



# SE2050 EMBODIED CARBON ACTION PLAN

2025





# OUR PLEDGE

## Reducing Embodied Carbon in Structural Systems

WSP USA (WSP) is committed to reduce embodied carbon in the structural systems of our projects and contribute to industry-wide change as a signatory of the Structural Engineers 2050 Commitment (SE2050) Program. Our Embodied Carbon Action Plans (ECAP) is updated annually to reflect our evolving journey towards these goals. Since becoming a signatory in 2021, we've aligned business goals to support reduction of embodied carbon, created internal training for WSP engineers and maintained interdisciplinary focus groups for knowledge sharing. WSP is also educating clients, developing and using tools for embodied carbon measurement, and incorporating embodied carbon considerations in our design decision-making process.

We will look for opportunities to:

- **Advocate** for the incorporation of lower-carbon structural systems where practical and incorporate holistic decision-making processes that look beyond cost to help compare these systems early in our design process
- **Explore** the small decisions within structural systems that can have significant impacts on the carbon in our designs
- **Include** language in our standard specifications that supports the procurement of lower-carbon materials
- **Fund and participate** in research that supports the adoption of lower-carbon structural materials
- **Educate** our teams, partners and clients so that they can identify opportunities for carbon reduction on their projects while obtaining skills and resources to implement change.





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# INTRODUCTION

## About WSP USA

### Leading the Way in Engineering and Sustainability

WSP USA is the U.S. operating company of WSP Global, one of the world's leading engineering, environmental and professional services firms. Recognized in 2023 on TIME's list of the world's best companies and Fortune's Change the World list, WSP is driving social impact and commitment to ESG. WSP brings together engineers, planners, scientists, technical experts, strategic advisors and construction management professionals in the buildings, transportation, energy, water and environment markets. With approximately 14,000 employees in 300 offices across the U.S., WSP partners with its clients to help communities prosper.

In alignment with the goals of SE2050 and in recognition of the various commitments and services provided across our business lines, this ECAP will apply to our Building Structures group within Property and Buildings of WSP USA (legal entity: WSP USA Buildings Inc.) and will be supported by our Structural Engineering and Built Ecology Practices, both within our Property and Buildings group. WSP also provides related services in Climate, Resilience and Sustainability as well as Sustainability, Energy and Climate Change (among others).

### Structural Engineering

[Our structural engineering team](#) of world class professionals are thought leaders, creative designers and collaborative partners for our clients' most challenging projects. Born from the union of four key legacy firms in the U.S. – Cantor Seinuk, Halvorson, Englekirk and Odeh Engineers – our national building structures practice spans over 75 years and includes iconic projects throughout the world.

Partnering with owners, architects, developers and contractors, we deliver Future Ready® buildings that perform well while positively impacting society and the environment. Our collaborative approach helps our clients find solutions that meet their structural needs for new construction, building evaluation, building rehabilitation, facilities engineering, historic preservation, peer review, forensic analysis and more.

### Built Ecology

[WSP's Built Ecology practice](#) is an integrated national team within Property and Buildings that works with clients to create a sustainable built environment. Our professionals bring strategic thinking, industry leadership and technical depth in collaboration with WSP USA's buildings, transportation and infrastructure, water and environment, and advisory groups. From microgrids to sustainability reporting, to high performance design and building certification, we offer a depth and breadth of service that is unmatched in the sustainability consulting or engineering fields.

### Our Future Ready® Approach

Through our Future Ready® program, we evaluate trends, such as embodied carbon, through four key lenses: climate, society, technology and resources, and invest in innovations to address these trends and create more resilient societies. We endeavor to collaborate with our clients and partners to design Future Ready® projects that are designed for the future as well as today. Our [Global Environmental, Social & Governance \(ESG\) Statement](#) defines our objectives and approach to embedding sustainability in our services and advice to clients, in our operations and in the communities in which we work.

