Collaborating on the journey to net zero

A BSI research report for the built environment industry

Contents

Foreword

Andy Butterfield, Managing Director, Global Built Environment, BSI

The sustainability agenda has been transformed for all businesses in the built environment in the past decade and there is now clear consensus that the journey to net zero is an issue requiring an industry-wide approach.

Yet there is currently complexity and varying approaches across the built environment life cycle.

From our conversations with the industry there is consensus that, to make progress on the journey to net zero, of the need for greater collaboration, and to leverage data and technology solutions for the benefit of effective-decision making and accelerated progress.

BSI is committed to supporting the built environment industry play its part in combatting climate change. We believe this will only be achieved by collaboration, sharing expertise and experience from initial design of a built asset all the way through to construction, ongoing maintenance and decommissioning. This approach recognises the importance of data and technology as the foundation for a more sustainable built environment.

This paper is a small step towards improved knowledge sharing, as we strive to partner with companies on the journey. Underpinned by our survey[1], with responses across the built environment life cycle in eight countries, we centre on perspectives from leading companies and experts globally. We're grateful to specialists from across the industry for providing valuable insights on our shared journey to net zero.

Report key contributors

- **Aurecon –** Jacob Hoare, Digital Lead, Asia and Adam Peacock, Building Structures Practice Leader
- **Balfour Beatty –** Joanna Gilroy, Sustainability Director, UK
- **Boustead Projects –** Muhammed Khalil, Deputy Director, Group Technology
- **CBRE –** Marcella Thompson, Global Head of Corporate Sustainability and Reporting
- **ISO Technical Committee Expert –** Dr Keyu Chen, CEO
- **Gensler –** Eduardo Ramos, Co-Managing Director, Mexico office
- **Kinenergy –** Hendrick Munoz, CEO
- **Mott MacDonald –** Eszter Gulacsy, Technical Director
- **National Taiwan University –** Shang-Hsien Hsieh, Professor of Civil Engineering
- **Obayashi Group –** Iida Kunihiro, Head of iPD Center
- **Roads and Transport Authority –** Dubai – Dr Salah Al Dilimi, Rail Infrastructure Maintenance Manager
- **WSP –** David Symons, Future Ready Innovation Leader

Research key findings

Progress towards net zero by the global built environment industry has been mixed – both geographically and across the built environment lifecycle – with a variety of challenges standing in the way of faster progress.

There is wide consensus that further industry collaboration – would help to accelerate the built environment industry's system-level journey to net zero.

17%
of respondents would progress at a pace dictated by government mandate, with the majority progressing faster

41%
of CEOs suggest industry collaboration could be improved

41%
of COOs cited a need for better procurement skills

64%
think they are using data well across the asset life cycle

59%
consider the supply chain well placed to support companies' net zero journey

44%
cite cost as a challenge to progress

62%
recognise the positive impact of standards

So where are they on the journey?

Governments and scientists around the world have made it clear that the journey to net zero must be a priority. It’s even more important for businesses operating in the built environment industry, whose emissions contribute to around 39% of all greenhouse gases – far higher than any other individual sector[2].

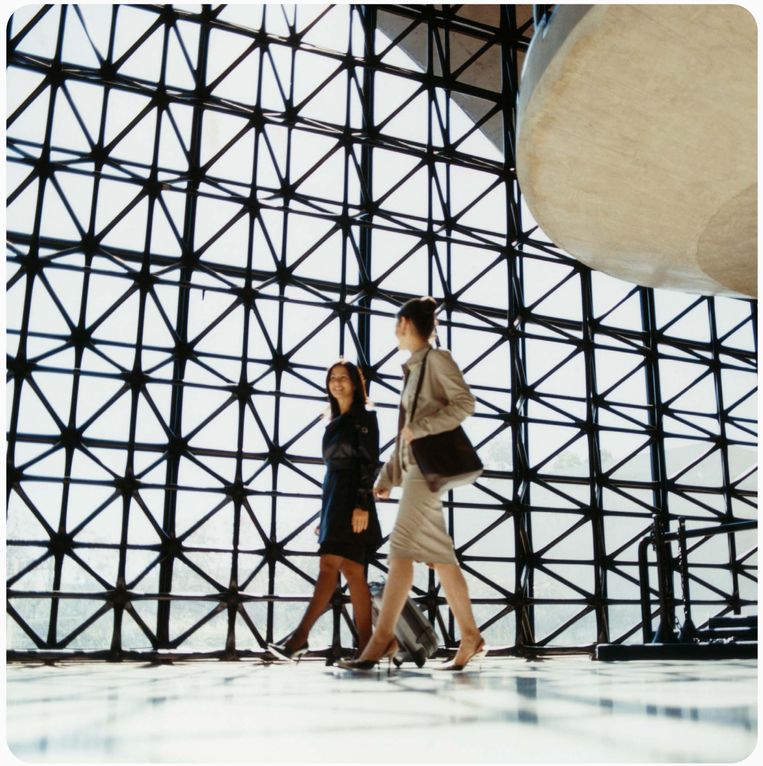
1. BSI ‘Built Environment Journey to Net Zero’ survey 2024.
2. As note 3.

