkins offers an insight into how the industry needs to frame its commercial arrangements going forward. Spoiler alert – contracts need to change to support the sector's digital transformation. We also shine a spotlight on the future of work and ask whether we'll all be sat at a city desk or in a spare room in the months and years ahead.

Most importantly, four months before the UK hosts the COP26 climate change conference in Glasgow, we also examine the current state of play on the industry's and the nation's race to net zero. There are big challenges remaining in this area and, frankly, the jury is still out on whether that race will be won.

Thanks for your continuing support of *Infrastructure Intelligence* and I hope you enjoy this issue of the magazine.

**Andy Walker,**  
Editor, Infrastructure Intelligence  
07791 997602  
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# Top 50 Women in Engineering revealed



A galaxy of talent in this year's Top 50 Women in Engineering.

The Women's Engineering Society (WES) has announced the winners of the Top 50 Women in Engineering: Engineering Heroes awards. Now in its sixth year, the 2021 WE50 is judged by a panel of industry experts and celebrates women who have made a significant contribution to helping their organisation, community or indeed the world functioning during the last year.

Commenting on this year's awards, head judge, Professor Catherine Noakes said: "2020 was a year unlike any other and remarkable times call for remarkable people. That is why, in 2021, the Top 50 Women in Engineering Awards celebrate the engineering heroes who have responded to the challenges of an ever-changing world, from healthcare and climate change to infrastructure and championing diversity, with inspirational innovation and leadership. With over 230 nominations, only the exceptional made it to the top 50."

*"The Covid-19 pandemic has highlighted how truly important science, technology and engineering are to the health of our planet. The 2021 WE50 personify the inventive and inclusive thinking needed to build a sustainable future."*

Professor Catherine Noakes, WE50 awards judge.

"The Covid-19 pandemic has highlighted how truly important science, technology and engineering are to the health of our planet. The 2021 WE50 personify the inventive and inclusive thinking needed to build a sustainable future. If there was ever a time that we needed these heroes in engineering, it is now."

Members of the top 50 include many women from the construction and related sectors. Companies well represented include Arup, Atkins, Buro Happold, Sir Robert McAlpine, Costain, Skanska and HS2. Academia also features strongly and outgoing chief executive of the Association for Consultancy and Engineering Hannah Vickers is also included in the list.

[Click here](#) to see the list of the Top 50 Women in Engineering.

# Innovative railway footbridge design unveiled

A new design of bridge that could transform rail crossings across Britain has been unveiled by Network Rail.

The prototype has been trial built at a test centre in Long Marston, Warwickshire and the national transport body says the innovative circular bridge is set to revolutionise the way Network Rail builds footbridges over the tracks.

Made from lightweight fibre-reinforced polymer material, the environmentally friendly bridge can be installed in a matter of days, and its modern, modular design means it can be adapted to different locations. It also features built-in monitoring to assess usage and maintenance needs.

Andy Cross, Network Rail programme manager, said "We were able to take a different approach. This has allowed us to work with several small and medium-sized businesses, many of whom haven't worked on railway projects before but have the skills and expertise to bring the concept of a lightweight, low-cost footbridge to life."

"In just 11 months we have developed a prototype bridge that is stunning in design, environmentally friendly and will take days and not weeks to install and thereby causing less disruption for the surrounding community."

Companies that were part of the project team that worked with Network Rail to help design and build the new bridge include

Knight Architects, Jacobs, KS Composite, Sui Generis, Epsilon Optics, Q-Railings, JT Consulting and FoFlo.

Network Rail hope the ground-breaking design will be adopted across the country as part of a wider programme of work to transform how footbridges are built on the rail network in future, as well as providing an attractive alternative to repairing existing crossings.

Read more online at [www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)



The new prototype bridge has been a real team effort.

# UK failing on climate change

Action to improve the nation's resilience is failing to keep pace with the impacts of a warming planet and increasing climate risks facing the UK. That's the conclusion of a comprehensive independent assessment led by the Climate Change Committee (CCC) which considered a catalogue of risks and opportunities affecting every aspect of life in the UK.

The committee is calling for political leaders in the UK government and governments in Wales, Scotland and Northern Ireland to increase their efforts to adapt to climate change to ensure that societal, economic, and environmental goals remain achievable in the face of climate change.

Baroness Brown, chair of the CCC adaptation committee said: "The severity of the risks we face must not be underestimated. These risks will not disappear as the world moves to net zero; many of them are already locked in. By better understanding and preparing for the coming changes, the UK can prosper, protecting its people, its economy, and

its natural environment. A detailed, effective action plan that prepares the UK for climate change is now essential and needed urgently."

The CCC says the government has an important role and is calling for the delivery of a much better action plan to support good adaptation planning across the UK and integrate this into all relevant government plans and policies. "The government has to date not heeded the CCC's advice on the importance of this plan or on funding it adequately. This needs to change," says the committee.

The findings of the CCC's latest assessment are worrying, given the UK government's tough talk on climate change and its hosting of the global COP26 climate conference in Glasgow in the autumn and once again highlights the massive challenge facing the nation if it is to hit its net zero targets.

[Click here](#) to read the Climate Change Committee's third UK Climate Change Risk Assessment.



Boris Johnson's government is lagging behind on climate change adaptation.



# Be bold, brave and collaborate

Construction is a fantastic industry, but it needs to be bolder and braver according to Emma-Jane Houghton, commercial director of the UK's new hospital programme. *Rob O'Connor* reports.

Construction is a fantastic industry to join and be part of but it needs to be bolder and braver to grasp the opportunities to change society for the common good, according to Emma-Jane Houghton, the commercial director of the UK's new hospital programme.

Speaking exclusively with *Infrastructure Intelligence* editor Andy Walker on Friday 11 June 2021 in the latest of our In the Spotlight interviews, organised in association with events and communications strategic partner BECG, Houghton struck home on a number of hot topics currently facing the industry.

Actively promoting the achievements of the industry should go alongside future industry collaboration, embracing social value and modern methods of construction and developing contract models with sustainable profit margins as vital parts of making positive change, according to Houghton.

At a time when there is much talk in the construction industry about change and doing things differently, hers is a confident and persuasive voice for the benefits of rethinking procurement and the way the industry works.

## Creating a lasting and sustainable legacy

Talking about her pioneering approach to enable supply chains of the future and showing that if the industry thinks differently and acts boldly and bravely then great things can happen, Houghton said: "I am determined to champion that there is a different commercial environment to major built environment investment. That is where most of my



Emma-Jane Houghton, commercial director of the UK's new hospital programme.

energy goes. Not just thinking differently for the sake of it. We can do things in a much smarter and modern way that creates a lasting and sustainable legacy for the sector – and we need to start now!"

Houghton, a music graduate who confessed that she initially 'fell into' construction, is clearly passionate that the industry should be seen and promoted as a great career choice for a diverse range of people from across society. "I met people who were super generous with their time - engineers, planners, architects, you name it - and I found and realised that this is a great career," she said.

"It's that passion which drives the industry and I've seen that passion and generosity wherever I've worked. No other sector comes close with the levels of generosity of time and knowledge it gives to new recruits, and there's no other industry where people are lucky enough to be in the mix of such a range of skills. It's a great industry to join and be part of but, looking ahead, while we have great skills, we also have an opportunity to do much better – a great chance to be more sustainable," Houghton said.

Asked why the industry needs a different approach to commercial strategy and procurement, Houghton said: "The current set up is not sustainable. Current profit margins of around 3% are too low – pipelines and sensible contracting models with sustainable profit margins will help drive innovation. Contracts need to reflect the complexity and the risk profile of what we're buying. Sustainable contracts need to be in place."

## Collaborate and redefine best value

Highlighting collaboration and redefining best value as key to making change happen, she added: "My view is that proper collaboration is the coming together of various skills sets for the common good. People working together for the common good. The industry very much has a collective responsibility to change and work together. We all recognise that a 3% profit margin is not sustainable for future research and development. We've got to differentiate between lowest cost procurement and value-based procurement. Lowest cost does not always mean best value for money."

***"I am determined to champion that there is a different commercial environment to major built environment investment. That is where most of my energy goes. Not just thinking differently for the sake of it. We can do things in a much smarter and modern way that creates a lasting and sustainable legacy for the sector – and we need to start now!"***

## Social value and modern methods of construction

Embedding social value should also be a vital part of future procurement, said Houghton. "We must put social value at heart of policy, driving local GVA and creating local jobs in the communities we serve. Social value is vital, not just built assets, but for local communities across the UK."

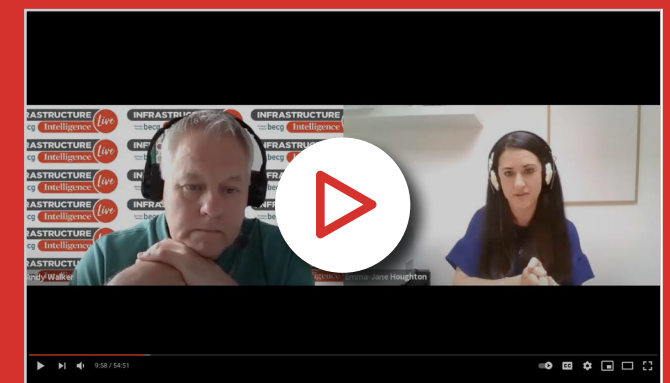
Modern methods of construction (MMC) and off-site manufacture have also been heavily touted as solutions to help 'build back better' in the post-Covid recovery, a sector that Houghton said needed bolder support and investment. "It's a hot topic for us. MMC is at the heart of what we do and is vital if we're going to achieve what we want," said Houghton. "We need to be brave enough to invest in MMC properly, and being brave means going beyond what's gone before – being individually and collectively brave with investment," she said.

*Infrastructure Intelligence* editor Andy Walker said: "We often hear a lot about change and doing things differently in our industry but it was a real pleasure to speak to someone like Emma-Jane who not only wants to see change and believes in it, she clearly has the determination to make it happen and will work with the construction supply chain to ensure that they get that message too. We need more Emma-Janes in our industry!"