### Specialty Teams

[WSP's specialty teams focused on climate, resilience and sustainability](#) have been helping clients measure and reduce life cycle carbon emissions for more than two decades. We conduct rigorous analyses for clients to quantify embodied carbon and other environmental impacts of their projects and buildings—from data centers and commercial buildings to transportation infrastructure and multi-family housing. Read more about our sustainability, energy, and climate change services at the link above.

Future Ready® is a registered trademark of WSP Global Inc. in Canada, Colombia, the United States and New Zealand. WSP Future Ready (logo)® is a registered trademark of WSP Global Inc. in Europe, Australia and the United Kingdom.



Groton Hill Music Center,  
Credit: Robert Benson Photography





WSP Office, BIM Immersion Room

# EDUCATION

To reduce the embodied carbon in our structures, we must constantly listen, learn and share to ensure that we consistently evolve. Our core knowledge-sharing efforts are accomplished through the following methods:

## Learning and Development

### US Building Structures Sustainability Community

Our Sustainability Community maintains a dedicated SharePoint site to provide a roadmap for education as well as easy access to internal resources and external educational materials. We have two national Embodied Carbon Champions in addition to regional champions who meet regularly and support implementation of the ECAP. This internal community of structural engineers provides the foundation of our internal education system. Working together, community members are responsible for gathering and maintaining resources, developing company standards and best practices and providing an inclusive forum for conversation.

### Beyond Structures

Our U.S. structural engineers are supported by cross-disciplinary groups like our U.S.-wide Embodied Carbon Task Force, which provides ongoing virtual opportunities to connect leaders from our Building Structures, Transportation Structures, Built Ecology and Climate, Resilience and Sustainability specialty services groups together to share knowledge. Groups like these are supported by our global decarbonization group and other Global Practice Area Networks (PANs) that connect our network of professionals.

## Internal Presentations

### Structural Development Hours (SDH)

Once a year, our monthly meeting for structural engineers is led by our sustainability community and Future Ready® leaders to share a project spotlight, reflect on the year’s progress and provide an update on the current sustainability initiatives. As-needed updates are provided by the community at SDHs throughout the year.

### Summer Series

As part of onboarding of new hires and our summer intern program, WSP’s [Developing Professional Network at WSP](#) hosts weekly educational sessions. One of these sessions introduces the sustainability community, basic concepts of embodied carbon and ways to get involved for all new and developing professionals.

### Additional Training

The sustainability community curates educational resources for engineers at each stage of their carbon education path. Participating engineers are required to self-certify that they have completed a minimum of one hour of training annually from the suggested resources. This approach allows our team members the opportunity to complete the training most beneficial to them.



# REPORTING

## Enhancing embodied carbon tracking in building projects

WSP is committed to enhancing embodied carbon tracking on projects designed by our building structures team. We intend to build a database of our projects that is usable by our engineers to benchmark their projects at various stages of design and will continue to share this data with our peers through the SE2050 database.

While we are committed to reporting on both building and transportation projects to represent more of the built environment, we have separated our Buildings and Infrastructure projects to greater align with the SE2050 and Infrastructure2050 commitments. This change acknowledges the fundamental differences in our project structure while we continue to collaborate and share knowledge across disciplines.

Currently, our reporting focus and subsequent submission to the SE2050 database includes cradle-to-gate emissions (A1-A3), with an effort to accurately capture material quantities for all structural materials. While our reporting has frequently included Whole Building Life Cycle Assessments completed by the practitioners in our Built Ecology group, we feel it is important to shift the process to be performed primarily by our structural engineers, with the support of our Built Ecology group.

We expect that by performing these studies with more frequency, our structural engineers will have greater knowledge and agency to enact change on their projects. We anticipate this shift will help us identify the sources of carbon in our structures with a greater level of detail and identify shortcomings in knowledge or information. This subtle shift in our reporting methodology will inform how we educate, advocate and reduce the carbon in our structures, shifting the knowledge, opportunity and responsibility into clearer focus for our structural engineers.

## We strive to make embodied carbon a routine part of our engineering delivery, from reduction considerations to reporting.