Progress towards net zero

Our survey finds that, in general, the built environment industry believes it is making rapid progress towards the goal of net zero. 72% of participants globally saying the industry is adapting quickly to implement the measures needed to achieve it.

But (and this is evident throughout the survey), we find that overall findings often mask significant variations across regions and roles. For example, 94% of respondents in the UAE think the industry is adapting fast, compared with just 50% in China.

Eszter Gulacsy, Technical Director, UK, for global engineering consultancy Mott MacDonald, is not convinced. “The general consensus is that we’re behind where we should be,” she says.



“I think we can celebrate what we’ve achieved, such as clarity on decarbonization pathways. We know the levers to pull that will help us move the building sector. Now we need to pivot into action and accelerate.”

Marcella Thompson,
Global Head of Corporate Sustainability and Reporting at CBRE

For many, the answer is nuanced. Joanna Gilroy, Group Sustainability Director at international infrastructure group Balfour Beatty, sees the pace as “mixed, depending on where you are in the supply chain and the pressures that you’re feeling from either customers, investors or government.”

In Singapore, Muhammed Khalil, Deputy Director, Group Technology at real estate solutions provider Boustead Projects, describes progress as “steady, driven by multiple factors across the ecosystems.” He says notable state-backed initiatives there include the Singapore Government’s Green Building Masterplan, which targets 80% of buildings to be ‘green’ by 2030, and the Building and Construction Authority’s (BCA) introduction of schemes such as Green Mark certification to drive sustainable and green building designs.

Similarly, Obayashi Group in Japan formulated its long-term sustainability vision through to 2050 in 2019, as Iida Kunihiro, Head of iPD Center explains: “We set decarbonization as one of our targets for 2040 to 2050 in that vision. We have incorporated carbon neutrality into our business plan as a key theme of our management and are promoting concrete initiatives to realize this vision.”

Gulacsy also sees government action as a key differentiating factor: “In the UK right now, the question is, can the new government give things a boost?”

Hendrick Munoz, CEO of Mexican multinational engineering consultancy Kinenergy, observes that regional policies worldwide are not clearcut in helping companies on their net zero journey. “It’s very difficult,” he says. “We have to adapt for each country because there are a lot of different approaches, or they don’t have any approach.”

David Symons, Director of Sustainability in the UK for global engineering and environmental consultancy WSP, takes the view that, “There’s loads that we as an industry can do and influence ourselves, before we start saying it’s got to be policies and governments that must do all the heavy lifting.”

Our survey suggests that this is already happening, with the bulk of the industry planning action ahead of government requirements. Only 17% of respondents say they would progress at a pace dictated by government mandate.

Symons speaks for many in noting “some really great progress”. He continues, “It’s now completely routine that we measure carbon in our work. We’re thinking about building reuse and refurbishment rather than demolishing and starting again, we’re designing with heat pumps rather than gas boilers, and so on. So, let’s celebrate that progress, but also recognize that there is still a lot to do – and we have to do it faster if we’re going to deliver net zero by 2050.”

CBRE’s Marcella Thompson, Global Head of Corporate Sustainability and Reporting at CBRE, a global commercial real estate services and investment firm, agrees. “I think we can celebrate what we’ve achieved, such as clarity on decarbonization pathways. We know the levers to pull that will help us move the building sector. Now we need to pivot into action and accelerate.”

Eduardo Ramos, is Co-Managing Director of Gensler’s Mexico office. Gensler is the largest design and architecture firm in the world: “As a global organisation, net zero is embedded into our DNA. We’re targeting 2030 for net zero across our projects and operations which is a significant challenge. Through our Global Green Materials initiative, we aim to influence the value chain by demanding low carbon products and systems for out projects. We promote collaboration within our community in all design and construction phases to achieve this ambitious goal.”

Ramos agrees that progress is increasingly visible: “We can see the benefits on the workforce, customers and communities. At the beginning conversations were all around minimising negative impact. Now they have shifted to how we can have positive and regenerative impact.”

As Rahul Shah, Global Director, Built Environment, BSI says, “The journey to net zero is no longer a ‘nice to have’ goal. There’s increasing pressure on them to have a realistic plan towards net zero to meet ESG [environmental social and governance] reporting demands. It has to be part of their DNA.

> “We should celebrate progress, but also recognize that there is a lot to do – and we have to do it faster if we’re going to deliver net zero by 2050.”
>
> **David Symons,**
> **Future Ready Innovation Leader, WSP**

CBRE – Pathways to progress

CBRE has set a goal to achieve net zero carbon emissions by 2040, a commitment that encompasses carbon emissions from its own operations, the properties it manages for clients and its supply chain.

To turn ambition into action, CBRE has developed and published its Net Zero Strategy for Corporate Operations. This climate transition plan outlines a clear strategy to deliver progress, organized around four key pathways: buildings, transport, energy and procurement. Within each pathway, it will deliver on strategic objectives through time-bound actions. These efforts are supported by program-level strategies that enable change throughout the global organization.