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The Infrastructure Intelligence LIVE series of events is organised in association with our Events and Communications Strategic Partner, BECG.

[Click here](#) to watch a recording of the full interview.





# Women in Transport elects Field as president

Communications professional Jo Field has been elected as the new president of the industry lobby group, Women in Transport.

**W**omen in Transport has elected Jo Field as its new president, succeeding Katie Hulland. Field is the managing director of specialist transport communications consultancy JFG Communications. Before founding the company in 2016, Field was head of campaigns, communications and stakeholder engagement at Transport for London (TfL), where she built the organisation's award-winning stakeholder engagement team.

Field will serve a four-year term and her election was confirmed at Women in Transport's annual general meeting held on 13 May 2021. Women in Transport members also elected five new board members, including Marny Moruzzi as Vice-President.

As a fellow of both the Chartered Institution of Highways and Transportation and the Chartered Institute of Public Relations, Field is a transport professional and public relations professional in equal measure and is sure to bring her full skill set to her new role.

Commenting on her appointment as president, Field said: "I am a passionate campaigner for gender equality and I bring this energy and expertise to the role. I look forward to advocating for Women in Transport and boosting our connections with industry employers, parliamentarians and government to

*"I am a passionate campaigner for gender equality and I bring this energy and expertise to the role."*

Jo Field, president, Women in Transport.



Marny Moruzzi, vice president, Women in Transport.



Jo Field, president, Women in Transport.

enable us to create positive change for our members and ensure we have an even greater voice on the issues that matter to us.

"As the transport industry recovers from the pandemic, there has never been a more important time to ensure gender diversity is central to policymaking and that a gender-balanced workforce is involved in the planning, design, construction and delivery of services to enable the industry to build back better."

*"Women in Transport has been a constant support, a hub of knowledge and collaboration and a trusted and valuable network to me."*

Marny Moruzzi, vice president, Women in Transport.

Newly elected vice president, Marny Moruzzi, said: "Women in Transport has been a constant support, a hub of knowledge and collaboration and a trusted and valuable network to me. In my career I have held various roles spanning traffic operations to major transport infrastructure projects including High Speed 2 and Lower Thames Crossing and I've been fortunate to get to know many of the Women in Transport board members, members and leaders past and present along the way. As vice president, I will draw on my varied experiences and knowledge to support and help lead Women in Transport in progressive and forward-thinking ways."

## The full list of new Women in Transport board members is:

**President:** Jo Field  
**Vice President:** Marny Moruzzi  
**Past President:** Katie Hulland  
**Events Lead:** Steve Griffiths  
**Marketing Lead:** Nicola McMillan  
**Regional Coordinator:** Asiya Jelani  
**Regional Lead: West Midlands Alliance:** Daljit Kalirai

The rest of the Women in Transport Board remains the same and can be found on the Women in Transport website at [www.womenintransport.com/board-members](http://www.womenintransport.com/board-members)

# 'Queering' public spaces to encourage inclusion

A new report, *Queering Public Space*, is calling for an urgent rethink of how towns and cities are designed to better encourage inclusion and promote diversity.

**T**he University of Westminster and Arup have published a new report exploring the relationship between queer communities and public spaces. *Queering Public Space* calls for an urgent rethink of how towns and cities are designed and provides recommendations for how they can be made more inclusive for all.

The report comes after recent research from Gallup and Stonewall found that 50% of the British public recognise that LGBTQ+ people change their behaviour in public space to avoid hostile targeting, while trans people avoid certain areas altogether.

Despite the emergence of queer enclaves, known as 'gaybourhoods', in many cities around the world, report authors Professor Pippa Catterall and Dr Ammar Azzouz argue that inclusivity and inclusive design needs to go far beyond this.

Their key findings include:

- A fresh approach to planning, licensing and design is needed to mark and celebrate queer heritage in the public realm. LGBTQ+ heritage must be highlighted and preserved to ensure people understand the rich history of LGBTQ+ experiences and communities. This may help undermine the hostility and misunderstanding which continues to be widely expressed towards these groups.
- Inclusive design should contribute to the desistance of hate crime and promote the inclusion of marginalised and disempowered groups in public space. Attention to the scale and mass of buildings, lighting features, colours and facades and the addition of curvilinear aspects can help achieve this.

- LGBTQ+ inclusion and safety in public space should be incorporated into devices like equality impact assessments as a requirement, particularly when there is a loss of amenities for them in the planning application process. Designers should consult and involve marginalised communities when planning and designing spaces.

By addressing these recommendations and designing in diversity, the report argues that public spaces will be more accessible to all marginalised and disempowered groups, creating inclusive and welcoming spaces for all.

Pippa Catterall, professor of history and policy at the University of Westminster and co-research lead, said: "Far too much public space in our cities is exclusive rather than inclusive and often unsafe for various groups of people, particularly after dark. Our argument is that different approaches to planning, licencing and design can change this and make these spaces more inclusive and welcoming for all, day or night. That way public space could truly become safer and inclusive for all members of the public."

Dr Ammar Azzouz, short-term research associate at the University of Oxford and architect at Arup, added: "The cities we live in are made of layers of history and memory. Through cultural heritage sites, memorials, statues, street and building names, we read the story of our cities spatially. But often, the history and struggle of queer communities is absent from this story. We need to break this silence and to face this absence with innovative and creative ways to make our cities more inclusive."

Read more online at [www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)



Click here to download the full report, *Queering Public Space*.





# UK rail centralised in major shake-up

The rail network will be centralised but still mainly privatised following the government's recently announced shake-up in the Williams Review white paper, reports *Andy Walker*.

**T**he government has announced what it claims to be the biggest shake-up of the UK's rail network since privatisation in the mid-1990s, with the May publication of the long-awaited Williams Review and a white paper, now renamed as the *Williams-Shapps Plan for Rail*, in recognition of the transport secretary Grant Shapps.

Under the terms of the review, the rail industry will be simplified but still mainly privatised as a rebranded Great British Railways (GBR), which will control rail infrastructure and services under a new arm's-length public body. Franchises will be replaced by contracts that will incentivise private firms based on punctuality and efficiency rather than raising revenue. As part of the reforms, the existing operator of infrastructure, Network Rail, will disappear.

GBR will own and manage rail infrastructure, as well as providing online tickets, information and compensation for passengers nationwide. GBR will also collect fare revenue, run the network and set most fares and timetables when it comes into existence in 2023. The government says that many reforms will come into force before then, including the introduction of flexible season tickets, which will offer savings on certain routes for people who do not travel to work every day. Such tickets went on sale on 21 June and the government hopes that they will be popular in a post-Covid transport landscape.

Keith Williams, the chair of the Williams Review, said: "Our plan is built around the passenger, with new contracts which prioritise excellent performance and better services, better value fares, and creating clear leadership and real accountability when things go wrong." The prime minister, Boris Johnson said that the review would "deliver a rail system the country can be proud of".

Transport secretary Grant Shapps said that the railways had suffered from "years of fragmentation, confusion and over-complication," adding "It's now time to kick start reforms

that give the railways solid and stable foundations for the future, unleashing the competitive, innovative and expert abilities of the private sector, and ensuring passengers come first."

The government hopes that the further centralisation of the rail network will streamline and simplify fares, including extending contactless and pay-as-you-go systems to more parts of the country. Shapps said that the new Great British Railways would "become a single familiar brand with a bold new vision for passengers – of punctual services, simpler tickets and a modern and green railway that meets the needs of the nation".

Commenting on the review, Maria Machancoses, CEO of Midlands Connect, said: "This raft of changes is what the rail industry and its passengers have been waiting for and if implemented correctly, could have huge benefits for travellers. By specifying timetables, service levels and operating standards, this concession model will reward operators for delivering

***"Our plan is built around the passenger, with new contracts which prioritise excellent performance and better services, better value fares, and creating clear leadership and real accountability when things go wrong."***

Keith Williams, chair of the Williams Review.



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Big changes ahead for the UK rail network following the Williams Review and a new white paper.

what passengers want most – trains that run on time, friendly service and clean stations."

Darren Caplan, chief executive of the Railway Industry Association (RIA), said: "As far as the RIA and our members are concerned, we are heartened that the new Williams-Shapps Plan for Rail is a 30-year strategy, which supports modernisation and investment along the lines of the RIA Rail 2050 manifesto we published in November 2019. As we argued then, it is right to take a long-term approach, in order to smooth boom and bust and provide more certainty for rail schemes, decarbonise and digitalise the network, deliver major projects, protect and create

***"We must attract passengers back, deliver efficiencies and improve the service we provide. Today marks the start of an exciting new chapter for our railway, a chapter that puts the passenger first."***

Andrew Haines, Network Rail chief executive.

jobs, and foster innovation and collaboration between railway partners. We also welcome the ambition to attract passengers and freight back to the network and grow both markets."

Andrew Haines, Network Rail chief executive, said: "Passengers deserve a reliable, affordable and sustainable railway, focussed on them. Today's announcement will help us deliver that by simplifying the railway, paving the way to dismantle the legacy of complexity and fragmentation. Passengers and freight users will once more be put front and centre of a service designed and run for their needs.

"These changes will take time, but I am determined to get to work quickly with the industry and government. The pandemic has created significant challenges for the industry, and that means the changes we have to make are even more urgent. We must attract passengers back, deliver efficiencies and improve the service we provide. Today marks the start of an exciting new chapter for our railway, a chapter that puts the passenger first."

Tim Wood, Transport for the North's interim chief executive, said: "The north saw first-hand the effects of a fragmented rail industry during the 2018 timetable crisis. The fact that Great British Railways will bring track and train together as the guiding mind and put the needs of passengers first is a giant leap forward and something we've championed.

