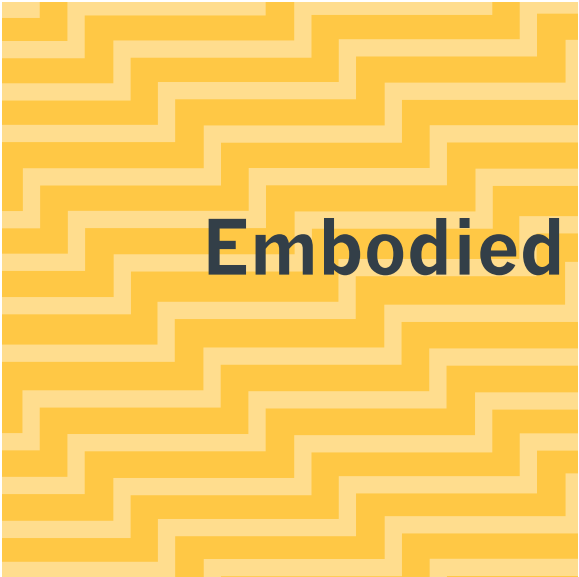
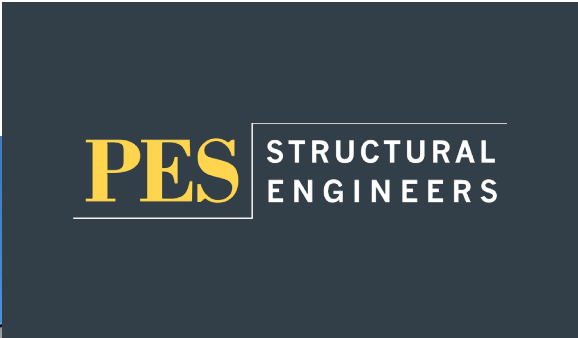




Embodied Carbon Action Plan



PES STRUCTURAL
ENGINEERS



Your Partner in Design.

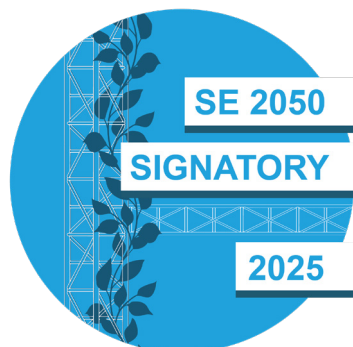
Why PES?

Your Vision, Delivered with Precision. Rooted in a legacy of technical excellence and collaboration, we partner with you to bring your vision to life. From concept to completion, our adaptive and responsive teams ensure seamless execution, helping you stay on schedule while overcoming obstacles. With advanced expertise and a flexible approach, we craft tailored solutions that align with your unique goals, delivering results that strive to exceed expectations.

Structured for Your Success. PES was founded on a tradition of innovators and achievers, and that same entrepreneurial spirit drives us today. We thrive on a unique blend of personal empowerment and open collaboration that brings together diverse perspectives to achieve the best results. Our unwavering commitment to continuous learning and professional development supports your success at every stage.

Mastering Materials, Elevating Structures. With expertise across diverse materials and structural systems, we deliver tailored approaches that meet your unique project needs. Deep technical knowledge paired with innovative applications and a client-first approach enables us to achieve exceptional results while also remaining committed to advancing industry standards. We recognize the critical role structural systems play in embodied carbon emissions. We are committed to reducing the environmental impact of our designs by integrating sustainable materials, optimizing structural efficiency, and advocating for industry-wide change.

Innovating Structures, Advancing Possibilities. Blending hands-on expertise with our early adoption of industry-leading technology platforms, we create efficient high-performing designs. From advanced modeling to seamless workflows, technology enables us to meet diverse client needs and deliver precise solutions.





Sustainability Committee

SE2050

Our SE2050 Committee is committed to advancing research and promoting knowledge sharing around sustainable design practices in structural engineering. Our primary focus is active participation in the Structural Engineers 2050 Commitment Program (SE2050), a nationwide initiative aimed at achieving net-zero embodied carbon in structural systems by 2050.