CBRE's net zero goal is supported by three interim (2035) milestones approved by the Science Based Target initiative (SBTi). These milestones include GHG emissions reductions from a 2019 base year by:

68%

for absolute emissions for corporate operations (Scopes 1 and 2)

79%

per square foot (intensity) for buildings managed for occupier clients (Scope 3)

67%

per square foot (intensity) for buildings managed for landlord and building owner clients (Scope 3).

Two additional strategic initiatives are critical to the company reaching its goal:

100%

renewable energy for our corporate operations by the end of 2025

100%

vehicle fleet electrification by the end of 2035.

Rob Bernard, CBRE's chief sustainability officer, says, "We strive to lead by example, as we have similar sustainability goals to our clients and face the same challenges they do. Our approach is rooted in simplifying complexity to accelerate sustainability for the industry at scale. We have made notable progress in reducing emissions, but we recognize there's still much to be done."

Embracing opportunities

Net zero is universally seen as highly ambitious, demanding strategic planning and resourcing to meet it. Mott MacDonald's Gulacsy sounds a note of caution: "We can't be naive. There has to be a solid business case for it."

But there is also wide recognition that many measures – most obviously around energy efficiency – bring cost savings. Joining the net zero journey not only shows environmental responsibility and cost-consciousness but also nurtures trust among stakeholders through less tangible benefits, such as strengthening 'green' credentials, client loyalty and employee motivation.

Symons regards embracing the net zero journey as "the innovation and growth opportunity of the 21st century, because we're all in a competitive landscape and people want to work with, and for, companies that are doing good." On top of which, he is among several participants to make the point that, "Many of our clients themselves have made net zero commitments, so it's a growth opportunity for us to help them meet those aims."

Boustead's Khalil agrees, noting "opportunities for the organization to be seen as progressive in adopting sustainable practices, which in turn could attract younger talent into the workforce, as the younger generations are greatly concerned about the social impact of being sustainable." He also mentions the opportunity for organizations to tap into 'green' loans offered by financial institutions, bringing attractive interest rates and easier access to funds.

Ramos at Gensler also recognises the leading role that larger global organisations should play: "As a group I'd say we're aligned in promoting net zero goals but there is a large section of the industry which sees it as complex, and there is a lot of work to do to bring people on board."

Aurecon – creating sustainable lives

Aurecon has committed to be net zero in operations by 2025. Its goals to reduce our greenhouse gas (GHG) emissions are focused around the areas of the business where the biggest impact can be made.

Aurecon aims to achieve its targets through risk-based decisions, balancing investment in emissions reduction measures against offsets. Over time it is anticipated that the need for offsets will reduce.
Aurecon's net zero operations approach covers the following:

- Owned or controlled sources (Category 1)
- Purchased energy (Category 2)
- Other indirect emissions from Aurecon activities we do not own or control, such as business travel, waste, and water (Category 3-5)

Aurecon is a participant in the UN Global Compact. Recognising the role of technology in this future, Aurecon has also worked with BSI to implement BIM to ISO 19650, underpinning its commitment to digital innovation and setting a benchmark for the industry.

Setting strategy

Invariably, participants in our research recognize net zero goals as a key part of their company's strategy. Adam Peacock, Buildings Structures Practice Leader for Australian engineering consultancy Aurecon, is typical: "It's huge," he says. "It's in our blueprint to achieve net zero by 2025, which we're on track with, and we see a much bigger opportunity in the projects we work on. We've just rolled out our 'Sustainability in Design' programme to make it happen."

Our survey finds that this positivity is consistent across the built environment life cycle. In China and the UAE, 100% of respondents say net zero is important, while the figure is 88% in the US and Japan. However anomalies exist, with some citing regions citing it as less important, with as many as 32% of respondents in the UK and 28% in India saying it is not important.

There is also some variation across regions on where decisions on net zero are made, with 68% of respondents in the US saying that responsibility lies at heads of/director level, but 72% in UAE and 78% in Japan pinning it at operations lead level. However, boardroom decision-makers – who should know – confirm that decisions are made at the top level.

Implementation is another matter. According to CBRE's Thompson, "Many organizations have made public commitments to net zero but don't have an actionable plan that will get them to their goals." She adds, "Really, it can be a daunting challenge, so they don't know where to start." The starting point, she argues, is to commit to the net zero target – CBRE's goal is to achieve it by 2040 – and create a strategic road map that captures the scale of the project and prioritizes action – "Driving progress one step at a time is really key."

Global industry challenges

Beyond strategic challenges, cost inevitably looms large, with 44% of respondents in China and 42% in Japan citing it as a barrier to adoption. “Without a return on investment, it’s very hard to persuade clients,” says Aurecon’s Peacock.

But across the global industry many other obstacles are mentioned, including 42% in Malaysia citing data management, and 38% in China and 34% in UAE citing lack of regulation.

Dr Keyu Chen, ISO Technical Committee Expert, with leading experience in Digital Build & Environment, points the finger firmly at digitalization – or rather the lack of it. “The main roadblock is poor digital infrastructure – no one’s ready,” he says. “There’s no data standardization or consistency, because of the way the industry is targeted – which is on safety, speed, quality and cost.”