"This is a major national moment and a shift in how the railway is run. But this national approach must not be a missed opportunity for further devolution, giving the north's leaders greater oversight of services and infrastructure investment to deliver more integrated regional networks that work for all. The commitment to growing and investing in the railway over the next 30 years only emphasises the real need for the government to publish the Integrated Rail Plan for the north and Midlands without delay, to give us much-needed certainty on delivery of major schemes like Northern Powerhouse Rail, HS2 and the Transpennine Route Upgrade."



# Cautious industry welcome for rail shake-up

The long-awaited Williams-Shapps Plan for Rail received a broadly cautious industry welcome when it was finally published on 20 May.

**K**ey figures from the construction and infrastructure sector broadly welcomed the government's plans for a shake-up of the UK rail sector but, as ever, many believe that the devil will be in the details of the proposals which represent the biggest change to the network in a generation.

Calls for more digital working, greater integration with other transport modes, more investment in regional routes, a more coherent joined up approach to ticketing and better partnership between public and private sector all featured in the industry's response to the plans.

In broad terms, the construction and infrastructure sector has welcomed the plans, but there have been so many false dawns on rail that the government will need to deliver on its promises if it is to retain the sector's confidence going forward. Time will of course tell on this.

Opposite, we have included some of that industry reaction.



**Richard Robinson, CEO, Atkins UK and Europe**

*"The Williams-Shapps plan promises to herald the start of an exciting new era for UK rail and we welcome the decisive steps taken by government. In particular, we hope that Great British Railways will provide a more solid foundation from which the public and private sector can innovate together to create a modern, low carbon, digital network that improves passenger experience and delivers better value for money for the taxpayer. Now, we need to pull together as an industry, recognising that it's going to take a lot of hard work – and new, digitally driven ways of working – to realise this bold vision for the future of our railways."*

**David Whysall, managing director UK infrastructure at Turner & Townsend**

*"Rail connectivity is a vital cornerstone of the UK's economic recovery as we look to a more sustainable and better balanced future. The plan represents a momentous change for UK rail and the industry will be collectively getting its head around the magnitude of this reform and the market opportunities this centralised model presents. Further detail is now needed on both this and the Integrated Rail Plan to enable the industry to approach and build these programmes in a joined-up way. This will have the dual benefit of modernising the passenger experience, while creating a sustainable and world-class rail construction industry and ultimately delivering a fairer, better connected and greener UK."*

**Manish Gupta, transport partner at EY**

*"We welcome the long awaited white paper setting out plans for the most fundamental change to UK railways since privatisation of British Rail in early 1990s. The white paper seeks to put the customer at the heart of this change, while aiming to achieve significant improvement to the cost of running public transport, with the re-integration of track and train. Further, with a single organisation acting as the guiding mind for the rail industry, there should be better opportunity to direct rail investment which is consistent with government priorities around levelling up as well as net zero."*



**Cathy Travers, UK and Europe regional business managing director at Mott MacDonald**

*"We welcome the Williams-Shapps Plan for Rail which includes some bold commitments which crucially puts the customer at the heart of their proposals to reform the rail sector. We hope the government's plan to establish Great British Railways as the guiding mind for the railway, owning the infrastructure, introducing simpler and more flexible fares, and joining up timetabling and other operational matters, will speed up the recovery of the rail sector from the pandemic and build a financially sustainable customer friendly railway. We look forward to learning more details over the coming weeks and months."*



**Jonathan Edwards, transport market leader at GHD**

*"We support the proposals but think it's only the first step. Travel patterns and passenger behaviours will continue to evolve, and we need an innovative, adaptable, and commercially viable industry to match."*

*"Greater integration of track, train and tickets should help reform rail but when it comes to development, integration with our road, freight, and aviation networks must also be a top priority. A strong multi-modal network and public transport system will boost productivity and be critical to the levelling up agenda. If this fails, it will only serve to exacerbate the problems of an already fragmented market."*



**Peter Hawthorne, CEO of the government's regeneration expert LCR**

*"This is a once in a lifetime opportunity to completely rethink how we maximise the potential of the land surrounding our railway stations. The reform will bring about radical changes to the operation of our railways and give us a framework that ensures transport-linked land is always considered for development. These key brownfield assets, which so often sit uncared for and underutilised, can both deliver a great passenger experience and help to address the UK's ongoing housing shortage."*



# A sea change in tidal

Tidal should be seen as a huge opportunity for the UK's construction and engineering sectors and a potential export opportunity for the UK, says *Stuart Murphy*.

**B**ack in March, the Welsh government, which was recently returned with an even stronger green agenda, launched a consultation to bring interested parties together to revive the possibility of a lagoon-type tidal. In the aftermath of the shelved Swansea Lagoon, this is sure to put a renewed spring in the step of many tidal energy innovators, including ourselves at TPGen24.

It's an indicator of an exciting sea change afoot and one which is gathering momentum. I think people are beginning to understand that our current levels of renewables just aren't enough to meet our growing requirements for green energy 24/7, from the decarbonising of the grid and EV revolution, to hydrogen capture and smart cities.

Tidal offers a potential solution, particularly when considered in conjunction with other clean energy resources. Now is the time to make the case for it and the many associated benefits such plants can bring.



**Stuart Murphy**  
is the founder of tidal energy research project TPGen24.

There's no doubt that the recent Swansea Lagoon pilot project dented political and business confidence in tidal. However, I think the valuable lessons have been learnt and we are fast moving towards a scenario of developing systems which make long-term financial sense.

## Harnessing smart technology

Aside from the cost per MWh, Swansea had a central flaw in that it was no better than other, cheaper alternatives. Much of this was down to intermittency, with the ability to only produce electricity around 14 hours a day, most of the time. My view is, if we move beyond this, there is a very strong case for tidal energy and that's precisely what my team and I have been doing over the last five years. We have harnessed emerging smart technology to demonstrate how a tidal lagoon plant can be controlled to respond to the rise and fall of the tide, capturing water within and releasing it according to demand.

Currently in testing phase, our computational fluid dynamics modelling has shown, when correctly programmed, it is possible to achieve substantial amounts of power, available 24/7, 365 days a year using this system. It's something of a game-changer, which we hope will encourage more focus on this woefully untapped resource.

## Systematic benefits

Tidal should also be seen as a huge opportunity for the UK's construction and engineering sectors. Many of these generation systems, particularly lagoon-based ones, are major infrastructural projects and bring with them the prospect of more jobs, economic investment in struggling coastal communities and the chance to establish a global expertise for this type of system. This latter benefit can, in turn, be a potential export opportunity for UK plc.

Now is the time for the construction sector to start banging the drum for these types of systems, especially those which are not only able to deliver the direct benefits of clean, perpetual energy but also contribute to the wider socio-economic fabric. We need to inspire both politicians and businesses to invest and bring them to the table in much the same way as they have embraced tidal and solar.



The shelved Swansea Lagoon project was a setback for tidal energy but better news is on the way it seems.

# Commit to net zero or get **no public work**

New measures will require businesses to commit to net zero by 2050 before they can bid for major government contracts.

**B**usinesses must commit to net zero by 2050 before they can bid for major government contracts worth more than £5m a year, under new rules announced by the UK government in June.

Ministers say the rules will support the government's plan to build back greener by ensuring that potential government suppliers publish plans to reduce carbon emissions across their operations in order to bid for major government contracts.

Under the new measures, by September, prospective suppliers bidding for contracts above £5m a year will need to have committed to the government's target of net zero by 2050 and have published a carbon reduction plan. Firms which fail to do so will be excluded from bidding for the contract.

Lord Agnew, minister for efficiency and transformation, said: "The government spends more than £290bn on procurement every year, so it's important we use this purchasing power to help transform our economy to net zero. Requiring companies to report and commit to reducing their carbon emissions before bidding for public work is a key part of our world leading approach. These measures will help green our economy, while not overly burdening businesses, particularly SMEs."

A carbon reduction plan sets out where an organisation's emissions come from and the environmental management measures that they have in place. Some large companies already self-report parts of their carbon emissions, known as Scope 1 (direct) and Scope 2 (indirect owned) emissions.

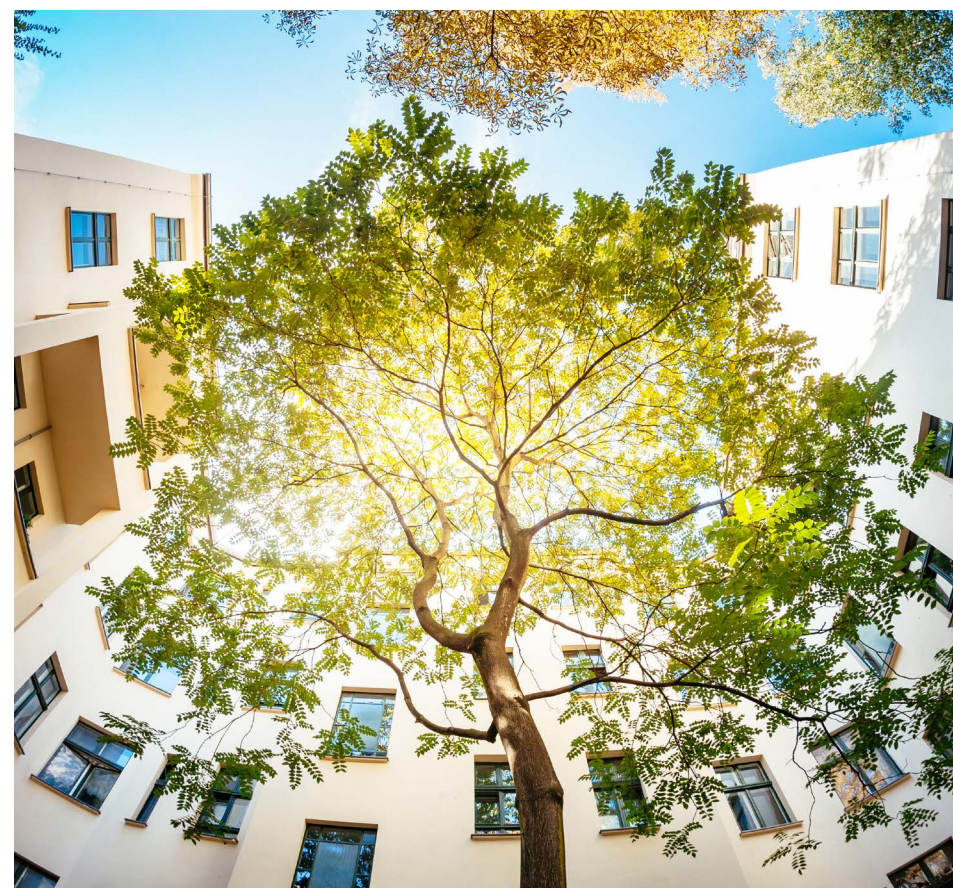
The new rules will go further, requiring the reporting of some Scope 3 emissions, including business travel, employee commuting, transportation, distribution and waste. Scope 3 emissions represent a significant proportion of an organisation's carbon footprint.