In 2025, we intend to capture more projects and include more project types and materials than previous years. While our focus has previously been on large-scale steel and concrete designs, a substantial part of our portfolio includes wood and timber projects. Although frequently seen as “sustainable” choices, data is often lacking or murky. We intend to better understand the carbon associated with these types of projects.

### 2024 Achievements:

- Submitted at least one project issued for Construction Documents in 2024 from each of the four major national Building Structures groups to the SE2050 Database
- Submitted 10 total projects to the SE2050 Database

### 2025 Goals:

- Submit a minimum of one project for each design studio to the SE2050 Database
- Develop an internal database that can be used for project benchmarking
- Deploy a streamlined workflow for submitting project data to our internal database



Adimab,  
Photo Credit: Timothy Downing,  
Design & Co



# REDUCTION

## Employing diverse strategies to reduce embodied carbon.

WSP considers a variety of embodied carbon reduction strategies in our projects. Strategies range from increasing the percentage of structure reuse and rehabilitation, adaptive reuse, reducing material quantities and incorporating low-carbon materials and material specifications.

Developing a robust data set that allows us to set widespread targets will take time. While we are collecting and processing this data, it is important to remember that change is made one project and one decision at a time. There are opportunities for reduction on every project, including projects perceived as sustainable. Our embodied carbon reduction plan for building structures is outlined below:

### Design Stage

- Influence Early Design Decisions with Data: We have developed simple tools that allow our design teams to rapidly prototype the embodied carbon associated with the structural systems of different design options when a 3D model is not available. We are continuing to provide updates and training for this tool to aid engineers in the decision-making process.
- Influence Early Design Decisions with Methodology: Our teams promote the use of the Choosing by Advantages method, along with similar decision-making tools, which allow teams to place value on structural system attributes in a cost-agnostic manner.
- Support the Use of Lower-Carbon Materials: As a leader in mass timber design, WSP was a founding member of the [REACTS consortium](#) which aims to advance the knowledge and practices surrounding wood design and construction. In an effort support the use of mass timber, we fund and contribute time to research that becomes publicly available.



### Procurement Stage

- Deploying Lower Carbon Specifications: Regionally, our baseline specifications require the submission of Environmental Product Declarations (EPDs) for structural materials on all projects. These specifications have been written to include framework language for requiring a demonstrated reduction of embodied carbon below regional baselines. Our concrete specifications have been adjusted to be more performance based in their requirements, and we now include a suggested method of tracking embodied carbon to aid in monitoring compliance with these requirements. As part of the national specification update and standardization underway at WSP, these requirements will become standard across all our offices.
- Including Embodied Carbon Requirements in our Submittal Review Checklists: By including reference to lower-carbon material specification language in our review tools, we remind our teams to ensure that the project goals that were set during design are upheld during construction.



### Benchmarking Stage

- Database development: As described in the reporting section, we are actively developing a database that will allow us to perform benchmarking across all projects within our portfolio. This research and knowledge gain is an important step for us to be able to identify underperforming projects early in the design stage.
- Improved modeling standards: It is important to continually improve our modeling standards to allow us to more easily report on every project. Our sustainability community and digital delivery team are collaborating on methods to simplify and improve the reporting process.

## Market Impacts

So far, we have seen an incredibly positive market response from our revised specifications. On our largest projects, suppliers in the Boston and Los Angeles markets have demonstrated the ability to reduce the embodied carbon of most mixes by at least 20% below the National Ready Mix Concrete Association (NRMCCMA) regional baseline with minimal cost impact when given the freedom to suggest the appropriate raw materials.

We have also spurred the use of more sustainable concrete and helped prompt the creation of EPDs on smaller projects. By including these requirements in our baseline specifications, we are prompting conversations that haven't previously happened between contractors and developers of smaller projects. We are consistently finding developers who want to make our built environment more sustainable, and we aim to facilitate the creation of at least one new project-specific EPD each year.