Anecdotally, various interviewees also mention a lack of skills in sustainable building practices and green technologies. Balfour Beatty’s Gilroy brings up the less tangible ‘people issue’ of culture change. “You’re never going to get to net zero unless you really address behaviour change,” she says. “At the moment, as an industry, a lot of what we do is lip service. We need to get deeper into the psyche of the operatives and the individuals, because it’s our workforce on the front line we need to influence.”

Kinenergy’s Munoz highlights a specific pain point for companies on their journey to net zero: the challenge presented by indirect – or Scope 3 – emissions. “For us, Scope 1 and 2 can be pretty easy. Why? Because we don’t burn any fuel. Scope 1 is only our cars – and we have hybrid cars – and Scope 2 is our energy consumption, and we have good accountability for that. But the main problem that we have – and I think it’s the same problem for everyone – is how we’re going to approach Scope 3. In Latin America we don’t have the necessary laws established, so it’s hard to get clients and suppliers aligned on targets and reporting.”

Mott MacDonald is among several large organizations that support suppliers’ efforts to get a handle on Scope 3 emissions. “We’re trying to shape their reporting, for example, by calculating embodied carbon for them, whether they’re asking for it or not,” says Gulacsy.

Balfour Beatty – Cutting Scope 3 carbon emissions

Balfour Beatty has set a 2050 target to achieve net zero across Scope 1, 2 and 3 emissions. The Group has worked closely with the SBTi to validate its 2030 and 2050 targets.

A detailed analysis showed that in 2023 a group of around 450 of Balfour Beatty's UK supply chain partners were responsible for 86% of the company's Scope 3 purchased goods and services carbon emissions. Over 50 partners within this group have already set their own SBTi targets to reduce their absolute carbon emissions by, on average, 30% by 2030. While the company does not control suppliers' efforts to reduce their own carbon emissions, it supports and encourages them to do so, as their success directly contributes to Balfour Beatty meeting its own Scope 3 reduction targets.

The company's analysis of its Scope 3 carbon emissions also showed that in 2023 the goods and services it purchases represented 84% of its Scope 3 carbon emissions and included products like cement, steel and aggregates, which are hard to decarbonize. It is therefore focusing efforts on this category – as well as carbon emissions from investments – as these are the areas where it can have the biggest impact.

Another encouraging development is the company's use of hydrogen as an alternative fuel to diesel. "We're experimenting a lot with how we can use hydrogen more on our sites," says Joanna Gilroy, Group Sustainability Director. "It's an area where we're really accelerating."

Digital competence and data use

Organizations invariably see having good digital foundations as critical to the net zero journey, with more and companies increasingly utilizing smart technologies to capture, measure and monitor carbon usage and productivity. Balfour Beatty's Gilroy puts it simply: "It's the old saying, 'what gets measured gets managed' and the more effectively we can measure, the better we can progress."

Businesses have invested significantly in digital tools, as Kevin Wong, BSI's Global Director of Built Environment explains: "Businesses have a lot of data from a building and know that utilizing it effectively is the route to best practice. Standards can build their digital platform, by leveraging certification and training to build trust in the data and pursue their net zero goal." Dr. Chen emphasized the necessity of a strategic decision-making framework aligned with a well-defined Digital Maturity Assessment to facilitate the digital transformation journey.

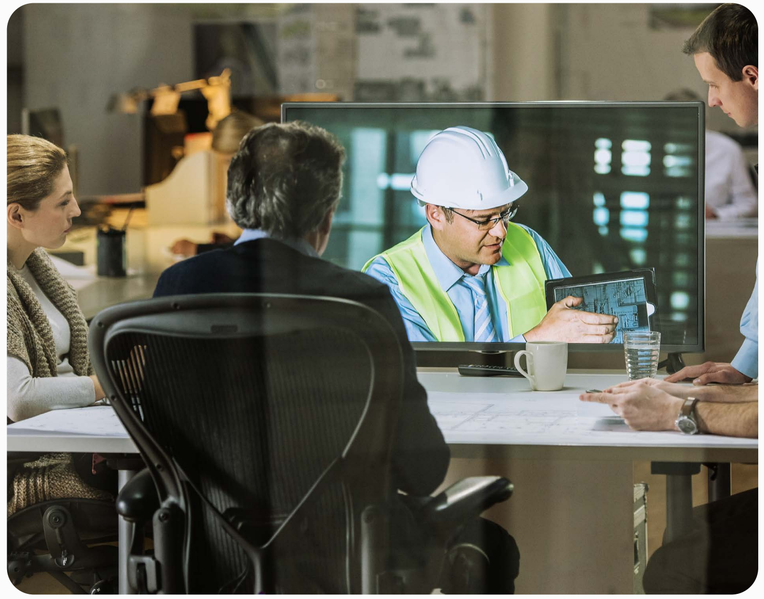
As Jacob Hoare, Digital Lead Asia, Aurecon, explains, "Having standardized, high-quality data is crucial, as it enables organizations to make informed decisions. This capability is essential when making decisions about their assets and progressing towards net zero."

Obayashi Corporation has been one of the pioneers in the Asia region in managing data across the built environment life cycle. Iida Kunihiro, Head of Obayashi's iPD Center explains: "As a general contractor, we believe that conveying accurate information to the site and conducting construction operations with accurate information leads to true productivity improvement. To achieve this, we believe that digitalization, data-driven process reform, and Digital Transformation are necessary, without being bound by conventional methods."