Ministers say the new rules drive forward the government's green agenda, while also striking a balance to not overly burden and potentially exclude SMEs from bidding for government work.

Tom Thackray, director of infrastructure and energy at the CBI, said: "The CBI has long supported using procurement policy to ensure government spending supports the UK's environmental objectives and these changes will encourage more firms across the country to demonstrate their own commitment to net zero when bidding for government contracts. Partnership between the public and private sectors can make the UK a global role model, not only in delivering vital public services but working together to tackle climate change."

Ministers say that all companies bidding for major government contracts will need to comply with the measure, not just those who are successful in winning contracts. The measures will apply to all central government departments and arms-length bodies.

Read more online at  
[www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)





# Towards cleaner construction

A new report published by Tarmac and *Infrastructure Intelligence* and based on industry research reveals that construction still has major challenges on its journey to net zero, says *Andy Walker*.



**Andy Walker** is the editor of *Infrastructure Intelligence*.

Given that the UK is hosting the international climate change conference, COP26, in Glasgow later this year, it shouldn't be a surprise that environmental issues are taking centre stage in the business arena, especially in the construction and infrastructure sector which is so important to the global effort to address climate change.

I have been saying for some time that without the active involvement and engagement of our industry, in the UK and internationally, the battle against climate change cannot be won. The sector's input is crucial to addressing environmental harms and to securing a sustainable future for all citizens.

That's why *Infrastructure Intelligence* was delighted to join forces with Tarmac to canvass the views of professionals from

across the construction and infrastructure industry in a unique research project aimed at providing a snapshot of views and attitudes to carbon reduction and net zero.

The resulting report, *Clean construction: unlocking net zero*, includes the results of a survey we conducted to canvass the latest views of the sector and it also contains a number of essential insights from industry decision makers and leaders about the key challenges being faced on the journey ahead to net zero.

Against the backdrop of a growing climate emergency, our report gives the construction and infrastructure industry the opportunity to understand how the UK's infrastructure pipeline can be successfully delivered to underpin the transition and ultimate delivery of a net zero society. The industry leaders we interviewed pulled no punches and don't shy away from the challenges facing the sector.

## Clarity on strategy needed

Our survey reveals that more than 60% of construction and infrastructure professionals would like the UK government to launch a *National Net Zero Strategy* before the start of COP26, with 57% also calling for the government to provide clarity on plans and support for key energy infrastructure including carbon capture, usage and storage.

These are just two of the key findings from our survey that looked at a range of industry attitudes to unlocking net zero – with 45% of respondents also calling on the government to provide guidance and training to help the infrastructure sector decarbonise. The survey also found that 82% of clients considered setting targets and earlier engagement at the preliminary stage to be the main contributing factors in reducing carbon on projects.

On the same theme, client strategy and management (52%) and materials (20%) were the two main factors currently delivering significant carbon reduction opportunities, with skills and knowledge (13%), cost (7%) and procurement (6%) also highlighted.

As we all look forward to a post-Covid future and consider building back better and greener, it is more crucial than ever to recognise both the opportunities but also the barriers ahead to help us to create an improved, resilient, low-carbon built environment for future generations. The report addresses these barriers and makes for interesting reading about what the sector needs to do to overcome them.

## Concerns still remain

While the survey highlighted many positive attitudes in the drive to achieving net zero, it also raised a number of concerns that the industry still has to battle against including complacency, established ways of working, cost issues and a resistance to change amongst some stakeholders, while striving to put positive words into action for the good of the society it serves.

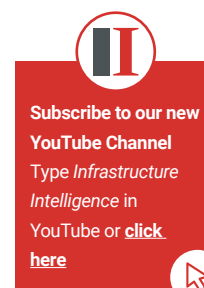
Government support and policy aside, the survey showed that our industry itself also has room for improvement. Although almost 55% of respondents said their company or organisation already has a net zero strategy or roadmap, almost 29% said no, and a further 16% were unsure. And although 25% of respondents said they began to evaluate carbon at the start of their involvement on projects – with the majority (45%) evaluating throughout and towards the end of the project – an alarming 25% still didn't evaluate carbon

on the projects they were working on. So, clearly there's work to be done there.

Looking further ahead, 84% of respondents said that net zero provided an advantage for their business – though a concerning 15% saw no advantage to their business. And, while 73% believe that net zero is not a threat to their business, 15% believe that net zero threatens their business survival, with a further 11% unsure.

COP26 is seen as a significant green threshold for many people. But, before the summit doors even open in Glasgow in November, nearly 50% of respondents want more guidance and training to help the infrastructure sector decarbonise.

No construction company active in the UK can afford to ignore the net zero agenda. I'd urge everyone to read this report as it will help in shining a spotlight on the key issues facing our industry and what needs to be done to achieve a genuinely sustainable future.





# Digitally reimaging future cities

Balancing citizens' experience of the digital and public realm will be crucial in reimaging our future cities in a post-Covid world, says *Carlo Castelli* of Jacobs.



**Carlo Castelli**  
is head of cities  
solutions Europe at  
Jacobs.

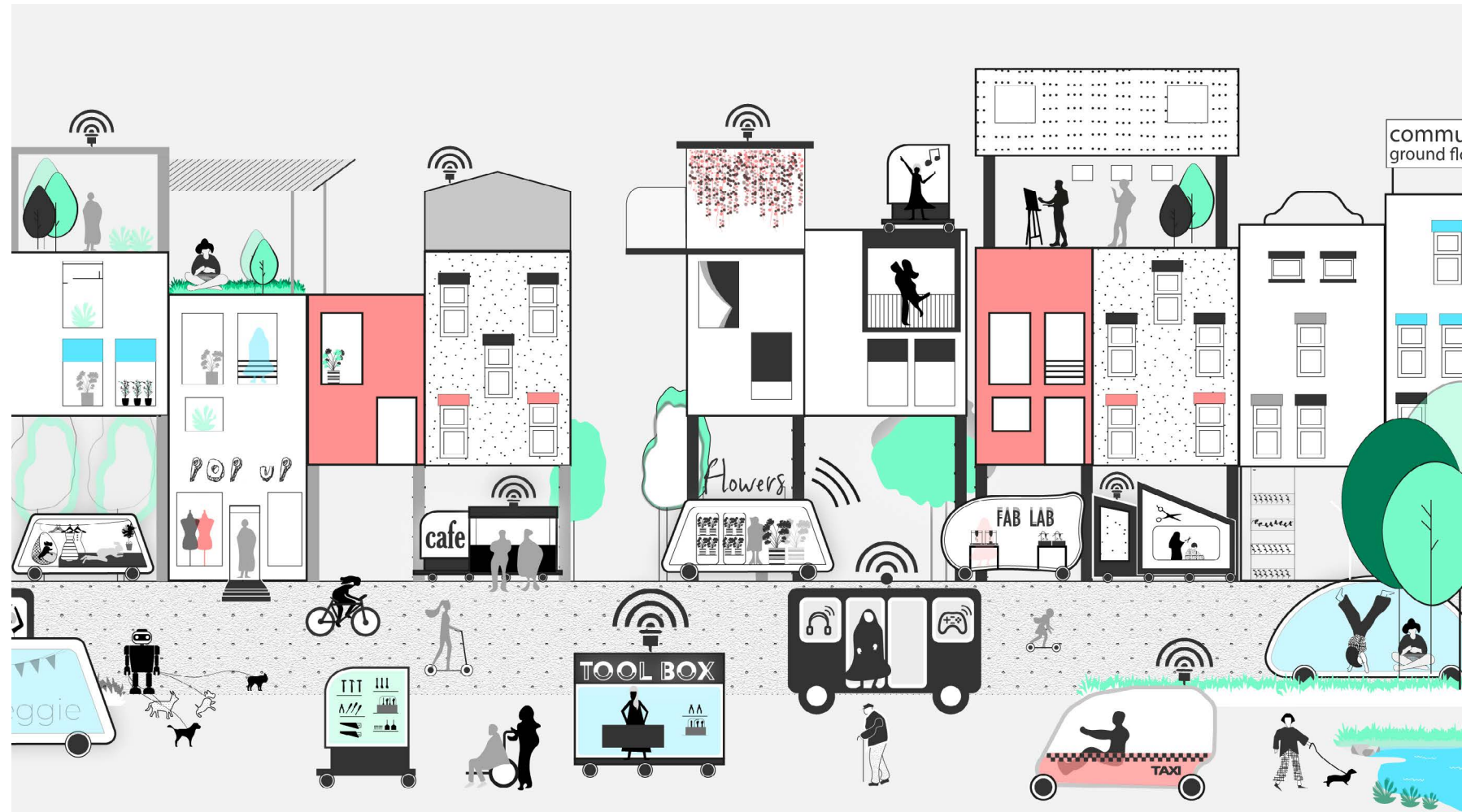
**"The city is that place where, whilst we are looking for something, we find something else."**

This definition by Ulf Hannerz, the famous urban anthropologist, captures the importance of the public realm as a constituting element of our cities, neighbourhoods and communities and highlights how our ability to access and use it freely at any one point in time is critical for cities to be sustainable and full of opportunities for all.

