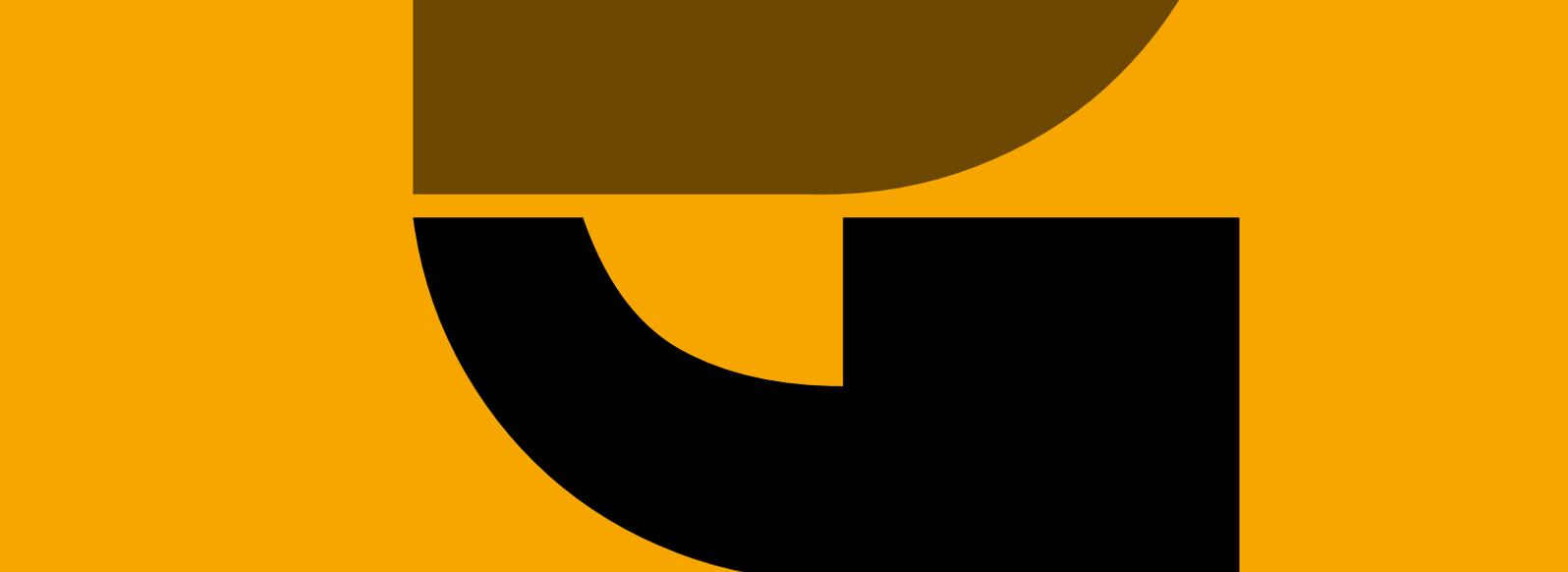


Using sustainability to strengthen your business

Output from a conference
hosted by Mott MacDonald at
Crypt on the Green, London EC1
on 4 November 2014

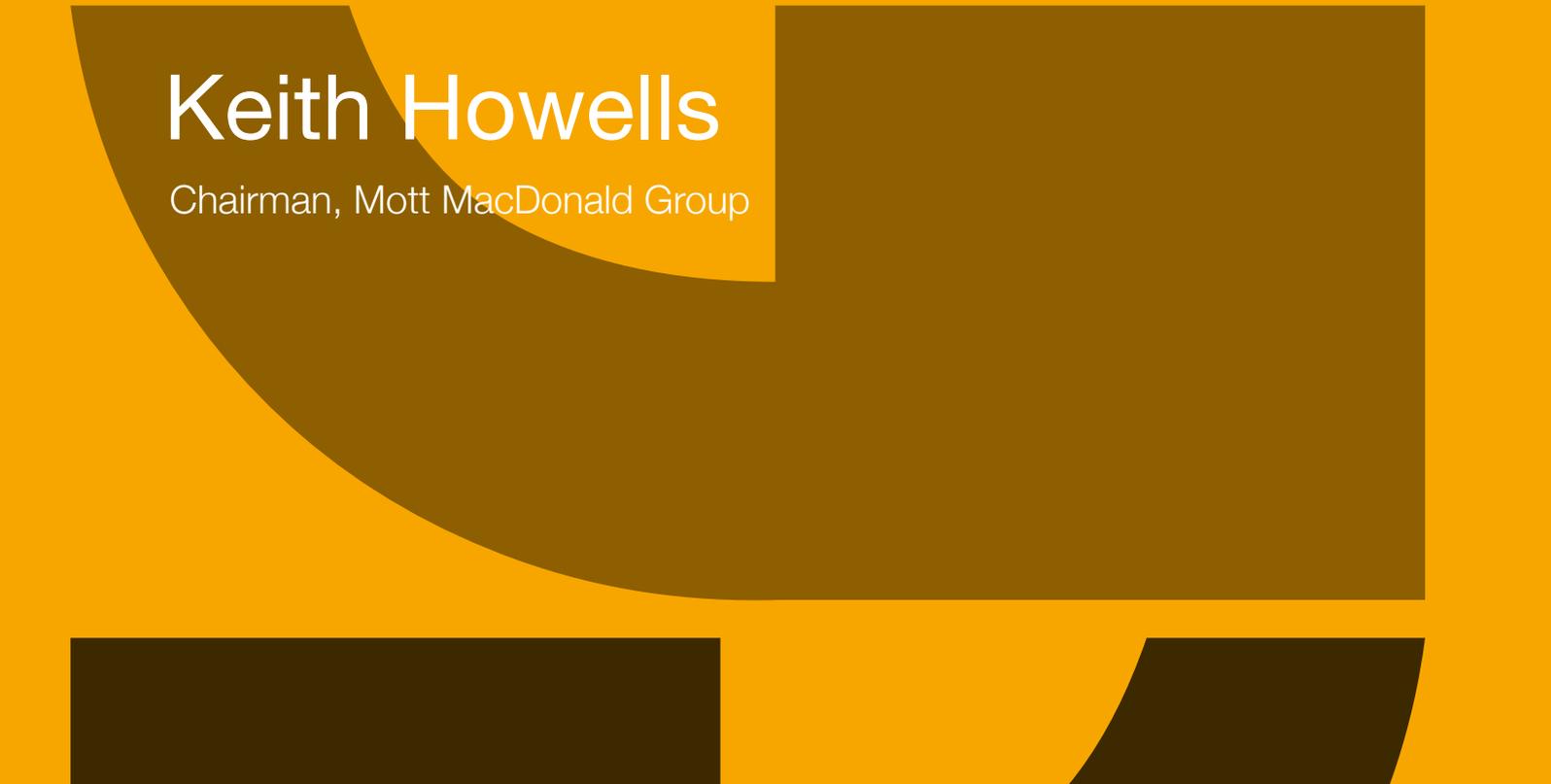




**“Sustainability
challenges
business as usual
and demands new
thinking.”**

Keith Howells

Chairman, Mott MacDonald Group



The world is under pressure from numerous directions – population growth, financial constraints, resource scarcity, social justice, climate change and ecosystem fragility. These are pressures that all businesses need to address. At the same time, it's clear that every decision we make has consequences – social, environmental, economic and reputational – that sooner or later impact us commercially.

