Decarbonisation and
the path to net zero

April
2025

Sharing what we've learned from our 2024 roundtable series

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The path to net zero
Lessons from industry leaders

Fostering valuable conversations

Since 2023, we've been bringing together industry professionals to discuss and explore the critical challenge of decarbonisation.

Our diverse experience spanning various sectors and project types, combined with our work across different regions, gives us a valuable breadth of perspective. Helping us understand the complexities of decarbonisation nationwide and ensuring our insights are grounded in real-world challenges.

What started as a forum for exploring solutions has evolved into a dynamic exchange of ideas—challenging norms, inspiring action, and shaping more effective strategies.

A core belief we hold is that no one has all the answers. The transition to a sustainable future is a shared journey, and success depends on collaboration, openness and a focus on practical solutions. By learning from one another and applying these insights, we can develop clear strategies that move us toward a greener, healthier and more resilient built environment.

Reflecting on 2024

Early discussions highlighted the importance of legislation to drive change and help us stay on course to meet net zero carbon targets. This set the stage for our 2024 roundtables, where we explored key policy developments.

The UK Net Zero Carbon Building Standard (UKNZCBS) was welcomed for its tailored approach across different sectors and its phased targets, with its pilot version launched in September.

The Future Homes and Buildings Standard, set to take effect in 2025, sparked discussions on how best to meet its new requirements and share best practices across sectors.

Similarly, the 2023 amendment to the Climate Change Act, which strengthened the UK's net zero commitments, prompted conversations on transitioning away from fossil fuels, with a focus on retrofit, electrification and alternative energy sources.

Learn more about the UK's first cross-industry Standard, bringing together Net-Zero Carbon requirements for all major building types. →

Highlighting international efforts

As the 2024 General Election approached, there was a sense of anticipation regarding potential policy support.

Post-election reflections, however, highlighted both the progress made and the challenges that remain.

Towards the end of the year, the United States elected a new president whose stance on the climate crisis raised concerns about the urgency of global action. This shift in leadership introduced challenges and the potential reversal of progress, particularly with the decision to withdraw again from the Paris Agreement.

Our roundtables also explored the concept of healthy buildings, recognising that sustainability is about more than just reducing carbon emissions; it's also about improving the quality of the spaces we live in and thoughtfully reusing existing structures.

This ongoing conversation is helping us connect decarbonisation goals with the everyday experiences of those who use buildings and the spaces between.

Read on to learn more about the progress made, the challenges ahead and the practical steps for moving towards a brighter future. →

Inflation Reduction Act (2023)

A $783 billion initiative

Aimed at accelerating clean energy adoption in the United States.

European Green Deal (2020)

Continuing to drive climate action

With its goal of making Europe the first climate-neutral continent by 2050 and achieving a 55% reduction in greenhouse gas emissions by 2030 (compared to 1990 levels).

Unified standards and clear legislation

A key takeaway was the importance of clear and consistent legislation, with the UKNZCBS praised as a significant step in standardising carbon measurement across sectors.

Previously, inconsistent metrics made it difficult to compare carbon performance across projects and caused confusion. The new standard addresses this gap by providing a clear framework for assessing both operational and embodied carbon in commercial, residential, healthcare and educational buildings.

The period for registering your project to participate in the UKNZCBS pilot testing is now closed. We look forward to sharing the results as it progresses along with verification.

As the Standard evolves, requirements are expected to become more ambitious over time, reflecting the industry's commitment to continuous improvement in carbon reduction. Remember to follow us on our social media channels for all the latest industry trends and updates.

Learn more about the UK's cross-industry Standard. →

The UKNZCBS framework focusses on six objectives:

- **Climate change mitigation**
- **Climate change adaptation**
- **Sustainable use and protection of water and marine resources**
- **Transition to a mostly circular economy**
- **Pollution prevention and control**
- **Protection and restoration of biodiversity and ecosystems**

Funding and investment criteria

Beyond national legislation, international frameworks like the EU Taxonomy are shaping investment decisions in the UK.

The EU Taxonomy is a classification system designed to define and promote environmentally sustainable economic activities.

It aims to combat greenwashing by establishing clear criteria for sustainability, guiding investments towards genuinely sustainable projects.