SE2050 Committee Members

Top Row (left to right): Will Shirley, EIT, Project Engineer; Lindsay Schneider, PE, SE, Assistant Project Manager; and Austin Lucas, EIT, Project Engineer

Second Row (left to right): Kelsey Hammond, EIT, Project Engineer; Cornelius Walker, EIT, Design Engineer; and Mary Helvie, EIT, LEED GA, ENV SP., Design Engineer

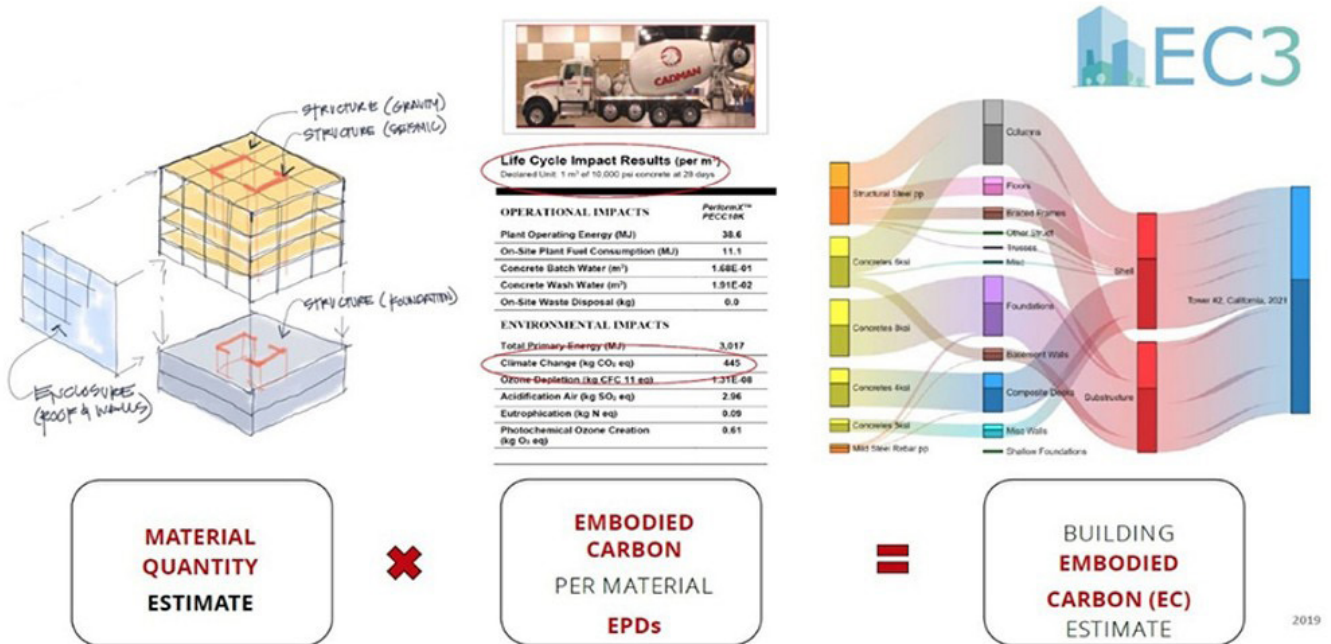
Material Selection & Optimization

As part of our Embodied Carbon Action Plan (ECAP), we are committed to making informed, strategic material choices that reduce environmental impact. This includes prioritizing the use of low-carbon concrete mixes, particularly those incorporating supplementary cementitious materials (SCMs) such as fly ash and slag to significantly lower cement-related emissions. We also specify high-recycled-content steel and responsibly sourced timber to minimize the carbon footprint of our structural systems. Additionally, we actively evaluate and incorporate alternative and emerging low-carbon materials where feasible, aligning innovation with sustainability across every stage of design and construction.