Sustainability offers solutions to the pressures facing our businesses; and it offers the means to ensure that the consequences of our decisions are positive, value-adding ones.

In 2014, Mott MacDonald began an ongoing process of talking to clients about sustainability, asking about their ambitions and challenges. 17 themes emerged, with six standing urgently ahead of the rest – carbon reduction; climate resilience; emerging technologies; sourcing, procurement and supply chain management; social and economic development; and leadership – around which we structured an event on 4 November 2014.

Our research also revealed that many organisations believe sustainability is crucial for success but are struggling to know how to incorporate it into their business.

Bridging the gap between desire and reality requires leaders to interpret what sustainability means for their organisation, articulate its value to colleagues and staff, customers and suppliers, and stand accountable for progress and performance.

On 4 November we heard from speakers representing 11 major organisations who made clear that building a sustainable business is a long-term commitment and a journey. All also emphasised that, whether beginning or well into that journey, there is always further to go and new value to be won. Sustainability makes businesses stronger.

Thanks to all who contributed so candidly and generously to the conference.

Speakers

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>08 Cutting carbon to drive commercial efficiency
Rob Paris, Head of Sustainability and Consents, Crossrail</p> | <p>24 The commercial case for sustainability
John Lelliott, Finance Director, The Crown Estate
Will Oulton, Global Head of Responsible Investment, First State Investments</p> |
| <p>12 Assuring continuity in the face of climate change
Kate Avery, Climate Change Adaptation Specialist, Network Rail
Simon Woddy, Project Manager, Mott MacDonald</p> | <p>30 Strengthening financial performance by adding social and economic value
Matt Gorman, Sustainability and Environment Director, Heathrow Airport
Laura Russell, Sustainability Manager, HS2 Ltd</p> |
| <p>16 Transforming performance with emerging technology
Max Brown, Smart Roads Lead, Highways Agency Network Services</p> | <p>34 Embedding a culture of sustainability leadership
Ramon Arratia, Sustainability Director for EMEAI, Interface
Dale Evans, Director of the @one Alliance, Anglian Water</p> |
| <p>20 Using sustainable procurement to improve your bottom line
Jon Kirkpatrick, Head of Sustainability, Lend Lease
Jennifer Clark, Director of Environment, Skanska</p> | |

Bridging the gap between desire and reality requires leaders to interpret what sustainability means for their organisation, articulate its value and stand accountable for performance.

“Many of the best-performing companies have gained their edge with the aid of a secret strategy, sustainability.”

Davide Stronati

Group Sustainability Manager, Mott MacDonald

Sustainability makes you more innovative, more efficient, more resilient and more competitive. This was the recurrent message delivered by some of the biggest, most commercially astute organisations in the infrastructure business at the half day conference hosted by Mott MacDonald chairman Keith Howells in London on 4 November.

When client organisations Anglian Water, Crossrail, The Crown Estate, Heathrow Airport, High Speed 2, Lend Lease, National Grid and Network Rail, global asset managers First State Investments, contractor Skanska and manufacturer Interface stand up and tell you that sustainability is fundamental to their success, you need to sit up and take note. Each company told a different story but there was a consistent point: sustainability is good for business.

Speakers highlighted four ways in which sustainability can be used to strengthen performance.



Cut carbon to cut cost.

Capital and operational carbon are proxies for natural resources and energy use, and therefore cost. Designing to minimise whole life carbon will automatically produce an asset that is less expensive to build and run. It's a simple equation. And there are wider benefits as low carbon projects tend to employ construction techniques that make them safer to deliver; because they are using fewer resources there is less road haulage, noise, vibration, air pollution, and so on.

Use new technologies to enhance performance.

With increasing frequency, technological innovations emerge that enable the creation of new customer services or radical alternatives to conventional solutions – for example, by increasing the capacity, service life or safety of existing assets. The challenges are in accepting the new, understanding the potential threats and opportunities, determining how and when to invest, managing the risks, and communicating with staff and customers to bring about behavioural and cultural changes that enable the full potential of the technology to be realised.

Understand your vulnerabilities.

To meet the needs of a growing and more demanding population, delivering ever better service quality and reliability at an affordable price, infrastructure systems are becoming increasingly sophisticated and interdependent. Our changing climate is placing unprecedented strain on infrastructure. To minimise risk of cascade failures and profound business disruption, it is vital to understand vulnerabilities and interconnections, protect where it is cost-effective to do so and, where you can't, plan to fail safely and recover quickly. Assuring business and service continuity in the face of climate change requires new cross-disciplinary, inter-company and inter-agency relationships to be built.