As such, is public realm an integral part of the infrastructure that underpins the success and development of our cities? How do we ensure that the digital realm creates equal opportunities, just as we strive for the physical environment to do? Public realm is where individuals become communities and conversely where members of the urban community can preserve their individuality and enjoy the anonymity of the city. For some, this is probably one of the most important treats of what a city is.

Traditionally, public realm is a physical feature, any space that is free and open to everyone. Yet, a digital dimension to it is becoming more important for our lifestyles with the advent of internet-based applications and social media. Even more so in the last 18 months when many of us have spent a considerable amount of time online.

And, before the pandemic hit, our livelihoods have been increasingly characterised by a blend of physical and digital interactions with friends, peers or even strangers. Our opinions and collective knowledge are shaped more and more by our exposure not only to physical relationships and personal exchange, but to those we experience on our digital devices and platforms. This is requiring a



whole new spectrum of skills, policies and protocols from a social, environmental and economic point of view.

These relationships are fundamental to our being, livelihoods and lifestyle; they are what we care about, what make us human. As we slowly return to a healthier level of experience of the physical features of our cities – the streets, squares, parks and places that capture civic essence and pride – what does the future balance between digital and physical realm look like for us?

## Two sides of the same coin?

The implications are two-fold. On the one hand, we must continue to strive and find solutions for physical public green and open space, particularly given everything that the pandemic has highlighted. Now more than ever, active travel and healthy lifestyle appear to be firmly on the agenda. And, with this, the importance of bringing green and blue infrastructure back into our cities to capture the many advantages, including tackling climate change, promoting and supporting biodiversity, and generally increasing quality of life benefits.

Three principles are key:

- That we include public realm and green, open space in a broadened definition of infrastructure, particularly green and blue.
- That we push value creation and value capture strategies and delivery programmes to align and support our public realm.
- That we expand the value base to other areas and use this for budgetary integration, for example, use of green open spaces as critical platforms for active travel policies and healthy lifestyles, generally considered fundamental for our wellbeing and quality of life.

On the other hand, we recognise there is a growing digital public realm that characterises our lives and livelihoods. On a daily basis we are immersed – willingly or unwillingly – to a variety of inputs and activities of trade and exchange through our 'digital persona'. Caring for our cities means now reflecting on how we return to experience our public realm and come together face-to-face to interact and enjoy encounters and exchanges with a diversity of people in a serendipitous, unscheduled way.

Everything we have learnt on planning, designing, delivering and maintaining our physical public realm should apply to its digital flipside. What will future public realm look like, in both forms? How will its contemporary digital and traditional built form characteristics blend? Will the new mix be able to promote inclusion and diversity of opinions?

## Opportunities for holistic thinking

There are already challenges facing our physical public realm, but also great opportunities – if we think holistically about it and apply systemic thinking and purpose-value approaches. Putting the why at the core of the way we appraise projects and programmes that really deliver value from a quality of life and wellbeing point of view to our communities.

All of this applies to digital public realm and to its relationship with its physical counterpart.

At Jacobs, we are involved in many digital place-making projects which are becoming more and more part of the process and it is refreshing to see how clients, both public and private, are considering this as an integral part of urban development. It is a tremendous opportunity to increase quality of life of citizens and communities and to promote aggregation and innovation mechanisms, implemented under strong stewardship schemes.

Critical to bringing a digital character to public realm to life is first understanding how we define digital public realm. What innovative approaches to business case, financial and delivery models are needed? And what are the opportunities for innovation at a policy level, beyond data protection and security?

These and many other questions are still unanswered, but we need to move quickly if we want to seize the opportunity and create digital public realm that can enhance our lives and livelihoods. And lastly, the most important of all perhaps – is there a case for a *Manifesto of a Digital Public Realm*? I do believe there is.

Read more online at  
[www.infrastructure-intelligence.com](http://www.infrastructure-intelligence.com)



# From pub to global technology club

With digital disruption in construction set to accelerate, a community for construction technology entrepreneurs appears to have struck a real chord, says *John Priestland*.

It started in a pub near the Old Street Roundabout in late 2019. 12 founders of construction technology start-ups met up to talk about the common challenges they faced. “Early-stage companies all run into the same sort of issues,” says Britany Harris, founder of Qualis Flow, who was one of the 12. “Things like fundraising, hiring the best talent and finding great champions in client organisations,” said Harris.

Gzregorz Marecki, co-founder of Continuum Industries, was also at the first meeting. “That is how the C-Tech Club formed – as a drink after work,” he says. “But then, with lockdown, it became a Zoom call and that is when it went global,” Marecki says.

The C-Tech Club is a networking group for founders and CEOs of construction technology start-ups. It has 160 members, each one the leader of an early-stage technology company connected with the built environment. Some are just beginning, such as VOLVE, which was founded by Arkadiy Serezhin after completing his degree at UCL in 2020. VOLVE helps engineers model their complex systems and automatically optimise them with machine learning.



**John Priestland** is a director of Priestland Consulting, which supports construction tech start-ups.

Others are much more advanced. Jeevan Kalanithi is the founder and CEO at Openspace.ai, which enables property owners, contractors and sub-contractors to capture, monitor and quantify progress on site. The company announced in late April that it had raised a further \$55m in a Series C funding round. Jeevan said: “I appreciate being able to be in touch with other founders – to share ideas and to give a little advice, based on my experience, to others on the same journey. But more than just giving advice, I very much appreciate receiving the advice this diverse group can provide.”

Anna Walkowska is the CTO and co-founder of Propergate.co, which supports just-in-time deliveries for construction sites. Based in Warsaw, Propergate has just raised \$1.2 million of Seed stage funding. She has found the C-Tech Club helpful as she comes to look towards international expansion. “At present, we have focused on the Polish and UAE markets, but we are starting to look to develop our services in parts of central Europe and North America and relationships from the C-Tech Club will help,” she says.

Australian start-up, Matrak, is also looking to expand internationally. The company focuses on tracking high-value items, such as facades, through the factory production process all the way to delivery to site. Ineke Bulle is planning to relocate from Melbourne to Europe in the late summer to drive growth. She says: “The opportunity to meet and connect with construction technology entrepreneurs from all over the world is really helpful and the C-Tech Club is unusual in being one single global community.”

With digital disruption in construction only set to accelerate, the C-Tech Club appears to have found its niche in bringing together some of the entrepreneurs who are at the cutting edge of technology.

To find out more about the C-Tech Club, visit [www.c-techclub.org](http://www.c-techclub.org).



On site with a worker from C-Tech Club member, Openspace.ai.

# Great minds don't all think alike

With 15% of the UK population classed as neurodivergent, *Krystian Groom* looks at some of the key challenges and opportunities for community engagement activities.

The starting point for all consultations is to define the communities to be consulted. Beyond the obvious questions of catchment areas and residents directly affected by the proposals, come the trickier issues of demography and special interests. It is simply best practice to ensure your communications address the hard to reach and open a dialogue with the diverse demographic and sectional groups that make up a ‘community’.

That said, how many people reading this article would have included neurodiversity as a key thing to consider when planning a consultation? How many people even know that over 15% of the UK population are neurodivergent or what neurodiversity means?

Neurodiversity reflects the diversity of all human brains. It includes people with dyslexia, autism, ADHD, and dyspraxia, amongst other neurological conditions. Being neurodivergent presents particular challenges and opportunities for community engagement activities. Contrary to popular belief, great minds don't all think alike and when we plan community engagement events, we need to recognise this. Failure to address this can mean neurodivergent people – and their contribution – being excluded from the already overly-complicated and highly technical infrastructure planning process.

Recognising the importance of engaging with this 15% of every community led BECG to lead a working group of planning professionals to deliver the *Neurodiversity in Planning* –



**Krystian Groom** is an associate director at specialist communications consultancy for the built environment, BECG.

*Engagement Toolkit*, launched in spring 2021. Alongside BECG, the working group included Jenny Offord (Neurodiversity in Planning), Jan Bessell (Strategic Planning Adviser, Pinsent Masons), Rebecca Skinner (Senior Development Manager, Mount Anvil) and Paul Kallee-Grover (Group Planning Director, Leith Planning Group). The group also sought input from an array of neurodivergent voices and neurodiversity experts such as Genius Within, in producing the toolkit.

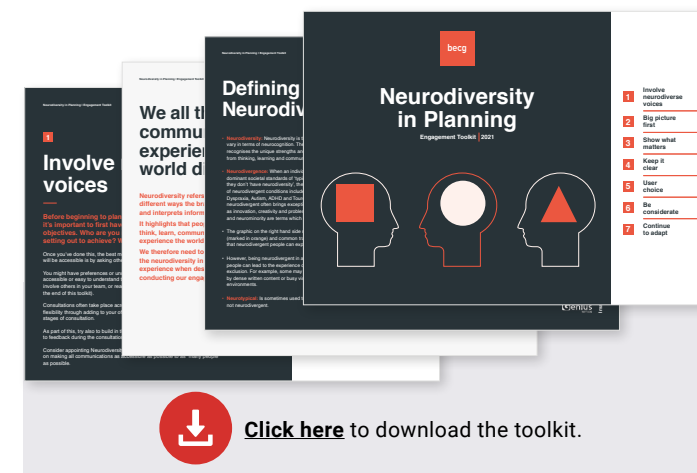
The toolkit provides seven principles:

1. Involve neurodiverse voices, 2. Big picture first, 3. Show what matters, 4. Keep it clear, 5. User choice, 6. Be considerate, 7. Continue to adapt. These principles help us to make planning consultations accessible to a neurodiverse audience and allow the neurodivergent to influence and contribute to planning in a way that suits them, rather than what is easiest for industry professionals.

The seven principles are designed to be simple, clear, and applicable in a wide range of circumstances. Our toolkit offers practical advice - from small changes which can have a huge impact for individual participation through to ideas to broadening access for all. Hopefully, our toolkit will be the start of a conversation that will help to inform changes in planning and how we engage with all parts of a community.