Yet sustaining operations from design to construction with accurate information is not an easy task, and for this purpose, Obayashi has formulated the SBS (Smart BIM Standard) as a rule and the "One-Model" approach as management, to manage BIM information for internal projects.

"Using technologies are key to progress. The capabilities we have today with BIM and additional plug ins allow us to share our modelling forecasts with clients which really helps with decision-making. We want to make sure that during the construction process all of these decisions are documented and followed."

Eduardo Ramos,
Co-Managing Director, Mexico office, Gensler



51%

say technology is well integrated in their net zero approaches

Dr Salah Al Dilimi, Fellow of Institution of Civil Engineers (FICE) and Rail Infrastructure Maintenance Manager at Roads and Transport Authority (RTA) in Dubai highlights the benefits of this approach: “Having an integrated data environment is important to ensure a smooth transition of information across the life cycle. It provides one single source of truth.”

Gulacsy agrees on the benefits of data: “As an engineer, we love data because it’s predictable. You can actually reach conclusions and start building systems to improve efficiency. But when it comes to how much we know about buildings and infrastructure – compared to, say, how a car or an aeroplane operates – we’re quite far away from where we need to be.”

Shang-Hsien (Patrick) Hsieh, Professor of Civil Engineering at National Taiwan University, adds that, as well as for creating and monitoring buildings to operate energy-efficiently, digitalization is indispensable for calculating embodied carbon. “You need to know everything about the nature of thousands of materials, their quantities and their origins,” he says. “To do these calculations every year without digital technology would be impossible.”

In our survey, participants report that integration of technology and data – for example, BIM and Digital Twin – is strong in their organizations, with 51% saying it’s well integrated and 43% somewhat integrated.

Aurecon’s Hoare is more sceptical: “Often, information is not standardized,” he says. “Many companies either lack comprehensive knowledge of their assets or have information that is fragmented and disorganized.” Digital Twins enable organizations to consolidate this information into a centralized location, allowing for detailed analysis and valuable business insights. These Digital Twins can be tailored specifically to align with the organizations’ objectives, such as achieving net zero.

His colleague Peacock agrees: “We’re not seeing many clients using Digital Twins across the life cycle of buildings.” Ideally, he says, the same data could be available from the design and construction phases, through asset management and, eventually, into decommissioning, with lessons learned for future projects. “But it’s all a bit disjointed at the moment.”

Dr Salah Al Dilimi of RTA agrees there is further to go in adopting digital twin, but highlights the benefit: “It is a visual interaction between your assets and when based on reliable, integrated data, it provides a baseline of information through which to make decisions.”

ISO Technical Committee Expert Dr Chen adds that at the project management level, “The digitalization’s just not there. There are a lot of trial cases, but change is so slow. Our industry is just at the beginning of the net zero journey. Today, your company simply has to be data driven

and intelligent oriented. If you're not, I don't know what kind of company you are."

More positively, Hoare says companies increasingly recognize the value of data and are becoming more adept at understanding how to leverage the data generated throughout the asset life cycle. But he echoes others in saying that, while they often have a clear vision of their goals, they sometimes "lack the strategic roadmap to achieve them" and require support and guidance throughout their journey.

Even so, 64% of our survey respondents think they are using data well across the asset life cycle. While this is reasonably consistent across regions, there is variation from boardroom to operations, with 70% of CEOs seeing it is good or excellent, but 37% of COOs and 32% of senior operations managers and senior project managers saying it needs improvement.

Obayashi is one firm that is seeing the benefits of embracing technology such as BIM. Iida Kunihiro, Head of Obayashi's iPD Center says: "BIM has become the norm for us. We are transitioning from a stage of pursuing the ideal state of BIM models to a stage of pursuing construction business management methods using structured data as a business foundation."

Dr Al Dilimi of RTA explains one of the key impacts of BIM: "The optimising has the potential to save millions, and enable prompt decision-making. You have a collaborative digital platform, everyone can access it. You bring all the decision makers in one place and, based on evidence, make more effective, quicker decisions. In some cases, we were able to reduce decision-making from six months to three hours."

Gensler – Cities Climate Challenge

Gensler has committed to eliminate all net emissions associated with its work within a decade.

Gensler Cities Climate Challenge (GC3) is a roadmap for how the firm intends to help clients reach their carbon targets and its goal of making every building in its portfolio net zero carbon.

GC3 is focused on minimizing two primary sources: emissions related to using buildings (operating carbon), and emissions related to making buildings (embodied carbon). It works across five strategies:

- Leading industry partnerships
- Educating Gensler and its clients
- Measuring Impact
- Designing with enhanced technologies
- Specifying green materials.

The people factor

With so much emphasis on technology, WSP's David Symons is among several interviewees to urge companies not to lose sight of organizational culture and skills development: Echoing Joanna Gilroy's earlier point, he adds, "Sometimes, as engineers and technical people, we love to talk about computers, sit behind a screen and tap away on our keyboards. But we must make sure that this is wider than just a keyboard exercise. There's a huge job to do on culture, confidence and skills."

