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Submitted by
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Sustainable Design Team

Embodied Carbon Action Plan

DeSimone

Winthrop Center —
The largest commercial passive
house building in the world.



Summary

DeSimone recognizes the importance of reducing the carbon footprint of the built environment and supports the goal to reach net-zero structural designs by 2050. To this end, we have created this embodied carbon action plan for our fourth year, beginning January 1, 2026.

Our strategy is to enable project teams to make win-win sustainable design decisions, as outlined according to the four initiatives below. In recognition of the growing urgency for firm-wide participation, we have reorganized our Sustainability Team within this past year to expand membership and establish focused subcommittees aligned with each reporting category.

Education

We will continue to engage in sustainable design discussions focused on embodied carbon, provide internal webinars, and promote our core sustainability values.

Reporting

We will perform a minimum of five Life Cycle Assessments, report the results to SE2050, and engage clients in embodied carbon goals for their projects.

Reduction

We will incorporate embodied carbon snapshots into our workflow for early design decisions and continue to explore emerging strategies for reduction.

Advocacy & Knowledge

We will engage with clients in discussions about evolving Embodied Carbon policies as well as our SE2050 and IStructE commitments and will advocate for including embodied carbon reduction as one of the project goals.

The Embodied Carbon Action Plan

DeSimone is committed to reducing the carbon footprint of the built environment and believes that it is an additional lens through which all projects should be viewed. Together with cost and constructability, sustainability must be included to form the basis by which to judge all future successful projects. We envision a firm-wide movement and body of expertise but recognize that a gap exists in formal education for sustainable design in structural engineering. To this end, we have created this Embodied Carbon Action Plan to guide our firm's adoption of these principles.

Liberty Museum — A native roof insulates the museum, manages stormwater, and blends the structure with the landscape. —





In recognition of regional differences in material availability, construction workforce, and policy landscapes, our main goal is to provide all engineers with the tools and resources necessary to make sustainable design decisions in their fields of expertise and regions. Only through mobilizing all sectors and regions will we, as engineers, be able to meet a goal of net-zero embodied carbon.

Our plan is informed by our belief that structural design bridges science and humanity. Engineers can achieve net-zero structural designs and will further innovate to create a world where humans and the biosphere flourish in harmony.

We define sustainable design as a process that maximizes value for all while minimizing negative impacts. In the context of our structures, this involves improving safety, adaptability, durability, functionality, and aesthetics while minimizing environmental and financial costs, among other factors. Our strategy focuses on resourcing our engineers and partners to make win-win sustainable design decisions.

The Sustainable Design Team

The team advances the sustainability of structures by curating resources that guide designers to select both sustainable materials and design techniques. The team consists of four, multifaceted groups:

Teammate Engagement Group: Promoting sustainable design practices and curate resources for firm-wide use.

Innovation Group: Staying informed about the latest innovations in the world of sustainable design while keeping specifications aligned with evolving goals and policies.

Advocacy Group: Evaluating internal policies while also engaging stakeholders to collaborate and share knowledge.

Data Reporting Group: Promoting LCAs for all projects while identifying project suitable for Embodied Carbon Case Studies.

Four Initiatives

Over our commitment to SE2050 and through our alignment with IStructE and UKGBC, we have made some strides in reducing embodied carbon and understanding industry challenges. Through knowledge sharing and growing client interest, more DeSimone employees recognize the urgency of reduction efforts. Our sustainable notes and specifications are used on multiple projects, sharpening client discussions on cost-effective methods.

As our expertise grows, challenges remain — slow client adoption, limited green building certification focus, and cost concerns. Despite this, momentum is building, and industry interest is rising.

1. Education

Engineers are equipped with tools to understand, measure, and reduce embodied carbon across all project aspects. The sustainable design team oversees education, implemented as follows:

Office Engagement

Project team engagement around embodied carbon reduction through educational webinars and performing LCAs on select projects.

Internal Webinars

Release of at least one webinar focused on embodied carbon to employees covering sources, measurement, and reduction. In 2025, we provided one webinar, entitled “Sustainability 2.0, Call to Action” available to all staff.