We're pleased to say that the toolkit seems to be being generally well received across the industry and beyond. This includes the Planning Inspectorate and the Ministry of Housing, Communities and Local Government showing an interest in it.

We all know that in progressing a development consent order, we're working within a legislative framework that sets standards for consultation and inclusion. This is all the more reason to specifically consider neurodiversity when planning and delivering your engagement for any infrastructure project.





# Going digital means contracts need to change

Construction professionals gathered in numbers on 21 May to discuss whether contracts need to change to help the industry deliver digital transformation. *Rob O'Connor* reports on The Big Contracts Debate.

When *Infrastructure Intelligence* and Atkins teamed up to organise a special online debate on the key issue of contracting models in the construction industry and whether they need to change to facilitate the industry's digital transformation, they probably didn't realise how popular the event would be.

The Big Contracts Debate event, *Is construction's digital transformation dependent on the introduction of new contracting models?*, was chaired by KPMG's partner for major projects delivery Lisa Kelvey and featured a panel of four leading industry experts who debated the issue before a live online audience of almost 500 industry professionals.

Arguing in favour of contracts changing were Dev Amratia, CEO and co-founder of nPlan and Richard Robinson, CEO of Atkins UK & Europe. Meanwhile in the 'No' corner were Keith Waller, programme director at the Construction Innovation Hub and commercial programme director at Highways England, Martin Perks.

Lisa Kelvey set out a clear picture for the debate: "The last year has been really challenging for the whole country – but the industry has shown we can change and adapt quickly when we need to, even though historically we've still been slow to adopt new technology," she said. "The government has set out ambitious plans to build back better and greener and to level up across the UK. So, more of the same just isn't good enough. It's time to make digital the backbone of the industry if future infrastructure is to be delivered efficiently."

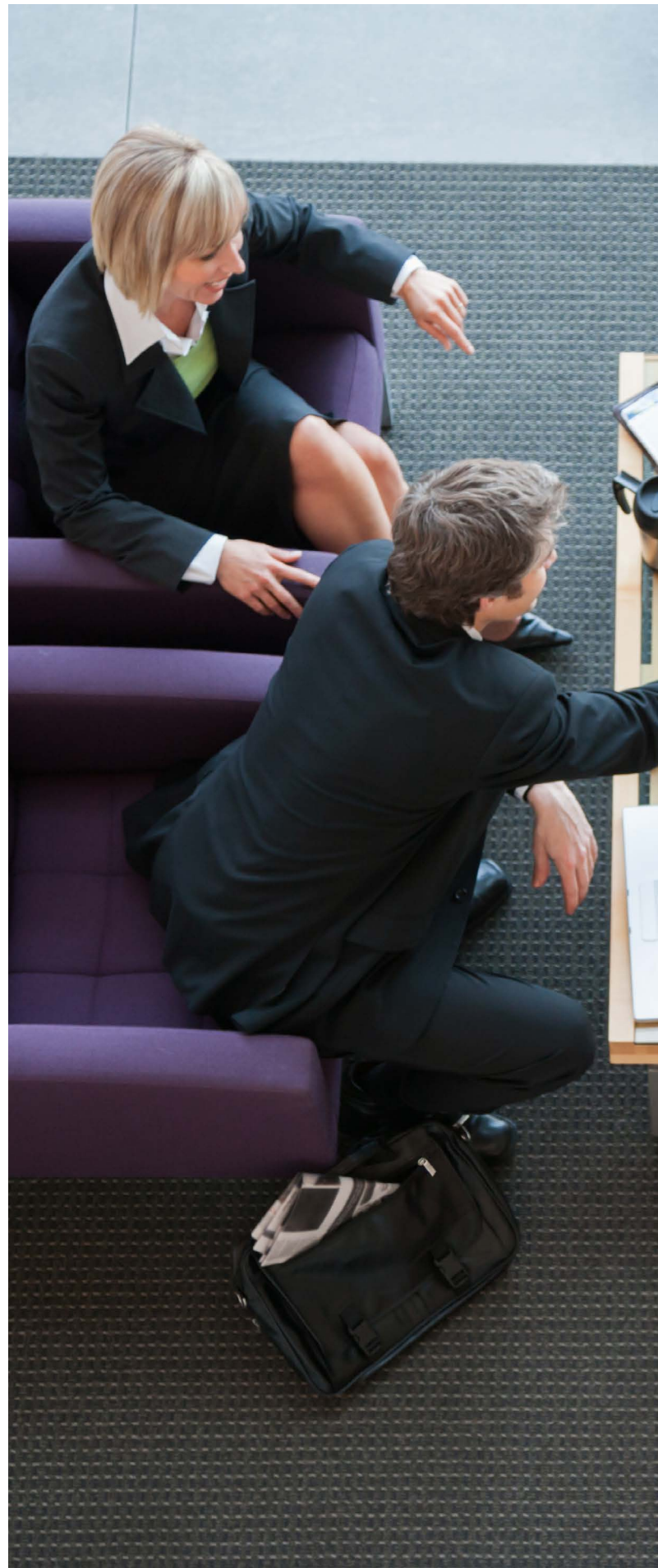
Arguing firmly in favour of a resounding 'Yes', Richard Robinson said that the industry couldn't go on doing what it had always done and expect things to change – and highlighted three key strategic areas where change was vital in moving the industry forward.

Firstly, he said: "Several well-respected studies have found that the industry's productivity has flatlined for over 25 years, while the wider economy has seen an improvement of over 30%. Specifically, another study in 2017 ranked construction only above hunting and fishing in terms of digital transformation – and the industry has fallen even further behind since then."

Secondly, he said: "A shift to contracting on value has to happen. Operating on just the current 3-5% profit margins does not enable the industry to capture the value it creates and is a major barrier to investment in research and development. Thirdly, Robinson said: "Digital and data is changing the game



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of traditional project boundaries, and current contracting approaches are simply not keeping up with this."

Summing up, Robinson said: "It doesn't seem credible to continue what we have been doing - we need to start contracting based on value and innovators need to capture the value that is created. Contracts don't support capturing data either and that needs to change. Why would we expect anything different if we don't change?"

Dev Amratia highlighted decades of industry improvement reports that had led the sector to a place where change was still being talked about but still not implemented. "All the reports into the future of construction said that we need to collaborate more, but we are not getting any better. So, we have to change. The Latham report made this clear back in 1994 and we are still talking about it. This is a tremendous opportunity to change – to capture better value and deliver better outcomes."

## Behavioural change is more important

Changing tack and arguing in the 'No' corner, Keith Waller used a road traffic accident analogy to highlight that behavioural change and human error were more important factors than relying solely on new technology or new contracting models.

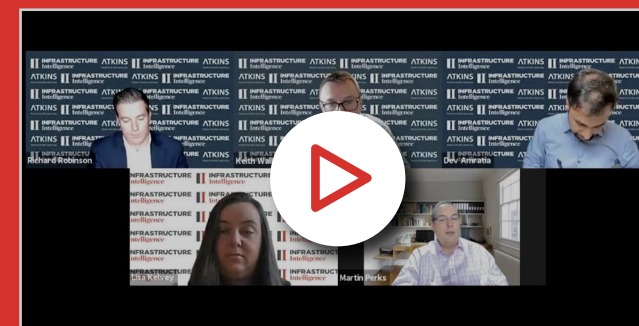
He said: "Only 1% of accidents were down to the car. We don't need to reinvent the wheel. Before we rush to blame the contracts let's look at the drivers – ourselves who use the contracts. We need to operate our contracts properly – we need the right behaviours and skills. If you keep crashing the car – you need help to drive. The clear truth is that it's the behaviours that counts and not the contract. Let's focus on changing those."

Also arguing for 'No', Martin Perks said it was all about human behaviours and that existing contract models were still fit for purpose. "All modern contracts recognise the need for digital," said Perks. "The real dependency is on the integrated project team's behaviour. It's behavioural. The dependency is the choices we make and what influences those choices."

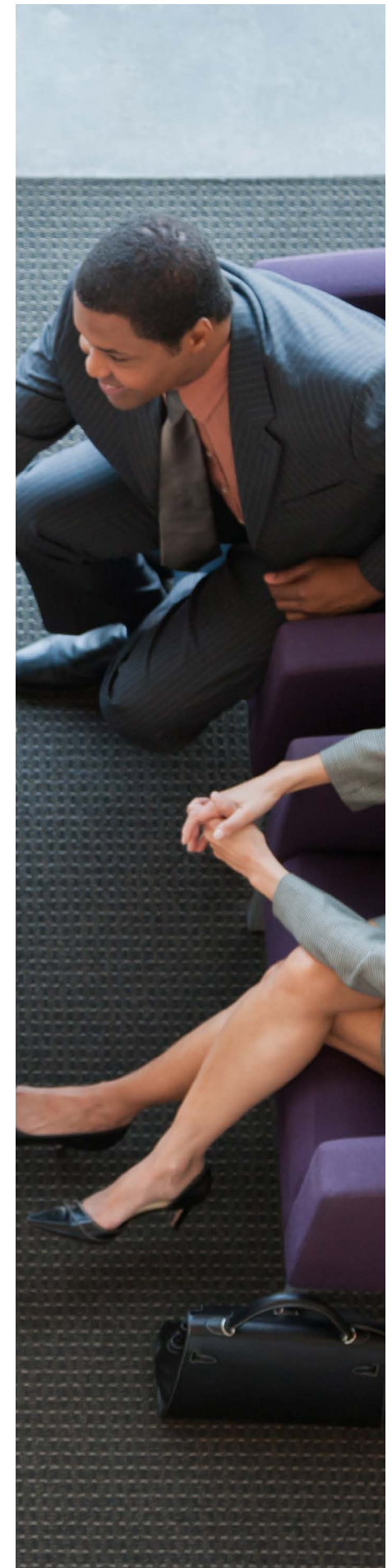
At the end of the event, the audience had its chance to have a say on the question up for debate – Is construction's digital transformation dependent on the introduction of new contracting models? They voted in favour of change by a margin of 58% to 35%, with the rest undecided.