Although the UK is no longer part of the EU, the Taxonomy still impacts the UK property market by influencing investment standards and sustainability practices.

Our discussions around Hemisphere, a Grade A office and lab space, explored how the standard can ensure efficient energy use in buildings with diverse resource demands, across different sectors.

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Businesses seeking funding should understand the drivers influencing their funders and meet their requirements to qualify for and attract investment which influence their asset valuations.

Aligning with these regulations can ensure that their properties remain attractive to a broader market, should they decide to sell in the future.

As regulations and investment criteria evolve, assessing a building's carbon performance is becoming more sophisticated. Rather than just looking at overall energy use, it's about understanding how different systems contribute to efficiency gains.

In some cases, core infrastructure plays a significant role in energy demand. But in sectors such as data centres, IT infrastructure is also a major factor. The good news is that technological advancements are driving improvements across the board.

Computers and servers are becoming more energy-efficient, accelerating their own journey toward net zero carbon. This progress presents a great opportunity for more precise and transparent reporting.

By clearly distinguishing between efficiency gains from building improvements and advancements in technology, we can give investors and stakeholders a clearer, more accurate picture of environmental performance.

As sustainability standards continue to rise, embracing this nuanced approach will not only enhance reporting but also highlight the positive strides being made toward a greener future.

Emphasis on retrofitting existing buildings

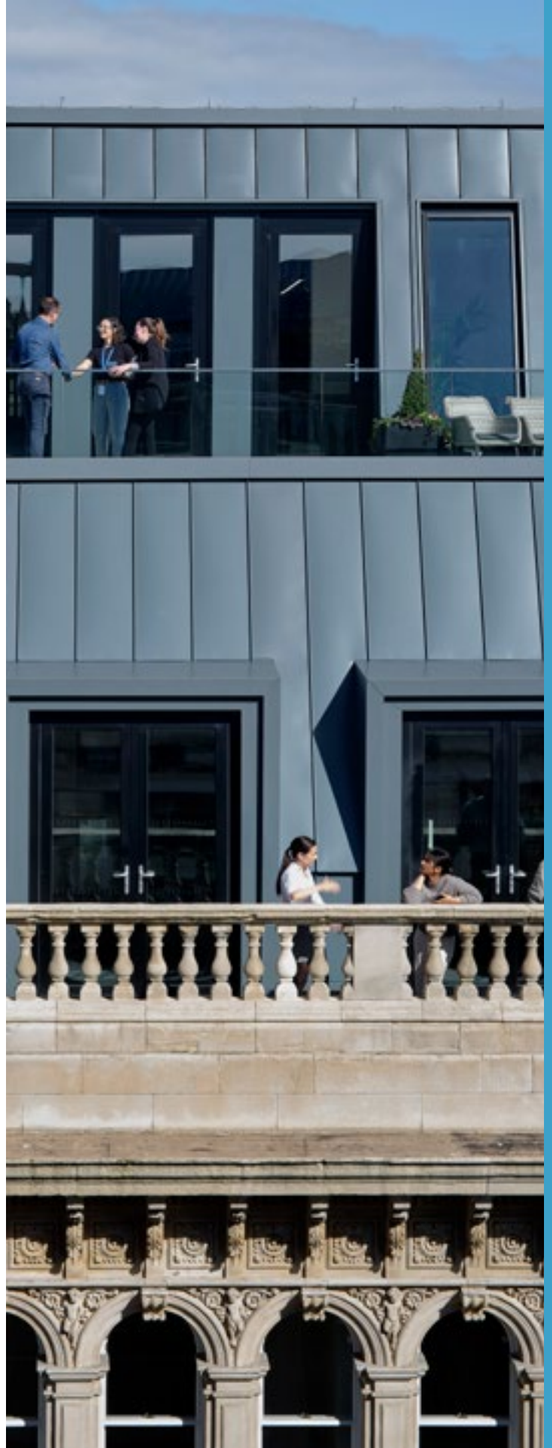
A major topic of discussion across all events was the need to prioritise retrofitting over new builds. With this naturally came the growing need for effective tools and strategies to support building owners and occupiers in managing their buildings.

Much like our own retrofit toolkit, these resources can help identify opportunities to reduce energy consumption without compromising occupant comfort.