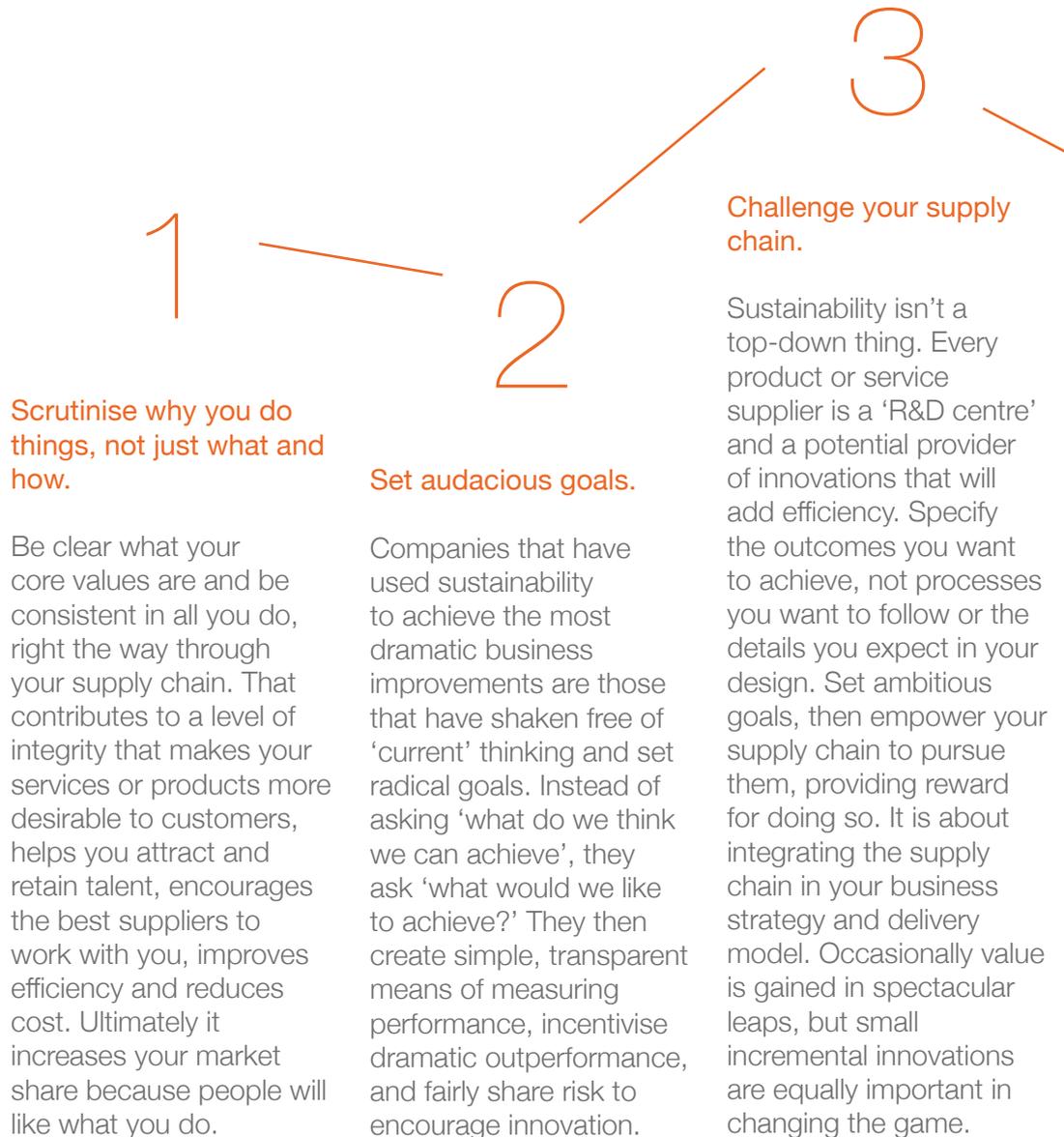
Develop stronger schemes by adding social and economic value.

Creating opportunities for and access to employment, entrepreneurialism and trade, healthcare and education, travel and leisure; stimulating local regeneration and economic growth; promoting safety, health and wellbeing – these are some of the measures of value that are now being used alongside traditional cost-benefit assessment criteria. Capturing this value can dramatically alter public attitudes and investment decisions, unlocking funding that would conventionally be denied. Modifying scheme designs or business plans to deliver enhanced social and economic value is frequently cost-neutral or cost saving.

Why aren't more companies doing these things?

Sustainability pushes us out of our comfort zone, requiring critical self-analysis and integrated thinking. It challenges the status quo and requires future scenario planning – something that our industry is not good at. Driving sustainability to strengthen a business can involve difficult decision-making, not always based on evidence but often on gut-instinct. Visionary leadership is needed at the top of the organisation to empower new thinking from the individuals within it.

Speakers at the conference offered the following wisdom:



Visionary leadership is needed at the top of the organisation to empower new thinking from the individuals within it.



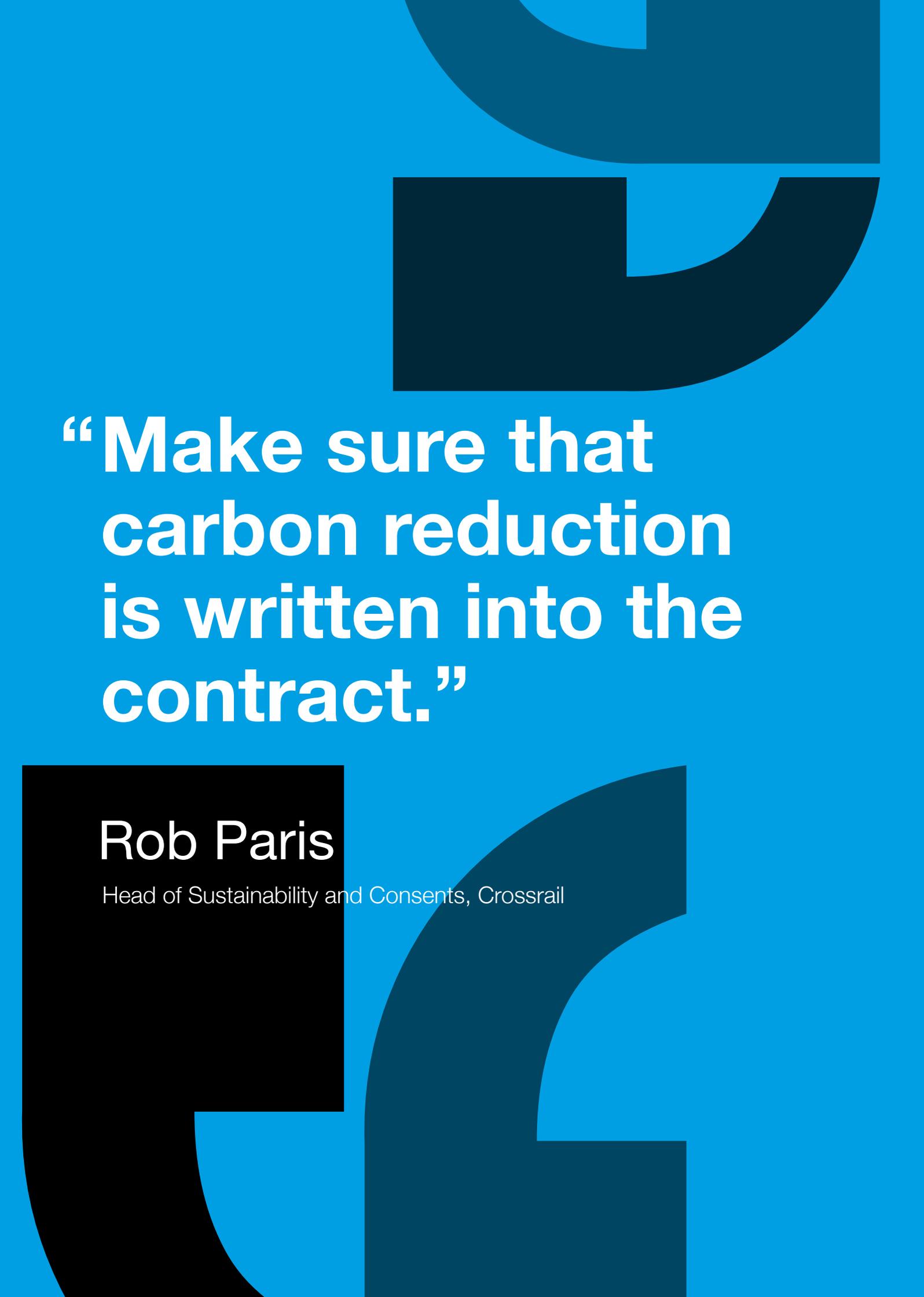
Integrate sustainability into business strategy and execution.