*Infrastructure Intelligence* editor Andy Walker said: "We had more people registering to attend this event than anything we have ever organised and the number of questions that were posed was an indication of the massive interest around the key issue of digital transformation, contracts and industry change."

[Click here](#) to watch a recording of The Big Contracts Debate.



The Big Contracts Debate event was organised in association with **ATKINS**  
Member of the SNC-Lavalin Group





# City desk or spare room – or both?



As we exit lockdown, companies are asking themselves where does the future of work lie - city desk or spare room? Bentley Systems' *Mark Coates* sat down with Elizabeth Kavanagh of consultancy PCSG to discuss this pressing issue.

**I**n July, the government's working-from-home guidance is set to end. The UK workforce will be preparing to vacate the spare room, dust off its workwear, and re-acquaint itself with the train app. Or will it?

The year of working from home has prompted many organisations to rethink how we work. Accepted ways of working have been left looking outdated and organisations from the Bank of England to city blue-chips have waded into the debate around what the 'new working normal' will look like.

The lower quality of collaboration and communication that results from virtual working could damage productivity, the bank has warned. Others are confident that allowing workers flexibility around their working arrangements will support output in the long term.



**Mark Coates**  
is strategic industry engagements director for the UK at Bentley Systems.

I'm a personal fan of the hybrid model, with a 'two-day or four-day fortnight' where people work two or four days in the office over two weeks. However, I recognise that my opinion on the subject may say more about my own personality than what the industry should follow. That's why I spoke with senior people and change consultant Elizabeth Kavanagh to get her thoughts as to what the future holds.

We talked about the dilemmas of hybrid working and how to make remote working sustainable for the infrastructure sector. I began by talking with Kavanagh about the challenge of meetings where some participants were in the office and others joining from home. She explained how this scenario could play out.

"I think generally, we will all be considering whether and when an in-person environment is useful. For us, as a digital-focused business, remote work has felt pretty natural and our clients have embraced it. I see no reason why hybrid meetings shouldn't be accepted as something we do."

## The challenges ahead

We both saw two dilemmas facing us as we ease out of lockdown. The first is translating the benefits of home working into a hybrid model that capitalises on what we have learned through the pandemic. The second is around the skills gap and what impact new ways of working are likely to have on that. How essential is it now, for example, that workers are within a commutable distance, particularly if their role is digitally focused?

"A key lesson from lockdown has been that commuting takes our most precious commodity - our time," explained Kavanagh. "Throughout lockdown, we have had the experience of a world of work that forced most of us all onto the same virtual platform. One of the big benefits of this is that it felt like an equitable

playing field. So, the choice to work from home could be very attractive in itself and help us to recruit."

A testament to this thought is the evidence showing that the proportion of UK jobs advertised as "remote working" roles has more than quadrupled in the past year.

## Win-win?

From my own seat at the table and with attending multiple industry meetings virtually each week over the last 12 months, I have seen numbers and interaction grow within meetings. I have also seen a new level of openness and collaboration, which is all good. For some, home working has been a win-win. They are avoiding the commute, finding time to exercise and managing their caring commitments around working. But not all workers have embraced the change. Those in the 'living at work' camp have struggled with overwork. "There is a rise of digital presenteeism, where some have ended up feeling like they've been seat-belted into their chair for a long-haul fight," Kavanagh explained.

Through these lockdowns, we have learned that there is a value in socialising with our teammates which we missed out on. Perhaps this is where the true value of the office will lie as we move forward – as a place for collaboration, with the physical space better designed to reflect this.

## Moving forward

For me, the only way to motivate our teams and to sustain multiple generations in our workplace (with their different preferences for ways of working) is to offer the only employee



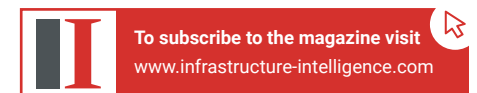
**Elizabeth Kavanagh**,  
PCSG's senior people  
and change consultant.

benefit that fits all - flexibility. To achieve that, we need to consider the practical steps and approaches to work that will allow it to happen.

Take those hybrid meetings we talked about. I predict the number one stressor will be the quality of interaction, the stepping on toes (or, in this case, voices) just to get your point across. We need to ensure that we maintain equitable ability to engage those in the room and those at home.

But how do we do that and how can we best run meetings with a part of the gathering physically present and part online? By defining the aims and outputs of the meeting, including who needs to contribute or make decisions and who needs to listen in. Comprehensive planning for the type of social interaction you wish to have will be key. The greater the level of planning, the more successful the meeting.

Above all, employers need to keep trusting their employees and recognise that, if productivity is consistent, the spare room and the city desk both have roles to play in our future world of work.





# Jargon-free guide to digital transformation

Explore the latest research from the Future of Consultancy campaign, the *Cutting Through the Hype* digital report.

Starting with the central idea that core discussions on digital transformation are essentially operational and behavioural issues, rather than technical ones, *Cutting Through the Hype* is an interactive report and five follow-up blogs from industry leaders exploring strategy, leadership, agility, capability and outcomes.

Taken together they provide a framework for people to take back to their own businesses and make appropriate decisions on technology and investment.

The five deep-dives will be published at ACE's website over the coming months and start with a blog on strategy from Jon Frost of BWB Consulting published alongside the initial report.

This will be followed over the summer with separate blogs on leadership by Steven Hale (Crofton Consulting), agility

[Click here to download the report, read the blogs, and find out more](#)  
Download the report, read the blogs, and find out more.

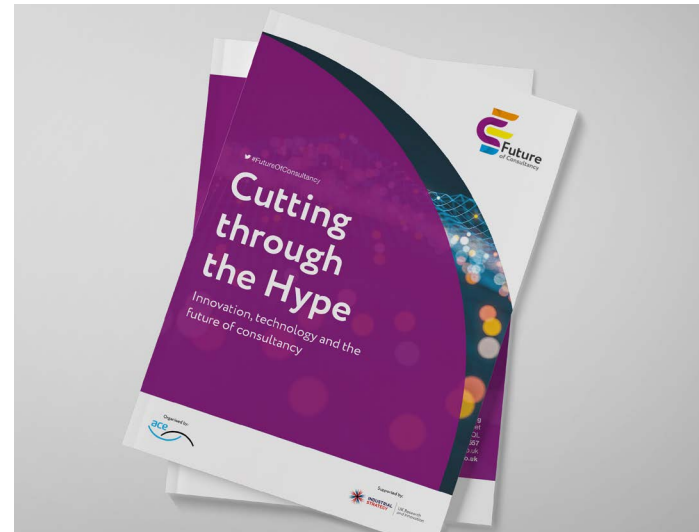
## Changes to ACE board and an interim CEO

Dave Beddell has been elected as ACE chair, while Laurence Brett joins as interim CEO.

Following the recent resignation of Paul Reilly as ACE chair, Dave Beddell was duly elected to the position at an exceptional board meeting.



Laurence Brett, interim CEO at ACE.



by Richard Shennan (Mott MacDonald), capability by Tony Westlake (Tony Gee and Partners), and technology and outcomes by Marzia Bolpagni (Mace).

Chair of the digital transformation group and group digital delivery director at Mott MacDonald, Richard Shennan, said: "It's an area with a lot of noise and bluster. It's easy to get side-tracked by noisy marketing campaigns, slick LinkedIn videos and the hundreds of industry experts competing for our attention. We wanted to create something that cut through this hype to the core of the issues – in simple terms, what are the steps needed to realise the benefits of digital transformation?"

Beddell, who was previously vice-chair, will assume office until the end of the calendar year whilst also continuing to oversee ACE's Voice of Consultancy workstream.

With a new chief executive unlikely to be in place before the autumn, the board has decided that both the ACE secretariat and members alike would all benefit from some additional support during the leadership transition.

The board has therefore agreed to appoint an interim part-time CEO, Laurence Brett, who will formally join ACE on Monday 12 July. He will spend two to three days a week working with the team and will be in place until a new, permanent chief executive joins later in the year.

Brett comes from AECOM where he is vice-president for global capability. Having held a number of executive posts during his 30-year career, he brings extensive experience of organisational leadership and senior stakeholder management.

Dave Beddell, chair of ACE said: "For the second half of the year, the focus is on maintaining our strong voice with policymakers, supporting members through to recovery, and seeing through ACE's annual plan. Added to that is ensuring a smooth leadership transition and I hope you'll join me in welcoming Laurence – however briefly – to ACE to help us achieve that."

# Showcasing the best of the consultancy sector

A new ACE campaign is aimed at changing 'out of date' perceptions of the consultancy sector from clients.

Consultancy 4.0 is a major new ACE campaign showcasing the changing offering from consultancies working in the built environment, based around data, expert insight and analysis.

Across four roles and 12 services, Consultancy 4.0 demonstrates how consultants have adapted to deliver in a

[Click here to explore the Consultancy 4.0 website now.](#)

changing world, why they should be considered as the "partner of choice" for both public and private sector clients and how best to collaborate to get the most out of any close working relationship.

The Consultancy 4.0 website aims to change perceptions of the industry with many clients simply unaware of what the consultancy sector now offers with many new services built on data, expert insight and analysis.

Showcasing the very best that the industry has to offer, the website demonstrates how ACE members are already delivering products and services across the entire life cycle of assets and working with clients in surprising ways.

Outlining how clients' understanding of consultancies may be out of date, the engaging web presence features a number of innovative case studies from ACE members showcasing their expertise and builds on previously released research, webinars and articles from the Future of Consultancy workstream.

## Deadline extended! #C&E 2021

Companies now have more time to enter this year's Consultancy and Engineering Awards.

The prestigious Consultancy and Engineering Awards, organised by ACE, return as an online ceremony on 16 September 2021.

The event celebrates the outstanding people, teams and projects from the world of consultancy, engineering and the built environment, in a new, virtual format. ACE is grateful to headline sponsors Bentley Systems and Griffiths & Armour for their support for this free-to-attend digital event.

The extended deadline for entries is now 14 July 2021. The ten categories in the awards are outlined below.