Finding that balance between tenant satisfaction and minimised energy use is so important, and we believe that readily available tools are essential to achieving it.

Our toolkit offers early-stage guidance and support, empowering building owners to make informed decisions about upgrades and prioritise the most impactful improvements.

We're very pleased with the positive impact it's had—such as its role in optimising existing schools through targeted interventions like air tightness improvements and window refurbishments—with numerous success stories demonstrating significant energy savings and enhanced building performance.



Our data driven Retrofit Toolkit
We can assist you in making informed decisions when prioritising decarbonisation plans.

- Wall Fabric Upgrade
- High Performance Windows
- Heating System
- Lighting System
- Ventilation System
- Roof Insulation

Discover how you can reduce your energy usage across your buildings or entire estates. →

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We explored examples of public sector building retrofits, which further reinforced the benefits of well-planned, strategic interventions.

Discussions highlighted how retrofitting existing buildings, rather than opting for demolition and new construction can dramatically cut embedded carbon while delivering long-term operational energy savings. An example included improving the efficiency of mechanical and electrical systems before considering larger-scale retrofits.

This approach has been valuable in the healthcare and education sectors, where budgets are often constrained, yet the demand for improved building performance is high.Local authorities are also integrating circular economy principles into retrofits, focusing on reusing and refurbishing materials rather than discarding them.

Examples included repurposing structural elements, such as steel and concrete, from demolished buildings and implementing modular construction techniques to reduce waste and lower carbon impact.

Throughout the year, many participants shared many more fascinating success stories, such as leveraging real-time data analytics to cut operational carbon or implementing modular retrofit solutions to extend building lifespans efficiently. We're excited to continue these discussions and explore how these emerging innovations can be applied widely to accelerate decarbonisation efforts.

Case studies showed that simple measures—such as optimising heating and ventilation systems—could reduce energy consumption by up to 50%, even before implementing more capital-intensive upgrades.

Importance of collaboration between public and private sectors

Interestingly, another prominent theme was the differing approaches of public and private sectors toward sustainability.

While the public sector is making strides in decarbonising its estates and assets, participants noted that the private sector's progress is often hindered by a lack of legislation and funding.

The conversation underscored the potential of educating and informing the market to create greater demand for sustainable building practices, aligning public and private efforts towards common decarbonisation objectives.

The Leeds discussion explored local council initiatives that are bridging this gap by offering support programmes and incentives to private developers. Such partnerships were seen as crucial in accelerating the pace of sustainable transformation.

Integrating health and wellbeing into sustainable design

As our discussions evolved, one critical question kept emerging: How can we redefine sustainability beyond carbon metrics to prioritise human wellbeing? This led us to the concept of healthy buildings—spaces that not only minimise environmental impact but also enhance quality of life.

While the need for energy efficiency is undeniable, the importance of occupant wellbeing in building design was emphasised throughout the event.

Post-occupancy evaluations and studies of user behaviour are crucial for understanding how spaces are used and where optimisations can be made.

Discussions around user sentiment revealed a growing awareness of the ‘brown discount’ versus the ‘green premium,’ which refers to how occupiers value sustainable buildings. Health, wellbeing and biophilic design were seen as intrinsic to the conversation, broadening the scope from reducing carbon footprints to creating holistic environments that promote wellness.

One compelling case study was The Spine, one of the world’s healthiest buildings. It sits amongst just 12 in the UK to achieve Platinum level in the WELL Core Certification.

Healthy building case studies

The Spine

The building prioritises high air quality, optimal lighting and biophilic design to enhance occupant wellbeing.

A common misconception is that integrating such sustainability and health-focused features significantly increases costs; the project defies this expectation.

Beyond its energy efficiency and health-focused design, The Spine demonstrates the potential of circular economy principles in construction.

For example, the carpets used throughout the building are made from upcycled fishing nets, reducing waste while maintaining high quality interior finishes.

Projects like The Spine also showcase the power of technology. Advanced air filtration systems not only reduce pollution but can also demonstrably improve cognitive function and productivity.

Simultaneously, the emphasis on biophilic design, incorporating natural materials, daylight and connections to nature, underscores that healthy design doesn't necessarily equate to increased costs. Beyond specific technologies, the focus on inclusivity is crucial.