Sustainability is all about integrated thinking – opportunities, interconnections, risks, solutions, impacts. It improves efficiency, productivity and value. It supports and enhances the governance systems most companies already have in place. The organisations that have used it to strengthen their businesses have aligned their values, mission and goals with sustainability.



Use sustainability to enhance your market credibility.

Investors are looking for transparency and responsibility in the way companies are managed. Sustainability is an indicator of good stewardship. Companies that score high for sustainability outperform those that score low – they achieve better growth and profitability – and can borrow capital on better terms. Sustainability is therefore something that every chief financial officer should embrace.

The background features large, stylized letters 'E' and 'A' in a dark blue color, partially visible at the top and bottom of the frame. The main text is white and centered.

**“Make sure that
carbon reduction
is written into the
contract.”**

Rob Paris

Head of Sustainability and Consents, Crossrail

We have embedded a culture of sustainability in the £14.8bn Crossrail mega project. Energy saving and corresponding reductions in carbon emissions are among 28 key performance indicators that we use to track performance of the scheme.

Crossrail will provide a new high frequency, high capacity rail service linking Reading west of London with Shenfield and Abbey Wood to the east. Existing railway corridors are being used on the surface sections of the route, either side of 21km of twin tunnels beneath central London.

The project has used eight tunnel boring machines and currently employs over 10,000 people working across over 40 construction sites. Capital carbon emissions associated with construction are predicted to be 1.7Mt CO₂, some 15% of Crossrail's whole life footprint (operating Crossrail's 40 stations and 24 trains per hour in each direction through central London during the peak is expected to account for 85% of the whole life emissions).

Efforts to predict the carbon footprint for construction and operation started in the build-up to producing the scheme's legislation, the Crossrail Act 2008. The journey started with the environmental statement that accompanied the Crossrail Bill, but subsequently carried on into development of the project's environmental management system and sustainability strategy.

The crucial period for sustainability or indeed any requirement is during the drawing up of the main contracts. It was at this stage that the requirement for energy reduction was set. On contract award Crossrail consulted with its Tier 1 suppliers to agree a construction energy saving target of 8% compared to the 'base case'. From the start of construction, performance against this target has been reported regularly to Crossrail's Sustainability Committee and, as one of the 28 KPIs for the project, is linked to remuneration for senior managers.

We have established a carbon working group involving Crossrail and principal members of our supply chain that shares and promotes best practice and seeks to identify opportunities for further reducing carbon emissions. The results so far show that the project is on course to meet its 8% capital carbon reduction target and is currently achieving approximately 10%.

Operational energy and carbon are being driven down by specifying energy efficient lifts and escalators, and the use of LED lighting in tunnels and stations. But the greatest reductions have come from setting targets for rolling stock energy efficiency and mass during procurement. Highly efficient electric trains will operate across the route. Modelling shows that resulting operational energy savings will pay back Crossrail's capital carbon in seven to 13 years.

**£1.9
MILLION**

Projected cost saving to date, allied with 8% capital carbon saving





Crossrail set a capital carbon reduction target of 8% against its base case design and to date has achieved 10%. Carbon performance is linked to remuneration for senior managers in Crossrail and its Tier 1 suppliers.

“The challenge is to understand how weather resilience will change, and what investments are required to maintain levels of safety and performance.”

Kate Avery

Climate Change Adaptation Specialist, Network Rail

Climate change brings a new dimension to strategic decision making for Network Rail. Extreme flooding during the winters of 2012/13 and 2013/14 showed how vulnerable rail infrastructure can be and the scale of the challenge in making them resilient.

We have a lot of assets and many are vulnerable in some way to many types of weather-related hazards. We are developing our understanding of how that asset vulnerability may change, and considering stakeholder expectations of what a climate resilient rail network looks like in future. A task is to take climate change projections, understand what that could mean in terms of weather events and inform effective investment decisions to improve resilience.

In many cases, identifying solutions to increase resilience will require collaborative decisions with a range of stakeholders. Working in partnership with local authorities, national environment agencies, and other infrastructure operators will be a key element of adapting to climate change.

Flood resilience investments in the Western Route from London Paddington through Reading and Bristol into Somerset, Devon and Cornwall are a good example of this. Solutions are being designed for a number of sites to reduce flood risk.