Embodied Carbon Digital Resource

Curation, maintenance, and promotion of internal resource page including presentations and discussion forums.

CLF Regional Hub

Engagement between the local regional hub and members of the Sustainability team with subgroups concerning engagement and innovation.

2. Reporting

Our path to net zero will require consistent reductions in embodied carbon to be achieved every year. To track our progress towards net zero, we will measure the embodied carbon of our projects and report the results to SE2050.

In support, we will continue to measure the embodied carbon of our projects and report the results to SE2050 in the US and align our UK-based work with benchmarks set by the Institution of Structural Engineers (IStructE) and the RIBA 2030 Climate Challenge. Additionally, we believe it is essential to get our clients onboard with carbon reduction. For the next year, our reporting goals will be as follows:

Project Submissions

Submittal a total of five projects across our firm to the SE2050 Database in 2025. In 2025, we submitted 18 projects into the 2050 database.

Compare

As our database of LCAs grows, creation of a dashboard highlighting and comparing the differences between projects regions, and offices while targeting means of improvement. We intend to house this information on our new intranet site.



Sendero Verde —
The largest residential passive
house building in the world.

3. Reduction

From infancy, past due diligence, our team's goal is to fast-track our embodied carbon reduction as follows:

Reduction Targets

Using our database, including Embodied Carbon benchmarking in our standard QA/QC process to highlight projects that need Embodied Carbon strategies with the goal a unified approach using industry-accepted benchmarks provided by CLF and LETI.

Workflow for Early Decisions

Developing a workflow that makes it easier to make early design decisions based on embodied carbon.

Compare Options

Including embodied carbon assessments in our early concept designs in addition to traditional metrics (cost, weight, depth, etc.)

Research

Researching emerging sustainability technologies, covering material science (concrete, wood, steel, composites), optimized structures, biophilic design, and carbon sequestration.

4. Advocacy and Knowledge

Embodied carbon reduction must be a universal goal within the industry, and to that end, we plan on sharing our knowledge outside of our firm. Over the past year, we developed outward-facing documents that describe our capabilities in measuring and reducing embodied carbon, and we continue to share them with our clients. For the coming year, we aim to achieve the following:

Client Engagement

Engagement with clients and describe the importance of reducing embodied carbon, and collaboration with other project stakeholders to include reducing embodied carbon as one of the project goals.

Aligning in the UK with guidance from IStructE, UKGBC, and the RIBA 2030 Climate Challenge while ensuring embodied carbon is considered early in the project lifecycle in collaboration with stakeholders for project objective definition.

SE 2050

Declaring ourselves an SE2050 member in our boilerplate qualifications surrounding sustainability and inviting conversation about making low carbon design part of project goals.