Our survey reveals a mixed view among respondents – across both regions and role – on skillset development required to achieve net zero:

62%

in China and 40% in the US cite a need for better project management skills

46%

in Malaysia cite a need for better leadership skills

41%

of COOs cited a need for better procurement skills.

ISO Technical Committee Expert Dr. Chen is convinced that other than domain knowledges, digital skills are key –and in seriously short supply at the operator and manager level. "If you're setting up plans and spreadsheets, you need both BIM knowledge and data knowledge – more than the leadership team does," he says.

Ramos at Gensler describes the challenge as a 'continuous education': "Our design technology platform requires talent to develop proficiency in modeling tools. Some of these are highly specialized and rely on continuous education and staying up to date with technology that is in constant evolution."

Attracting such talent can be challenging, with the global built environment sector grappling with a shortage of technology skills and many companies needing to outsource work or import talent, both of which drive up costs.

Boustead Projects

Boustead is an engineering services group headquartered in Singapore. Boustead’s Real Estate Division delivers progressive engineering expertise in the design-and-build and development of smart eco-sustainable business park and industrial developments. The company has constructed more than 3,000,000 square metres of real estate in Singapore, China, Malaysia and Vietnam. Boustead Project’s capabilities come from adopting transformative technologies and ensuring all projects are underpinned by robust quality, environmental, health and safety management systems.

Boustead Projects considered a leader under the BCA’s Green Mark Scheme and the US Green Building Council’s Leadership in Energy & Environmental Design (LEED) Program.

Supply chain capability

Overall, our survey respondents present a positive view of the supply chain's ability to contribute to their company's net zero vision, with 59% seeing it as 'excellent' or 'good' and only 15% saying it needs improvement.

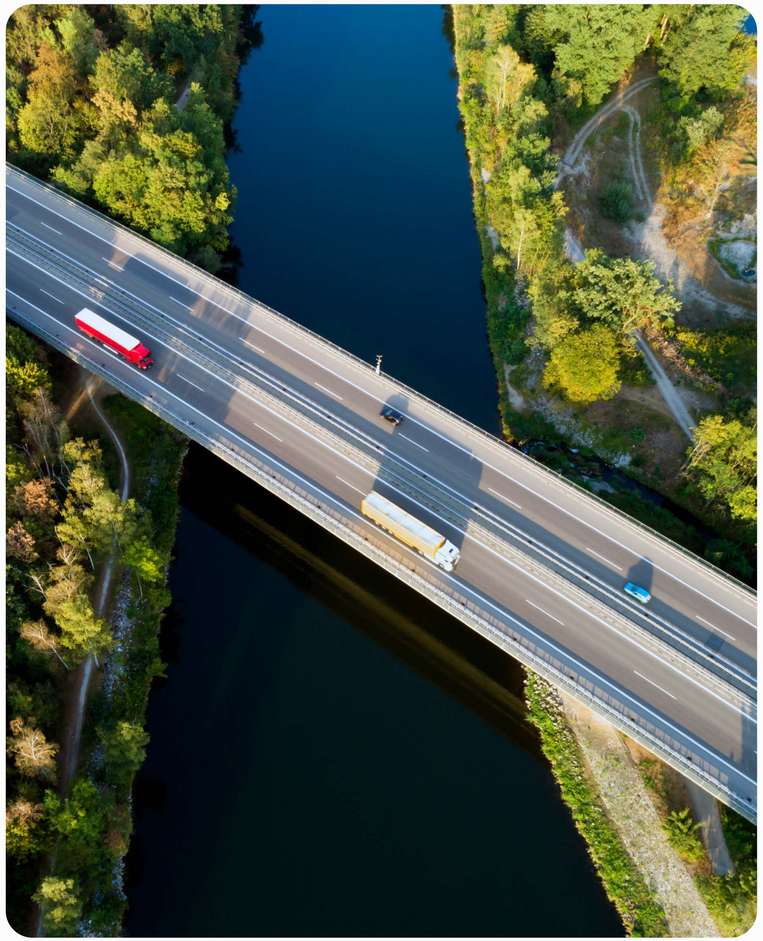
Despite this positive picture, Aurecon's Jacob Hoare says one of the biggest challenges companies face is the varying capabilities within their supply chains: "Large organizations tend to be more advanced in defining the expectations for information produced by their supply chains, which can be utilized throughout the asset lifecycle. But smaller organizations often lack the necessary capabilities or the clear incentives to contribute effectively to the net zero vision."

CBRE's Thompson agrees. The company has more than 130,000 suppliers globally, including some of the world's largest companies, but also many regional and local SMEs. "Our suppliers are at different places in their sustainability journey, but what's exciting is the opportunity to help them with all that we've learned over the past decade", she says.

She cites the example of CBRE's 'carbon trace' programme that leverages a strategic partnership to help suppliers calculate emissions. This feeds CBRE the data it needs for regulatory and sustainability reporting and enables the company to help suppliers develop their own decarbonization strategies. "Our goal is to engage 7,500 suppliers by 2025, to expand the reach of this initiative."