Comparison of the embodied carbon associated with different structural systems performed for a client during the concept design phase



# ADVOCACY

## Promoting global embodied carbon reduction

At WSP, we understand the importance of education and advocacy for embodied carbon reduction in the engineering industry, not only nationally but throughout the world. We are committed to educating our employees, our clients and our industry on this crucial topic.

We cannot make meaningful change by ourselves. We have long believed that it is important to share our experiences with our clients and peers so that we may learn together. In addition to individual meetings with our structural engineering peers who reach out, we also try to share our honest experiences through participation in organized events related to sustainability.

## Specifications

We view the incorporation of embodied carbon reductions as a baseline in our specifications as one of the greatest forms of advocacy we can have for our clients. By asking for these reductions and communicating these requirements early in the design process, we encourage an active conversation about the project’s goals with the entire project team.

## Selected 2024 Presentations

- Structures Congress: “Future Ready Structures”, David J. Odeh
- Northwestern University, Masters of Engineering Management: “Future Ready Structures and Designing for Disruption,” David J. Odeh
- Northeast Embodied Carbon Summit: Mass Timber Workshop, Michael Scancarello

## Regional Activities

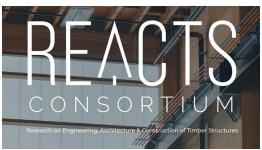
From our participation in events like the decarbonizing concrete working group sponsored by the Boston Society for Architecture (BSA) and Carbon Leadership Forum (CLF) Northeast Hub, we have seen the value in local initiatives. While WSP supports the CLF nationally at the sponsor level, we also encourage our engineers to participate in their local chapters. In 2024, we presented as part of the BSA’s Embodied Carbon Symposium. In 2025, we have challenged offices that have an active chapter of the CLF or similar organizations to get involved in their local group.

## Outreach

A sustainable future is important for everyone. Educating the next generation of structural engineers on these topics is critical to achieving the goals of the SE2050 Commitment. Our university outreach programs and presentations now highlight our commitment to sustainability and offer suggestions for what students can do early in their careers..

## Sponsorships / Memberships:

In addition to SE2050, WSP maintains active sponsorship, membership or participation in the following groups and organizations:



David Odeh, National Director of Building Structures at WSP, presenting at the American Society of Civil Engineers, SEI - Structural Engineering Institute's SEICon24



# EMBODIED CARBON CHAMPIONS



**Michael Scancarello**  
**Assistant Vice President, Building Structures**

Michael has over a decade of experience as a Structural Engineer. He excels in designing and analyzing various structures, conducting structural investigations, and collaborating with design teams to create comprehensive construction documents and provide construction administration services.

Michael has specialized expertise in mass timber design, having worked both as a structural engineer of record and as a designer of connections for mass timber fabricators. He is adept at handling both new construction projects and adaptive reuse or structural renovation of existing buildings.

With a keen interest in modern technologies and Building Information Modeling (BIM), Michael leverages tools like Virtual Reality (VR) to enhance project workflows. He is also proficient in working with point clouds, from data collection to as-built modeling and structural investigations.

Passionate about sustainability, Michael is an active participant in the sustainability community and serves as an SE2050 embodied carbon champion for the team. He is dedicated to making our built environment more sustainable.



**Eli Rose**  
**Consultant, Building Structures**

Eli has been a structural engineer in North Providence, RI since 2021, providing structural design services as the engineer of record for both new building construction and adaptive reuse projects in the Northeastern United States. As a project engineer, Eli has engaged with owners, coordinated with architects, managed project teams, performed structural analysis, and developed structural BIM models from early design through construction completion.

Eli's expertise spans various construction materials, including steel, reinforced concrete, mass timber, light-framed wood, and masonry. One of Eli's most rewarding projects was designing a community music center built from mass timber, located just a few blocks from home. This project ignited Eli's passion for sustainable building structures and led to the role of curator for WSP's US-Building Structures Sustainability Community. In this capacity, Eli educates fellow engineers on sustainable structural engineering practices and identifies opportunities to integrate these practices into their work.