Read more about the project on our website. →

Woodmill and St Columba's RC High School

The school demonstrates how energy efficiency, airtightness, and sustainable materials can be achieved at scale. (01)

As the UK's largest Passivhaus education building, it provides an inspiring, comfortable and future-proofed learning environment.

Designed to Passivhaus standards, it embodies a forward-thinking, environmentally conscious design approach, which shapes, inspires and supports the community now and into the future.

Read more about the project on our website. →

Clinic Building, University of Salford

The University of Salford's School of Health and Society building demonstrates a user-centric approach. (02)

By integrating trauma-informed design, equitable access and neurodiversity-friendly principles, it sets a precedent for how buildings can be both sustainable and truly inclusive.

This highlights the importance of considering diverse cognitive and sensory needs, moving away from the often sterile and overly efficient environments of traditional building design.

Read more about the project on our website. →

1–21 St Cuthbert's

A thoughtfully designed, sustainable supported living development, located in the heart of Bonnyrigg's town centre. (03)

The scheme consists of 20 apartments for residents aged 55 and over, as well as individuals with learning disabilities.

Certified to Passivhaus Classic standard, the development prioritises comfort, health and energy efficiency. Through carefully considered design choices, it provides a safe and independent living environment, free from fuel poverty and optimised for wellbeing.

Read more about the project on our website. →


01


02


03

Addressing the skills gap through education and training

A skilled workforce in sustainable construction and building management is essential for achieving net zero, yet a significant skills gap remains—a recurring challenge from 2023.

Regional initiatives like the West Yorkshire Opportunities Map present a promising approach to integrating biodiversity into decarbonisation by connecting fragmented natural spaces. However, their success depends on professionals with ecological and sustainability expertise.

Closing this gap requires embedding sustainability principles into education and training.

By equipping future professionals with net zero and Biodiversity Net Gain (BNG) expertise, we can ensure sustainability goals translate into real-world impact. Without these skills, progress risks stalling. Investing in training today is key to a resilient, sustainable future.

In Leeds, discussions around BNG highlighted key challenges: inconsistent ecological assessments, difficulties in measuring impacts, and a shortage of trained ecologists.

Successful BNG implementation demands professionals skilled in ecological assessment and biodiversity-focused planning.

These issues were a key focus in our podcast, where experts explored the relationship between people, nature, and urban sustainability—reinforcing the need to equip professionals with the right knowledge to support biodiversity recovery in the built environment.

Listen to our podcast episode to explore how architects, developers, and planners can support ecological resilience in cities. →

AHR Podcast Series

Leveraging technology and innovation

Throughout our discussions, technology and user behaviour came out as critical to achieving energy efficiency.

AI, digital twins and real-time performance monitoring emerged as game changers in optimising energy use and enhancing occupant experiences.

One intriguing innovation is the use of AI to develop predictive behaviours within building management systems (BMS).

By learning from historical data and real-time inputs, AI-driven BMS can anticipate energy demands, adjust building operations dynamically and encourage more efficient occupant behaviours.

Real-world applications in cities across the UK demonstrate how these technologies are already transforming urban energy management.

Smart metering systems provide real-time insights into energy use, encouraging occupants to adopt more efficient behaviours.

At the same time, digital twins of buildings and urban areas track real-time energy performance, enabling data-driven retrofit decisions and supporting long-term sustainability goals.

Tools like our toolkit further highlight the power of data-driven decision-making in sustainable building strategies.

By offering early-stage, tailored recommendations, it helps building owners prioritise interventions that balance capital cost, energy savings and embodied carbon reduction, ensuring practical and impactful improvements.

Inspiring change

As we move forward, the challenge is not just to continue the conversation—but to turn these discussions into decisive action.

By working together, sharing knowledge and embedding sustainability into every aspect of design and construction, we can create a built environment that benefits both people and the planet.

We remain dedicated to leading and facilitating this transformative journey toward our shared sustainability objectives. If you're interested in shaping the future of decarbonisation, we invite you to join the conversation. Keep an eye out for more roundtable events in 2025.

Get in touch

If you've got a project you'd like to discuss, we'd love to hear from you. **Contact us** →

www.ahr.co.uk