

Embodied Carbon Action Plan

Designing Today for a Net-Zero Tomorrow



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Letter From Leadership



At Fortis Structural, we recognize both the responsibility and the opportunity we have as engineers to shape a more sustainable built environment. The SE 2050 Commitment provides a clear framework for reducing embodied carbon, and we are proud to continue advancing that mission through our 2026 Action Plan.

Our approach is grounded in the core values that define how we work and who we are. Adaptability drives us to continuously evolve our design practices as new materials, tools, and data become available. As the industry progresses, so do we, embracing innovation and refining our processes to deliver lower-carbon solutions without compromising performance.

Through collaboration, we engage closely with architects, contractors, and owners to integrate sustainability goals from the earliest stages of a project. Meaningful reductions in embodied carbon happen when teams align early and work together with shared purpose.

We prioritize responsiveness by staying attuned to both client needs and the urgency of climate action. Whether navigating project constraints or responding to emerging sustainability standards, we act with intention and agility.

Our commitment to technical excellence ensures that every solution we deliver is grounded in rigorous analysis, sound engineering judgment, and a deep understanding of material performance. We believe that sustainable design must also be durable, efficient, and constructible.

Finally, creative problem solving is at the heart of how we approach complex challenges. Reducing embodied carbon often requires rethinking conventional approaches and we are energized by the opportunity to find smarter, more efficient ways to build.

As we move forward in 2026, Fortis remains committed to transparency, accountability, and measurable progress. We will continue to track our data, refine our benchmarks, and share our lessons learned contributing to a broader industry shift toward a more sustainable future.

We are proud of the progress we've made and motivated by the work ahead.

Fortis Structural Leadership Team



SE2050 Team



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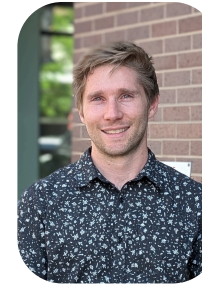
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Education Plan



In 2025, Fortis Structural continued to advance its internal education and knowledge-sharing efforts around embodied carbon. Members of the SE 2050 group attended the Embodied Carbon Summit in Boulder, Colorado, with two team members participating in the Embodied Carbon 101 track and two attending the SE 2050 Signatory Summit. Following the conference, attendees consolidated key takeaways and presented them to the broader firm through an internal lunch-and-learn, helping to disseminate current industry knowledge and best practices across all teams.

In addition, the firm proactively engaged with emerging industry guidance by reviewing the SEI Prestandard for Assessing the Embodied Carbon of Structural Systems for Buildings. Using this framework, Fortis developed an internal spreadsheet tool to standardize and streamline the firm's life cycle assessment (LCA) process, improving consistency, efficiency, and alignment with SE 2050 reporting expectations.

Education Plan



INTERNAL EDUCATION STRATEGIES

Fortis Structural will continue to expand internal education efforts to support embodied carbon reduction across all projects. In 2026, the firm will:

- Participate in industry conferences and SE 2050 events to stay current with best practices.
- Share knowledge through internal lunch-and-learns and firmwide presentations.
- Provide training on the firm's standardized LCA workflow based on the SEI Prestandard.
- Integrate embodied carbon discussions into project workflows through collaboration with the SE 2050 group.
- Support ongoing learning through webinars, technical resources, and industry publications.

Education Plan



TRACKING AND CONTINUOUS IMPROVEMENT

Fortis Structural will track and refine its education efforts to ensure continuous improvement. The firm will:

- Track participation in internal and external training opportunities.
- Maintain a library of internal training materials and presentations.
- Monitor use and effectiveness of the firm's LCA tools and workflows.
- Collect staff feedback to identify gaps and improve training.
- Review progress annually and update strategies in alignment with SE 2050 goals.



Advocacy

As part of our ongoing commitment to the SE 2050 program, our firm recognizes the importance of advocacy in driving industry-wide changes toward a more sustainable built environment. Our firm encourages staff involvement in advocacy initiatives through:

- **Collaboration with Industry Partners:** working alongside architects, contractors, and material suppliers to advocate for low-carbon material selection and design strategies focused on structural and carbon efficiency.
- **Engagement with Professional Organizations:** supporting team members with involvement in local and national organizations, including the Structural Engineers Association of Colorado Sustainable Design Committee, Carbon Leadership Forum, and the Structural Engineering Institute.
- **Client and Project Advocacy:** engaging in early-stage discussions on projects to introduce embodied carbon as a key design consideration, and suggesting structural efficiencies and alternate material selection as options for reducing our carbon footprint.
- **Policy and Code Development:** staying engaged and informed about local policy changes and code developments, as well as educating our clients on new and future requirements to reducing embodied carbon in our buildings.