Ramos adds that it's important to 'get the word out' to share initiatives around the supply chain with clients, 'so they are engaged and can see the possibilities'.

RTA's Dr Al Dilimi emphasises the importance of consultation bringing companies in the supply chain on the journey: "We wanted them to be on board willingly and to understand the tangible benefit." He adds that there needs to be a common understanding and outcome, "that cannot come from the supply chain. It has to be top to bottom."



Standards as an enabler

There is wide consensus that standards play a vital role in achieving net zero by creating globally agreed good practice to maintain robust, reliable management processes. They can provide businesses with the tools that they need to achieve targets in the most efficient, safe and effective way possible.

National Taiwan University's Prof. Hsieh echoes the views of many in observing that previously local construction industries are becoming increasingly outward-looking. "The built environment is already more international, so we need to make changes. That's why we're working closely with BSI."

There is wide consensus that, by aligning every size of business consistently – instilling confidence and trust in practice and process – standards can accelerate progress towards net zero. In our survey, an encouraging 62% of respondents say their company understands how standards can help support carbon journey efforts, and 61% feel that their country/region's policies are clear.

"BSI's standards help accelerate innovation, add credibility to sustainability efforts and drive collective action toward a net zero future."

Jonathan Breton,
Global Director, Built Environment, BSI

WSP – a PAS 2080 standard bearer

With around 90,000 active projects globally, WSP plays an impactful role in the global movement to transition to a low-carbon future. It is committed to net zero and has published a Climate Transition Plan setting out its journey by targeting some key areas of its own operations (Scope 1 and 2) and influencing those of its partners and suppliers (Scope 3). With near-term and long-term science-based emissions reduction targets approved by the SBTi, it must:

- Reduce scope 1 and scope 2 (market-based) GHG emissions 60% by 2030 from a 2018 baseline
- Reduce upstream scope 3 emissions 30% by 2030 from a 2018 baseline
- Source 100% renewable electricity by 2030
- Achieve net zero emissions across the value chain by 2040
- Commit to better understand GHG emissions associated with its designs and advice, collaborating with clients and partners to drive emissions reduction.

To support its net zero journey WSP is equally committed to standards. In 2024, it upgraded its BSI certification to PAS 2080:2016 to the new PAS 2080:2023 standard, demonstrating its competence to manage carbon emissions impacts across the whole life cycle of building and infrastructure projects.

WSP is a pioneer of PAS 2080 and worked alongside BSI and other leading organizations to support the development of the PAS 2080:2023 guidance, which was published in April 2024.

Focusing on the future

Our survey finds that, generally, respondents feel the boardroom knows what is required to meet net zero, with 61% of all respondents – and 64% of CEOs – saying understanding is ‘excellent’ or ‘good’. But, again, we find significant variations across regions. For example, in China 40% cited it as average and 24% felt it needed improvement.

The survey presents a mixed view – across region and role – on the challenges to overcome on the journey to net zero. Perhaps most concerning is that 62% of COOs say they don’t know where to start, while 61% of Senior Operations Manager don’t know what is required in their role.

August Nazareth, BSI’s Built Environment Global Director, Americas, is sympathetic, “Achieving net zero and understanding how it can be done within the organisation is a clear challenge. What are the steps like? What is the order? What do I do first?”

62%

of COOs say they don’t know where to start on their journey to net zero

“We’d never start a build without a proper scope. We’d never put a shovel in the ground and start laying concrete and just figure it out as we go. But that’s exactly what net zero requires everyone to do – to have a go at something and see what works. We’re asking the engineering community to leap and trust that their wings will open before they hit the ground, because we cannot give them all the steps.”

Joanna Gilroy,
Sustainability Director, UK, Balfour Beatty

Collaboration is key

Our survey finds a generally positive view is held of industry collaboration, with 57% of respondents saying it is ‘excellent’ or ‘good’ on their journey to net zero and only 19% seeing a need for improvement.

But, as mentioned, among CEOs globally, 41% cite lack of industry collaboration as a barrier. WSP’s Symons agrees with them that there’s a lot more scope for the industry to work together. “It needs to be collaboration with a purpose,” he says, citing work that WSP is currently undertaking with a major infrastructure client on real-world testing of construction materials.”

He continues, “It can also be about bringing infrastructure organizations together to think about mutual specification or about providing long-term signalling to the supply chain, giving them the opportunity to adapt to future changes.”

All participants acknowledge that achieving net zero is a challenge faced by all of society and will require a collective effort to overcome it. Built environment organizations – as major contributors of GHGs – have a particular responsibility to widen their vision and learn from companies that have succeeded in making considered, impactful changes. And just by taking part in an open conversation on net zero, they will be contributing to knowledge-sharing and feeding a wider appetite for change.

Obayashi Group

The Obayashi Group formulated its long-term vision called “Obayashi Sustainability Vision 2050” (OSV2050) in 2019 within which it set decarbonization as one of its targets for 2050. Obayashi has incorporated carbon neutrality into its business plan as a key management theme and is now embracing initiatives to realize this vision.