To find out more and enter now [click here](#)

### Categories

Best UK Consultancy (micro)

Best UK Consultancy (small and medium)

Best UK Consultancy (large)

Future of Consultancy Best use of Digital (sponsored by WSP in the UK)

Future of Consultancy Client Advisor of the Year

Net Zero Advisor of the Year (sponsored by Arcadis)

Inclusive Employer of the Year

Emerging Professional of the Year

Apprentice of the Year

Best pandemic response





# A bright future lies ahead . . .

In her final regular column for *Infrastructure Intelligence*, outgoing chief executive *Hannah Vickers* reflects on her time at ACE.

I am extremely proud of what we achieved over the last three years and I am leaving ACE certain that a bright future lies ahead for its members and the industry more widely.

The pandemic will probably be how most people choose to remember my time at the helm and I am rightly proud of how we reacted. We quickly developed a programme of ongoing support and guidance for members to help them navigate the stormy waters. However, given the enormity of what we faced in the spring of 2020, we knew only political support would help see us through a truly unprecedented moment in our history.

Engaging with the chancellor and working through the Construction Leadership Council, we built industry consensus for some solid wins for members – the introduction of furlough, the Construction Talent Retention Scheme – and planted the seeds of new ideas that are only now coming to fruition, such as the Levelling-Up Fund and National Infrastructure Bank.

I'm probably even more proud of the difficult work that ACE has achieved in starting conversations around the structural changes coming to the industry.

Firstly, by launching the Future of Consultancy campaign and later turning it into a core workstream, we have created a framework for the discussion of the future and how our businesses should deal with issues around changing markets, skills, and digital transformation.

It is often forgotten that none of this is easy! I know that it has sometimes been difficult to translate high-level thinking



**Hannah Vickers** was chief executive of the Association for Consultancy and Engineering until July 2021 and is now chief of staff at Mace.

into tangible action, and I'm sure that on more than one occasion I have got lost in intricacies around procurement, but thanks to projects like the recently launched Consultancy 4.0 – which among other things aims to act as showcase for the impact and ingenuity of the sector for clients – we are starting to turn this more conceptual thinking into practical member-benefit.

Furthermore, I'm delighted we've been able to ramp up our net zero work and are helping our members and their clients adapt to a new carbon free world. I am confident that this good work will continue through ACE and that members will be best prepared for the medium to long-term challenges our industry faces.

I would also like to take this opportunity to thank everyone who helped us achieve so much, starting with ACE's staff who deliver – day-in, day out – for the industry and its members, board members for giving up their time for the good of the sector and wider stakeholders for joining us as we aimed for big changes.

Finally, to our members for their ongoing support of ACE and recognising that we are stronger together than as one. Thank you and I look forward to us collaborating together in the future.

# Staying green is a political balancing act

Politicians would do well to bear in mind that the public's support for green measures cannot be taken for granted indefinitely, says *Matthew Farrow*.

It has been noticeable over the past year that on the rare occasions when Boris Johnson has not been talking about the pandemic, he has usually been making a pronouncement on tackling climate change. The net zero ten-point plan, the G7 commitments to phase out coal, the adoption of the Sixth Carbon Budget – just a few of the glad tidings the PM has been keen to share with us.

I'm sure No 10 has calculated that the environment is the sort of malleable issue that can be stretched and purposed to appeal to three key groups that the Conservatives need to keep, or bring, onside. First of all, young voters, where the party must improve its dismal ratings to preserve its long-term strength. Secondly, red wall voters where the pitch is the new manufacturing jobs that the 'green industrial revolution' will generate. And lastly, traditional Conservative votes in the southern heartlands, where the message is about protecting the green belt and improving habitats and biodiversity.

As political strategies go this is all reasonable stuff, but as the Amersham by election has shown, the strategy is easier to



**Matthew Farrow** is director of policy at the Association for Consultancy and Engineering and the Environmental Industries Commission.

articulate than it is to pull off. In areas like Amersham, the big picture boldness of the government's high-level green policies is of little interest compared to fears that the local picture will be one of unwanted housing development and HS2 construction and tunnelling works.

In the red wall seats meanwhile, the question will be whether the good quality manufacturing jobs in new green technologies such as electric vehicles, carbon capture and storage and offshore wind, materialise in the numbers and in the places where they are most needed. It's certainly possible, but whenever I hear politicians using the green jobs mantra to square difficult circles, I'm reminded of Adair Turner's quote "All we can safely say about green jobs is that there are as many jobs in a low carbon economy as in a high carbon one".

While we don't need to worry that decarbonisation will reduce long-term aggregate employment levels, it's very hard to predict with any confidence how the transition will affect particular regional labour markets and particular demographics. Ministers can always try to steer the job creation in green industries towards deserving groups – a factory grant here, a regulatory tweak there – but the risk is that resulting market distortions may make the already extremely challenging task of net zero even more of an uphill struggle.

There's always been a suspicion that Boris's environmental enthusiasm has been a flag of convenience. Despite this, I do think that the ambition around net zero has developed a level of momentum that is here to stay. The combination of a legal framework with regular milestones, the growing investor focus on future-proofing investments for a low carbon future, plus the media and political focus around CoP26, means that it will be hard for the government to suddenly change course.

A bigger threat to net zero is probably voter concern. As the recent Swiss vote rejecting stronger climate regulations shows, the public's support for green measures cannot be taken for granted.



The prime minister's environmental credentials will be tested in the months and years ahead.



# Biden's green challenge to US construction

US president Joe Biden is planning a multi-billion-dollar clean energy initiative. *John Fitzgerald* looks at the impact on the US construction industry and whether it can deliver.

**N**o matter how we face our current economic and social challenges, our future depends on reining in climate change. Joe Biden's clean energy initiative is in many ways a step in the right direction.

As green advocates have long suggested, eco-friendly legislation can drive business without restraining markets and Biden's plan promises infrastructure projects that create millions of jobs for skilled tradespeople, construction workers and engineers. With plans to invest \$2 trillion into infrastructure, housing, building construction and other projects, this initiative provides many opportunities for the construction industry.

A shift to green construction is inevitable and necessary, as building operations have been shown to cause 28% of all US carbon emissions. Embodied carbon also has a significant impact on our environment and represents 11% of greenhouse gas emissions globally. To compensate, building owners have expressed their desire to incorporate green construction techniques and to meet sustainability goals. In the largest markets, 13.8% of office buildings are green certified.



The US president made investment in clean energy a key plank of his election campaign.

However, if this is true, why do 55% of contractors believe a Biden presidency could harm the construction industry? As vital as climate-friendly policies are, the construction industry is grappling with rising material costs, a reduction in mega-construction projects and fewer skilled workers to hire. Without striking a balance between eco-friendly and business-friendly policies, forcing sustainability initiatives could deal a major blow to a construction industry that is already dealing with post-pandemic recovery.

## Time is money

Total construction spending rose 5% (\$667.9bn) in the first half of 2020, but prospects dropped dramatically as non-essential businesses closed during the pandemic. Many commercial sectors, like retail and hospitality and office space, are still

suffering, but the rising demand for life sciences facilities and data centres have helped boost construction activity. With more people working from home, the need for data centres should rise by 9% this year alone, while the push for a Covid vaccine meant life sciences firms needed 11 million square feet of new construction, an increase of 13%.

While the life sciences and data centre sectors continue to fuel construction demand, Biden's clean energy plan would create even more projects, including the green retrofitting of current buildings. In doing so, delays may be created on other sites, especially if green retrofitting jobs are being prioritised.

If labour were plentiful, projects could simply be staffed up to complete multiple commissions at once, but 90% of construction firms are concerned about labour shortages. And since clean construction projects require specific skills, and 57% of contractors are struggling to hire skilled labour, the manpower to deliver on both green projects and existing life sciences and data centre commissions on time just isn't there.

## Money matters

While green construction projects promise excellent long-term value, sustainable building techniques can often cost 1-2% more up front, on average, when compared to similar projects. Eco-friendly retrofits can cost up to \$7 per square foot. This rise in overheads, coupled with the increased costs brought on by labour shortages and Covid-19 safety regulations, presents significant challenges to project budgets and timelines. With the new push to buy American even as construction material costs are climbing, there are few ways for developers and contractors to drive down costs elsewhere.



**John Fitzgerald** is a project director at Linesight, specialising in project and cost management.

With the availability of retail and hospitality contracts not expected to recover until mid-2021, many contractors may take on more of the government's clean energy projects. While Biden has proposed additional funding and relief efforts, this may not be enough to offset his plans to raise corporate tax rates to 28% and to end the 1031 Exchange.

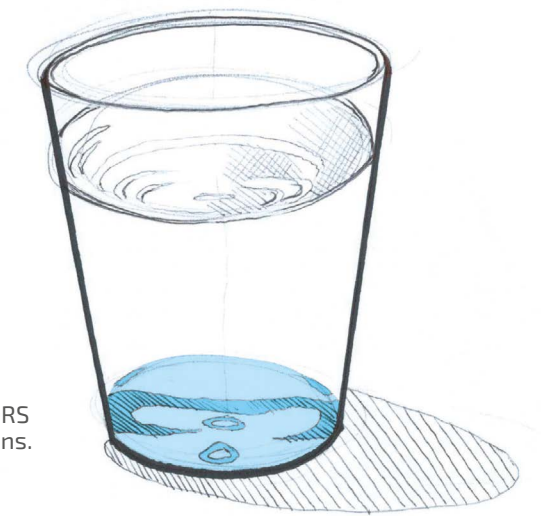
## Sustainability v survivability

With buildings and construction generating huge amounts of carbon emissions in American cities, it is critical to support sustainability initiatives and reduce the carbon footprint of construction projects. But while the economy is still struggling to recover from the pandemic and weather the recession, lawmakers must account for the needs of businesses when planning a green future.

In order to prepare for these impending initiatives, the construction industry should focus on implementing more sustainable building methods, while supporting strategic planning to increase efficiency across budgets and timelines.

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