By championing embodied carbon reduction beyond our own projects, we aim to foster a culture of sustainability across the structural engineering profession and contribute to a resilient, low-carbon future.



**Collaboration with
Industry Partners**



**Engagement with
Professional Organizations**



**Client and
Project Advocacy**



**Policy and
Code Development**



Reduction Strategy

We are continuously refining our strategies to reduce and understand embodied carbon in structural systems. Through our experience working with clients on structural system(s) selection, material specifications, and optimization of structural elements, we have taken the following steps in reducing our carbon footprint:

- Updated our concrete specifications to require mix designs meet the limitations set forth in the Denver Green Code.
- Updated our concrete specifications to request contractors submit Environmental Product Declarations (EPDs) for each mix design, so that we can use this data to accurately track the concrete embodied carbon of our buildings and ensure transparency in carbon impacts.





Reduction Strategy

Looking ahead to the next year, our reduction strategy will continue to focus on integrating carbon-conscious decision making into our design process, optimizing material efficiency, and collaborating with industry partners.

As a firm we aim to:

- Conduct preliminary LCA studies during concept design to compare structural system options and present the lowest-carbon solutions to the client.
- Focus on material efficiency: reducing material use is one of the most effective strategies for lowering embodied carbon. Our firm employs the following best practices:
 - Designing and encouraging architects to provide efficient load paths and minimizing material usage.
 - Exploring the use of high-strength concrete, optimized steel sections, and mass timber, where feasible.
 - Promoting off-site fabrication of wood or cold-formed panels to reduce waste and improve construction efficiency.
- Engage material suppliers and builders early to identify low-carbon alternatives and innovative construction techniques.
- Document embodied carbon data for a larger number of projects firm-wide and comparing against industry benchmarks so we can continue to assess our progress toward effectively reducing carbon.



Reporting



As part of our SE 2050 commitment, our firm is dedicated to transparent reporting on embodied carbon metrics across our projects. By analyzing and sharing data, we aim to track progress, identify trends, and contribute to industry-wide benchmarking efforts. This section provides an overview of embodied carbon data from three recent projects, highlighting key performance indicators:

PROJECT	SIZE (sf)	USAGE	PHASE LCA EVALUATED	# STORIES	VERTICAL GRAVITY SYSTEM	TOTAL GWP ¹
Peak Kia	32,492	Commercial	Construction	2 + Roof Level	Steel: Slab on Metal Deck at Level 2. Steel Deck on Joists + Steel Framing at Roof	331,994 kg CO2-e
2000 Welton	119,340	Multi-Family Residential	Construction	7 + Roof Level	Wood/Concrete: Timber Framing on P/T Parking and Podium Transfer Level	1,276,306 kg CO2-e
Ford Apartments	82,740	Multi-Family Residential	Construction	5 + Roof Level	Steel/Concrete: Composite Slab on Metal deck, P/T Podium and CF Bearing Walls	1,847,355 kg CO2-e
The Amble	107,413	Multi-Family Residential	Construction	4 + 1 Partial Dormer Roof Level + 1 Below Grade	Steel: Composite Steel Framed Podium and CF Bearing Walls	4,308,183 kg CO2-e
Mines Park Housing #1	33,485	Multi-Family Residential	Construction	4	Wood: CLT Floor Panels on Wood Stud Walls	440,434 kg CO2-e
Mines Park Housing #2	55,588	Multi-Family Residential	Construction	5	Wood: CLT Floor Panels on Wood Stud Walls	603,472 CO2-e

1 - GWP = Global Warming Potential for Life-Cycle stages A1-A3, cradle-to-gate

We conducted all our Life Cycle Assessments using Beacon, ensuring a consistent and data-driven approach to measuring embodied carbon. Moving forward, we aim to standardize our firm-wide process for conducting LCAs to improve efficiency and comparability across projects. We will compare our project data against SE 2050 baselines to assess performance and help us identify carbon-intensive materials and explore opportunities for reduction.

Reporting

Lessons Learned and Future Improvements:

- Challenges and Opportunities: constraints such as cost, availability of low-carbon materials, and project-specific design requirements (including architectural or owner-driven requirements) influence GWP outcomes, highlighting the continual need for education and understanding of embodied carbon.
- Next Steps: we look to continue to refine our data collection process and involve more people firm-wide in data collection, expand our project analysis, and engage with project design teams to drive reductions.

By consistently reporting embodied carbon metrics and increasing the number of projects we assess, we aim to refine our reduction strategies and contribute valuable insights to the SE 2050 community.