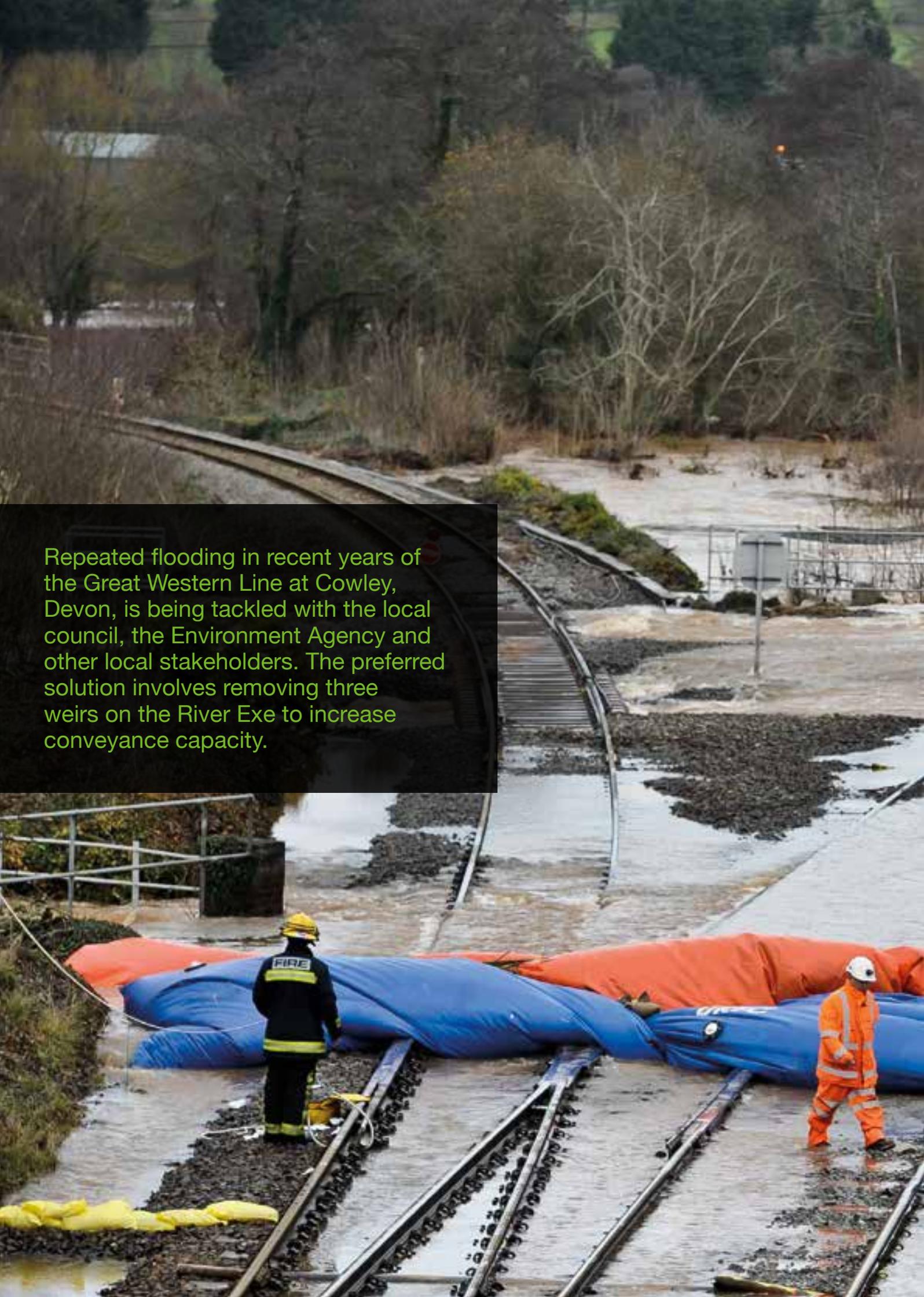
One key site is Cowley Bridge, north of Exeter. Here it is proposed that weirs be removed, culverts modified and sediment cleared to increase capacity of the river network. This meets the Environment Agency's aims of returning watercourses to their natural state.

This is about business continuity, getting the maximum possible return on investment and collaborating with other agencies to take a strategic approach. We're working closely with the Environment Agency, the Met Office and other organisations, using prediction technology to get site-specific data on the severity of weather events likely to occur, so we can make sensible decisions on how to cope with them.

This is about business continuity, getting the maximum possible return on investment and working in collaboration with other agencies to take a strategic approach.

Simon Woddy

Project Manager, Mott MacDonald



Repeated flooding in recent years of the Great Western Line at Cowley, Devon, is being tackled with the local council, the Environment Agency and other local stakeholders. The preferred solution involves removing three weirs on the River Exe to increase conveyance capacity.



**“Technology will
present new and
better ways of
managing road
networks in the
future.”**

Max Brown

Smart Roads Lead, Highways Agency Network Services

Radar detection, infra-red CCTV and data gathered from on-board navigation devices – all are within the technological arsenal that the Highways Agency is deploying to manage its strategic road network more sustainably.

In 2014 the Agency celebrated 10 years since the introduction of Traffic Officers, staff with statutory powers for directing traffic. This marked a crucial turning point in our transition from road builder to network operator. Adoption of technology has been central to this change.

The main aim is to add capacity and reduce congestion by making existing roads work better. This is a fundamental feature of our Smart Motorway programme, which began life in the 1990s with the introduction of ‘controlled motorway’ technology on the M25. Gantries spanning the motorway carry variable mandatory speed limit signs to regulate traffic flow.

From there the approach has evolved. Controlled motorways are still operational, but starting on the M42 in the West Midlands in 2006, ‘hard shoulder running’ was introduced as the next step. The hard shoulder is used as an extra lane during times of peak traffic flow along a very heavily used stretch of the M42. Gantries give drivers information while refuge points at 500m intervals provide places to stop in an emergency. Hard shoulder running is overseen by Traffic Officers monitoring traffic flow via roadside sensors and CCTV cameras.

Sustainability benefits – beside a reduction in congestion – include reduced costs. Hard shoulder running has been found to cost only half as much as the equivalent length of motorway widening. Better control over vehicle flow and speed has achieved a reduction in vehicle emissions. Safety has been improved: During the 10 years since ATM was introduced accidents and injury rates have reduced. This has led to the roll-out of ‘smart motorways’ (formerly ‘managed motorways’).

The latest variation of smart motorways, opened on the M25 in April 2014, is called ‘all lane running’ (ALR). Hard shoulders are converted to a permanent running lane. We have developed an innovative solution which maximises the use of our asset.