2025 Insights

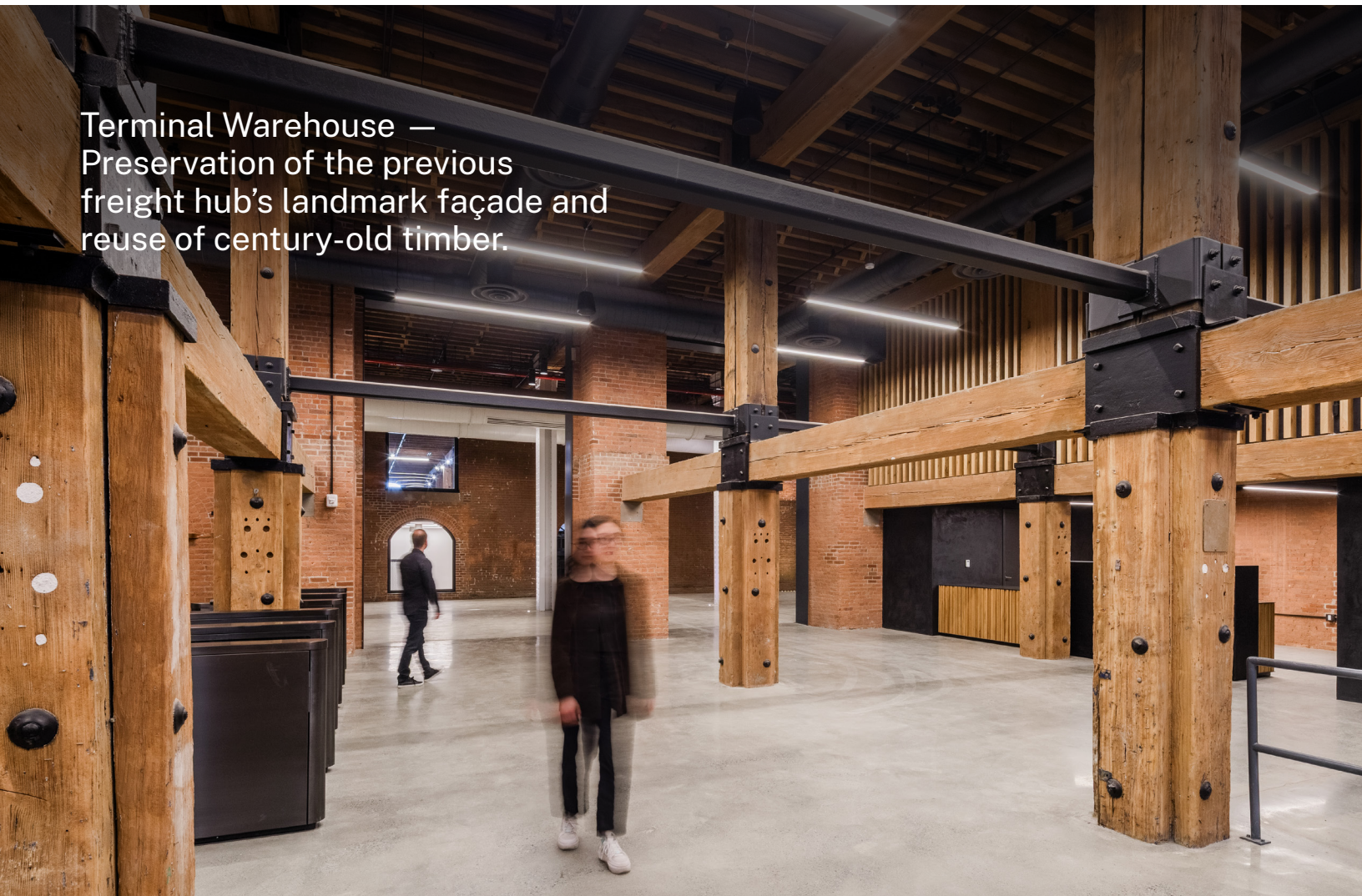
Accomplishments & Growth

- The advancement of the education initiative began by expanding participation in our LCA program with projects now representing six offices.
- Our Sustainable Design Team Leader made two presentations to our senior leadership presenting our vision for promoting a sustainable culture at the firm.
- Following a rebrand, planning for the development of a new intranet began which will centralize sustainability content and resources in one accessible hub for all team members.
- Active engagement from our team within their local CLF regional Hub formed and moving forward, a dedicated engagement team will continue to increase commitment.

Areas of Improvement

- Due to several factors, reorganizing the team took longer than expected and resulted in some stalled progress and initiatives.
- Promoting internal resources and knowledge sharing is more difficult than expected given the wide range of project types, design methodologies, and political landscapes throughout our international and domestic offices.
- Several promising projects involving ambitious carbon reduction goals got scaled back or paused due to economic factors.
- Embedding embodied carbon into early design decisions is evolving and requires firm-wide knowledge, participation, and stronger standards.

Terminal Warehouse —
Preservation of the previous
freight hub's landmark façade and
reuse of century-old timber.



Our Global Project Team



North America

North America
Chicago
Dallas
Dayton
Foxborough
Houston
Las Vegas
Miami
New Haven
New York
Overland Park
San Francisco
Vancouver

South America

Medellín
Santiago

Europe

Hebden Bridge
Manchester
London

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