# FORWARD-LOOKING STATEMENTS

In addition to disclosure of historical information, WSP may make or provide statements or information in this report that are not based on historical facts or current facts, and which are considered to be forward-looking information or forward-looking statements under Canadian securities laws.

Forward-looking statements relate to future events or future performance and may include, but are not limited to, estimates, plans, expectations, opinions, forecasts, projections, guidance or other statements that are not statements of fact, including in particular, our corporate ESG objectives which include, without limitation, our objectives concerning supporting the industry in reducing embodied carbon in all types of project, reducing and ultimately eliminating embodied carbon in its structural system projects by 2050, measuring and reducing emissions from our designs and advice, promoting completion of our embodied carbon training, developing custom carbon measurement tools, developing training, focusing on cradle to gate emissions, increasing the percentage of structural engineers trained on embodied carbon, developing a standard building specification, educating WSP employees, clients and the broader industry, advocating reduction of embodied carbon.

A statement made is forward-looking when it uses what we know and expect today to make a statement about the future. Forward-looking statements can typically be identified by terminology such as “may”, “will”, “should”, “expect”, “plan”, “anticipate”, “believe”, “estimate”, “predict”, “forecast”, “project”, “intend”, “target”, “potential”, “continue” or the negative of these terms or terminology of a similar nature. Forward-looking statements, by their very nature, are subject to inherent risks and uncertainties and are based on several assumptions, both general and specific, which give rise to the possibility that actual results or events could differ materially from our expectations expressed in, or implied by, such forward-looking statements and that our business outlook, objectives, plans and strategic priorities may not be achieved.

These statements are not guarantees of future performance or events, and we caution you against relying on any of these forward-looking statements. Forward-looking statements are presented in this statement for the purpose of assisting readers in understanding, in particular key elements of our ESG objectives, and in obtaining a better understanding of our anticipated operating environment. Readers are cautioned, however, that such information may not be appropriate for other purposes.

We have made certain operational and other assumptions in preparing the forward-looking statements contained in this report. In particular, our ESG objectives are based on a number of assumptions including, without limitation, the following principal assumptions: sufficiency of internal and external resources, availability of data needed to estimate embodied carbon emissions, effectiveness of existing carbon measurement tools, our ability to create custom carbon measurement tools, client willingness to prioritize carbon reduction, availability of low-carbon products, and other assumptions described in the “Forward-Looking Statements” sections of our most recent Global ESG Report, which sections are each incorporated by reference into this cautionary statement and which document is available on our website. If our assumptions turn out to be inaccurate, actual results or events could be materially different from what we expect.

Important risk factors that could cause actual results or events to differ materially from those expressed in, or implied by, the previously-mentioned forward-looking statements and other forward-looking statements contained in this report, include, but are not limited to factors such as: failure to collect data required to estimate embodied carbon emissions; failure to identify or develop scalable carbon measurement tools; failure to obtain client approval for carbon measurement and/or use of low-carbon products; existing codes and standards that prohibit certain design changes and/or material substitution; low-carbon product availability and cost; the failure to implement sufficient corporate and business

initiatives; failure of governments to commit to reduce GHG emissions and mitigate the impacts of climate change, as well as other risks detailed from time to time in reports filed by WSP Global Inc. with securities regulators or securities commissions or other documents that WSP Global Inc. makes public, which may cause events or results to differ materially from the results expressed or implied in any forward-looking statement.

Risk factors stated above and other risk factors that could cause actual results or events to differ materially from our expectations expressed in, or implied by, our forward-looking statements are discussed in this statement as well as in WSP Global Inc.’s most recent annual Management’s Discussion and Analysis, which “Risk Factors” section therein is incorporated by reference into this cautionary statement.

WSP’s forward-looking statements are expressly qualified in their entirety by this cautionary statement. The forward-looking statements contained in this report are subject to change. Except to the extent required by applicable securities laws, we do not undertake any obligation to publicly update or revise any forward-looking statements contained in this statement or otherwise, whether as a result of new information, future events or otherwise. Readers should not place undue reliance on forward-looking statements.







## About WSP

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