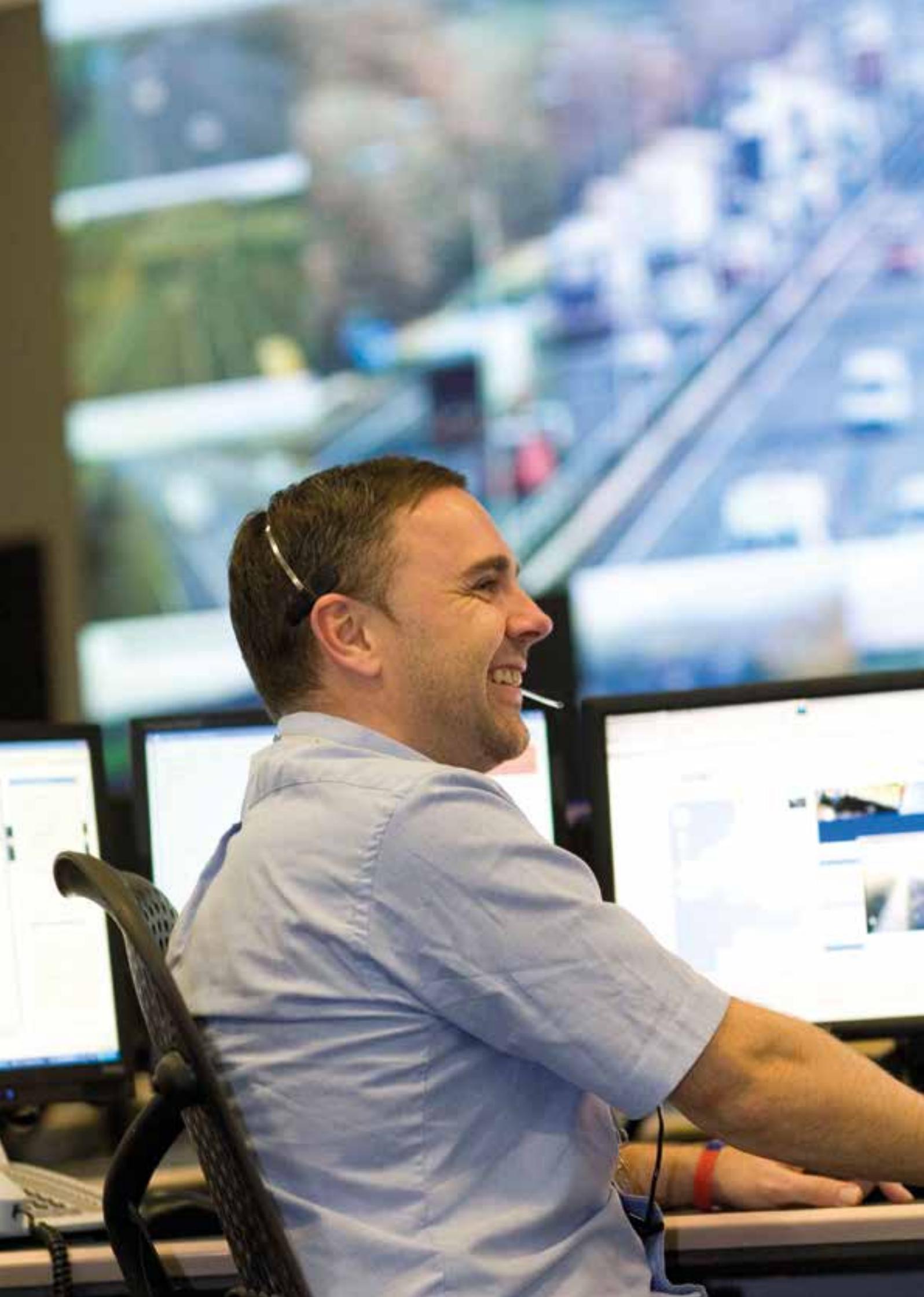
Through risk analysis we have demonstrated that overall safety performance will be maintained on what are already some of the safest roads in the world. Fewer refuge areas and cantilevered gantries spaced further apart produce the same benefits of safety and traffic flow, but with further reductions in cost. ALR has been installed at around a third of the cost of motorway widening.

70% SAVING

All lane running costs only a third as much as motorway widening

Increasingly, effective management of networks relies on building intelligence to allow anticipation of exactly when, where and why traffic will build to critical levels. Infra-red CCTV, radar detection and ‘floating car data’ – millions of positional signals sent by in-vehicle smartphones, sat-nav systems and other devices – enable this.

Getting more information into vehicles’ dashboard computers and sat-nav systems is part of our longer term aspiration. We are looking at new ways of tackling congestion. Technology will present new and better ways of managing road networks in future.





All lane running provides approximately 25% more route capacity using existing assets. Robust information and communications technologies are used to monitor traffic and detect vehicle speed and spacing. Automated variable speed limit signs, overhead message signs and full CCTV surveillance of the motorway and emergency refuges are used to control traffic and manage the route safely.

**“Sustainability
allows us to attract
and keep talent.
And it encourages
the best suppliers
to work with us.”**

Jon Kirkpatrick

Head of Sustainability, Lend Lease

Scrutinise why you do things, not just what you do and how you do them. Lend Lease's 'why' is to build fantastic places – houses, offices and urban spaces that people enjoy living in and using, that perform really well, and that last.

The goal of creating fantastic places shapes the way projects are delivered and brings responsibilities that extend beyond the site hoarding. We don't accept bad working practices on site, so why should we when we're procuring timber, concrete or steel? We are scrutinising safety, worker welfare, resource efficiency, waste and wider social and environmental sustainability in our supply chains. Sustainability has been embedded in our core principles and culture. We have further to go in driving it through the supply chain, but we're well into the journey.

Our commitment enables us to say with confidence about the places we create 'this is fantastic through-and-through' – and that has very tangible commercial value. It contributes to level of integrity which makes our real estate more desirable. Conversely, weak links in the supply chain have the potential to harm Lend Lease's reputation and dent sales.

Lend Lease is focused on process, not just products. In the manufacturing sector, perfecting a mass-produced product is practical. By contrast, buildings are all one-offs – even those that look near identical. As a sustainability practitioner it's difficult to focus on improvements to something that's always changing. But we can drive sustainability in terms of process, which we can check, monitor and improve.

Embedding sustainability in procurement makes sense to Lend Lease for other reasons too: It improves efficiency and reduces cost. Sustainability is a decisive factor in the jobs market. It allows us to attract and keep talent. And it encourages the best suppliers to work with us.

Growing market share, a strong order book and a resilient procurement pipeline show that sustainability is working for customers, staff and suppliers: People like what we do.

Sustainability throughout our supply chain makes our real estate more desirable. Conversely, weak links have the potential to dent sales.

“We’re driving sustainability as a core principle because it boosts our bottom line.”

Jennifer Clark

Director of Environment, Skanska

Skanska is a major contractor with over 5000 suppliers. Around 80% of our revenue is spent through our supply chain; 65% of it goes to SMEs. To reap the benefits of sustainability, we need to engage these companies and align them with our vision.

Often people think that sustainability costs more. But the reality is that it adds to the bottom line.

Skanska has established sustainability as a core value, incorporating it into company policy and operational procedures. And we communicate that message to our suppliers.

You have to challenge the supply chain. We set a standard that suppliers are expected to meet – it's a condition for working with us. Contracts are awarded on the basis of a balanced score-card system including a number of scores related to sustainability. Companies that do not score highly may not be selected for a particular contract, but they are not rejected permanently. We manage our supply chain performance, working with them to help them to improve.

Skanska also recognises the potential value that its supply chain can add: We work with over 5000 potential innovators. We get our suppliers involved in projects early on so that we can listen to them, invite new ideas and support them. This is what adds value to bids and project delivery.

An online Supply Chain Sustainability School initially set up for Skanska's suppliers to use, has taken off as a joint training resource including our competitors as well. The school, which is run by an independent not-for-profit organisation, now has 6000 members from over 40 different

+5000

Number of potential sustainability innovators in Skanska's supply chain

The company has established a Green Solutions Awards scheme with its supply chain – getting over 250 new, greener, construction products or systems from it so far. A site 'swap shop' has been set up for exchanging or finding users for surplus materials and equipment.

contractors. The Supply Chain Sustainability School is just one example of collaboration between competitors that raises the game for everyone.

We're in the construction business to make money and be profitable. That means winning work and delivering what our clients want, at the same time as using finite resources wisely and building communities. Sustainability offers the means of achieving this.

“Too often, sustainability strategies are produced in isolation. We’ve made it a key part of all of our business strategies.”