The Obayashi Group has set new greenhouse gas emission reduction targets (targets for FY2031.3) as follows. With these targets, Obayashi have committed to Science Based Targets (SBT), which are greenhouse gas emission reduction targets in line with the Paris Agreement, and acquired the certification in October 2022.

Conclusion

The findings in this report are illuminating and highlight the need for a collaborative approach on the journey to net zero. Once again, we are grateful to the industry specialists who contributed.

The report identifies a number of themes for built environment organisations to consider when embarking on the journey to net zero: the benefits of leveraging technology; the call for industry collaboration; the need for a clear strategy; how to bring teams on the journey; the role of the supply chain, among others.

BSI has the expertise and resources to help businesses on their journey to net zero through standards, consultancy, training and embracing technology. Please see below for how we can help.

We shape and embed best practice so that your organization can become future ready. We have not only committed to achieving net zero by 2030, but BSI is instrumental in the 'Our 2050 World' collaboration as its convenor, that brings the International Organization for Standardization (ISO), the UN Race to Zero campaign and the UNFCCC Global Innovation Hub together to enable and mainstream the transition to net zero through standards. We are equipped to transform your net zero journey through access to unrivalled expertise.

Whether you are starting your carbon neutral journey, want to enhance your current strategy, or are an environmental leader, we're ready to accelerate your progress.

Summary of BSI services

BSI Knowledge, our online platform, gives you access to over 9,000 standards related to the built environment.

Courses and qualifications

We provide a number of courses and qualifications from introductory training to advanced level certified qualifications.

BIM Kitemark certification

Differentiate your BIM projects and elevate your credibility with independent BSI Kitemark certification for BIM.

PAS 2080

PAS 2080 guides the management of carbon across the lifecycle of buildings and infrastructure.

Net Zero guidelines

Create and implement a carbon reduction plan in line with ISO Net Zero Guidelines to get ready for your net zero certification audit.

ISO 14001

Reduce your environmental impact, inspire trust in your organization, and improve brand reputation.

Creating impact through a unique combination of services and solutions

BSI works with the industry on key issues related to the journey to net zero across each stage of the built environment lifecycle, through our solutions and services below:

Knowledge Solutions

- Creation and sharing of standards
- Convening of Industry Stakeholders and Ecosystems
- Information Solutions
- National Standards Body

Assurance Solutions

- Systems Certification
- Supplier Audits
- Internal Audits
- Customized Audit
- Training

Regulatory Services

- Product certification
- BIM certification
- CE mark; UKCA mark; ESMA

Consulting Services

- Assessment
- Advice
- Implementation
- Continual improvement in EHS, Supply Chain, Data Privacy & Governance, & Sustainability

Partnering with BSI

Improving operations

PAS 2080: PAS 2080 guides the management of carbon across the lifecycle of buildings and infrastructure.

PAS 2038: Retrofitting for improved energy efficiency.

ISO 14090 Climate Risk Adaptation: Leveraging data to identify, measure and forecast an organization's climate risks.

Scope 1 & 2

GHG Accounting & Reporting Support: helping organizations understand their direct and indirect greenhouse gas emissions.

Scope 3

GHG Accounting & Reporting Support: supporting organizations in understanding the emissions produced within their value chain.

Developing & Executing Carbon Reduction Plan: identifying, prioritizing and forecasting carbon reduction opportunities that will be carried out across sites and functions to support the organizations' decarbonization goals.

Optimising and planning

ISO 14064-1: Emissions quantification at organization level ISO 14064-2: Emissions quantification at project level.

ISO 14067: Emissions quantification at product level.

PAS 2050: Lifecycle product emissions (product footprint).

PAS 2070: City-level emissions assessment.

ISO 14001: Environmental management.

ISO 50001: Energy management.

ISO 50005: Energy management – for SMEs.

PAS 2080: Carbon management in infrastructure.

ISO 14020: Environmental labels and declarations.

ISO 14064-3: Verification/validation of GHG inventories.

ISO 14065: Validation/verification body requirements.

ISO 14066: Competence of validation/verification teams.

Setting strategy

Discovery workshop: prepares you for Carbon Footprint Verification (ISO 14064-1), including how to consider scope 2 and 3 emissions.

ISO 14068-1: empowers organizations to implement a rigorous quality process that helps meet verifiable carbon neutral requirements.

ISO 14064-1: ensures all major GHG emissions are captured and accurate target baselines are set, guaranteeing credibility.

ISO Net Zero Guidelines (IWA 42: 2022): create and implement a carbon reduction plan in line with ISO Net Zero Guidelines to get ready for your net zero certification audit.

Leveraging technology

ISO 19650: series for managing information over the whole lifecycle of an asset using building information modelling (BIM): information management supports better decision making across the life cycle. Our BIM courses and qualifications help companies understand the opportunities that collaboration brings within a digital built environment.

ISO 27001: for information security management.

PD ISO/IEC TR 30172: Digital Twin – usecases.

BS ISO/IEC 30173: Digital Twin – concepts and terminology.

Connect Climate: Our platform empowers organizations to tackle their environmental impact.

Get in touch

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BSI has a range of standards to help organizations navigate this path across net zero, nature positive and population health.

To find out more about how BSI can help you, visit **bsigroup.com**