John Lelliott

Finance Director, The Crown Estate

A reported profit of £267M from assets worth around £10bn puts The Crown Estate amongst the FTSE Top 50 companies in terms of scale and market value. The public sector organisation, which owns prime central London real estate, 139,000ha of agricultural land and forests, and the seabed around half of the UK coast, is also one of the UK's recent sustainability success stories.

Research has shown that most of the highest performing companies have embraced sustainability because it makes good business sense. This is what The Crown Estate has done.

For our new developments, achieving a BREEAM rating of excellent and achieving excellent energy efficiency attracts the best tenants and enhances rental value. Likewise, we believe in good place-making in our urban environments as it increases footfall. This makes our tenants happy and again increases rental income.

Across The Crown Estate's rural portfolio soil is a vital asset. We share with tenants the increased value from enhanced quality, including potential rent reductions. Conversely, poor land management and soil degradation are penalised.

The capacity of sustainability to add commercial value is recognised not just by The Crown Estate but by our tenants and partners too, who collaborate with us to improve performance. We proactively invest in sustainability in order to grow and earn.

Sustainability needs leadership; it's got to come from the top. We are fortunate to have a CEO, Alison Nimmo, who has made sure sustainability is at the core of our business strategy. The other person that has to be fully on board is the chief finance officer. CFOs need to realise the value that comes from sustainability.

We now have sustainability embedded in our business planning processes. Essentially, what it's about is integration. Too often, sustainability strategies are produced as an aside or standalone part of business. What we've done is make it a key part of all of our strategies. It's about joined up decision making and integrated reporting. Because sustainable businesses are successful businesses.

We proactively invest in sustainability in order to grow and earn.





The Crown Estate is increasing the value and productivity of its city centre real estate portfolios by making its buildings more energy efficient and by 'place-making', creating streetscapes that attract workers, shoppers and visitors. The result: higher footfalls and higher rental values.

“How a company manages its environmental and social impacts is seen as a long-term value driver for investors.”

Will Oulton

Global Head of Responsible Investment, First State Investments

Sustainable investment is sensible investment.

Infrastructure is an increasingly important part of institutional investors' portfolios. It is a long-term investment and the way assets are managed can add or destroy value.

First State Investments (FSI) is part of the Commonwealth Bank of Australia. We have assets worth over €110bn under our stewardship. FSI's duty is to keep a very close eye on the performance of our investments and ensure that the value of clients' capital is protected at all times.

Investors expect responsible asset management and effective risk mitigation, and the way that sustainability factors are addressed is a good indicator of this.

Evaluating the sustainability of assets to the highest standards possible is a crucial part of our investment process. My role is to help our investment teams integrate environmental, social and governance (ESG) research and analysis into their investment processes and to ensure that our clients' interests on ESG issues are understood, monitored and reported on. FSI recently won the 'ESG Implementation' category at the Financial News Awards for the integration of ESG practices in our investment processes.

It is very important for FSI's teams to align their thinking with that of their clients. Pension funds and other investors are looking for long-term stable investments that deliver their expected performance.

Reputational risk has become a very significant issue. We look at the quality of corporate governance, the business culture and the reputation of organisations. How a company manages and mitigates the environmental and social impact of its operations is seen as a key value driver over the long term. Sustainable investment is, quite simply, sensible investment.

“We have an important role in creating opportunities for employment and entrepreneurship.”

Matt Gorman

Sustainability and Environment Director, Heathrow Airport

Heathrow Airport is one of the UK's key assets and a big contributor to the national and local economies. Its contribution to the UK economy in terms of gross value added (GVA) is steadily increasing – it rose from £6.36bn in 2012 to £6.58bn in 2013 and the airport is aiming for £6.9bn GVA by 2020.

Growth and success as a hub airport are inseparable from environmental and social sustainability challenges. The airport's response is a tripartite plan, called Responsible Heathrow 2020. The main aims are supporting economic growth and investing in local communities, reducing environmental impacts, and looking after passengers and Heathrow's 76,000 employees.

These aims have been translated into 10 delivery-focused goals. Enshrined in the plan and goals is the principle of investing in the local community to strengthen Heathrow's skills and supplier base, creating local opportunities for employment and entrepreneurship in the process.

The airport has a very important role in supporting local businesses and contractors, but major projects have a national economic impact: The recently completed £2.5bn Terminal 2 (T2) project had a supply chain stretching across the whole of the UK.

The Heathrow Academy, which nurtures skills needed on the airport campus, celebrated its 10th anniversary in 2014. The Academy started as a retail sector enterprise, to help local unemployed people get their feet on the first rung of a career ladder at Heathrow. We've extended this to

76,000

Number of people working for Heathrow, more than half of whom are locally based

The 76,000 people working for Heathrow are employed by more than 400 different companies. In 2013, 54% of this employment came from areas touching Heathrow's perimeter: Hillingdon, Slough, Spelthorne, Hounslow and Ealing.

We have a comprehensive strategy for maintaining this.

construction and other sectors at the airport as well now.

Heathrow is also looking locally for supplies that conventionally would be sourced nationally, such as wood pellets for the new T2 biomass combined heat and power boiler. It's about looking at what you do and how you do it, to see if the local area can provide what you need as or more cost-effectively than traditional suppliers.

“HS2 will be a catalyst for urban regeneration, employment and economic growth.”

Laura Russell

Sustainability Manager, HS2 Ltd

The obvious effect of cutting the journey time between London and Birmingham by more than 30 minutes is a boost to business, leisure and tourism. This translates into economic growth and regeneration, which is how High Speed Two (HS2) – the new high speed railway between London, Birmingham, Manchester and Leeds – is being promoted.

The Hybrid Bill for HS2 Phase One from London to Birmingham is currently going through Parliament, with construction due to begin in 2018. The intended start of operation is 2026. Phase Two, taking two lines north from Birmingham to Manchester and Leeds, will follow.

Critics have said the project's environmental impact and cost (construction of Phase One is estimated at £21.4bn including contingencies) are prices not worth paying for the benefits of shaving minutes off rail times.

But HS2 is essential for rebalancing economic growth across the north and south of England; distributing wealth and development more evenly through better

connectivity. 85% of businesses report that quality and reliability of transport affects their choice of location. They don't necessarily want to be in London, but they want to be in easy striking distance.

HS2 Ltd is working to minimise the project's environmental and social impacts through good design, innovation and the use of environmental management systems, while looking to maximise the benefits that will come from the creation of new transport hubs.

Tangible benefits of HS2 will include new jobs. It has been estimated that HS2 will create 24,600 construction jobs during delivery and up to 100,000 new jobs in the wider economy.

Plans for a new high speed railway network across Britain have prompted the creation of the National High Speed Rail College near Birmingham, with a satellite site in Doncaster. The aim is to establish a pipeline of specialist rail engineers for HS2 and subsequent rail projects.

The premise is that HS2 developments north of London, in Birmingham and then onwards to Manchester and Leeds and stations in between, will create iconic locations for attracting retail and business. King's Cross in London used to be an area that few would want to spend time in,

100,000

The number of jobs HS2 is predicted to create in the wider economy

HS2 will be a catalyst for urban regeneration. In 2013, the HS2 Growth Task Force was set up to ensure we make the most of opportunities for commercial and business developments wherever a new station is built. They have set up a regeneration company to take this work forward. HS2 is working with local authorities and developers to create new public spaces and over-station developments.

but the reconstruction of that station and the nearby St Pancras rebuilt for HS1, has revitalised the area. The combined regeneration effect of HS1 on London King's Cross and Ebbsfleet and Ashford in Kent is estimated to be £10bn to date, with £3.8bn worth of wider economic benefits.

HS2 is looking to do the same. It's about squeezing the best value from every pound spent.

“Conventional thinking asks: What is technically feasible? The question should be: What do we want to achieve?”

Ramon Arratia

Sustainability Director for EMEA, Interface

In 1994 Ray Anderson, the chairman of global carpet tile manufacturer Interface, set the seemingly impossible target of eliminating all negative environmental impacts from Interface operations by 2020.

This is the company that invented the carpet tile to reduce waste and cut costs. 20 years after the ‘mission zero’ challenge was set, Interface has not yet reached its goal. But our European manufacturing operation is sourcing 95% of its energy from renewable sources; our absolute reduction in carbon emissions has reached 90%; no water is used in our manufacturing processes; and Interface is now sending zero waste to landfill.

Leadership has played a big part in Interface getting this far. The radical challenge appeared far-fetched at first, but it resulted in bold technological innovation. The problem with conventional thinking is it asks the wrong question: ‘What improvement is technically feasible?’ The best minds in the company will reply ‘20%’. Management will add a safety margin and opt for 15%. The question should be: ‘What do we want to achieve?’ To which the answer is ‘Nirvana’.

When we were challenged to achieve Nirvana, we found that a lot could be done.

Redesigning the product and its manufacturing process can bring great gains. The majority of the energy consumption goes into producing the raw material. We found we could redesign carpet tiles to be a lot more energy efficient.

Overall, these and other initiatives have reduced the unit carbon footprint of our carpet products from 63.3kgCO₂/m² to less than 6kgCO₂.

It was fairly easy to identify where the biggest carbon impact was

Interface does not view all this as a means to beat competitors in a corporate social responsibility beauty contestant. It is all about being more successful, with better products and processes. It’s not about being a bit less bad than the competition, it’s about using sustainability to cannibalise the competition. We’re out to do that.

It’s important to empower staff to tackle big, difficult challenges. Support innovation. Accept that eight out of 10 innovations will fail. It’s the two that succeed that will move your business forward.

MISSION ZERO

Interface’s target for net energy and water use, waste and carbon emissions

Interface has dramatically reduced waste by adopting ultrasonic cutting technology in place of die cutting. We have also moved to procuring energy from renewable sources and introduced recycled yarn as the raw material of choice.

using lifecycle analysis, which showed it was the production of the yarn. Every industry has its own elephant in the room; a problematic area it has to address in order to reduce its environmental impact. Our move to 100% recycled nylon carpet has been crucial. We redesigned our product and our processes to deliver sustainability.

A person wearing a grey t-shirt and yellow pants is kneeling on a blue carpeted floor, working with a large, tangled mass of grey fishing nets and ropes. The person's hands are visible, reaching into the mesh. The scene is lit from above, casting shadows on the carpet.

Ultrasonic cutting has reduced Interface's waste by 300t/year. Meanwhile, Interface has moved to manufacture yarns using recycled nylon, much of it sourced from discarded fishing nets.



“Innovation is delivered by our design and construction teams, but leaders have to create the right environment.”

Dale Evans

Director of the @one Alliance, Anglian Water

Leaders of Anglian Water's @one Alliance champion the cause of cutting carbon and cost, and have created the conditions for design and construction teams to achieve stretching targets.

Anglian Water is one of the leading players in the construction industry's push for carbon reduction. The company spends between £400M and £500M every year on maintaining and upgrading infrastructure. During the 2010–15 investment period Anglian Water set a series of 'big, hairy, audacious goals' – including a 50% reduction in the capital carbon associated with construction, a 20% reduction in the operational carbon emitted through operating new assets, plus 25% cost savings, all measured against a 2010 baseline.

Data gathered shows beyond question that carbon and cost are intertwined – low carbon projects use less materials and energy and therefore cost less. Anglian Water is driving for a 60% capital carbon saving against the 2010 baseline in the 2015–20 investment period.

The low carbon challenge comes from the top of the organisation, instigated by Chris Newsome the Director of Asset Management, and supported by leaders throughout Anglian Water and its delivery partner the @one Alliance – a collaborative organisation of six principal suppliers, including Mott MacDonald and Anglian Water itself.

Setting goals that take teams far outside their comfort zones is important. We could probably have delivered a 20% reduction in capital carbon by making incremental improvements to our existing day jobs. The 50% target made us think differently.

The Alliance has endeavoured to become a continuous improvement organisation, where teams are constantly focused on finding opportunities to drive performance.

Most of our carbon reduction is delivered on the front line by our design and construction teams. We're promoting collaboration across all parts of the supply chain to make changes and improvements – the drive for carbon reduction gained real momentum when the advances started being driven by our teams. But for this to happen the leaders of the organisation first had to create the right environment, one that enabled the teams to work in this way.

One of the important enablers of carbon reduction has been a grass roots network of 'sustainability champions' within the Alliance. These champions have led the drive for change, facilitated knowledge sharing and helped with dissemination of best practice. We have a waiting list of applications for these roles and the competition is tough. It's something that people want to get involved in.

50%

Big, hairy, audacious goal for capital carbon reduction, 2010–15

Another really important enabler is that the Alliance is asked to deliver outputs. Anglian Water specifies the performance it wants assets to achieve but not the solution or process by which they should be delivered. Engineers are encouraged to challenge conventional engineering specifications and find more effective ways to deliver the required outcomes.

The focus on carbon has been supported by Anglian Water and the Alliance creating a carbon modelling tool so that designers and suppliers can examine and select the most efficient design options. Carbon measurement has become a very visible part of our governance and performance structures.

The result over the last five years is that numerous new products, solutions and construction techniques have been developed to meet Anglian Water's requirements, all delivering carbon and cost savings alongside wider commercial, environmental and social benefits.

Using sustainability to strengthen your business

What are your goals?
What are your challenges?
How can we help?

Talk to our Group Sustainability
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