Overlying Strategies for Embodied Carbon Reduction	
Build Smart	• Locate heavy equipment on ground floor • Determine optimized structural layout via bay studies • Discuss with client if there are opportunities to remove transfer elements
Evaluate Design Methods	• Verify loading criteria is reasonable • Avoid overdesign - be mindful of D/C utilization ratios • Review typical details and confirm suitability for the project-specific application
Implement Circular Design Principles	• Consider incorporating salvaged materials for a renovation project • Discuss with project team if design for adaptability or destruction is desired - this will drive many design decisions

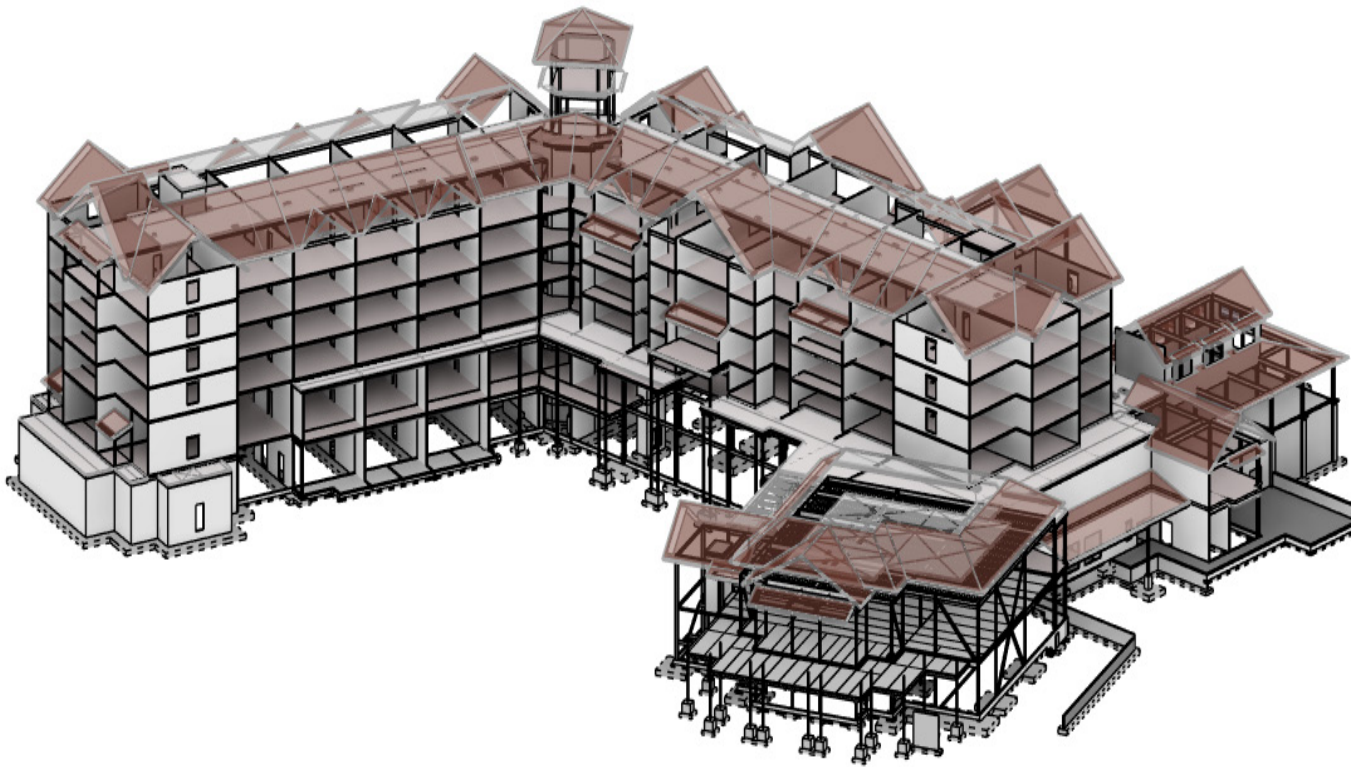
Carbon Accounting

PES, through our Sustainable Design Committee, advocates for the routine application of Life Cycle Assessment (LCA) tools to quantify embodied carbon and integrate carbon-conscious decision-making into structural design workflows. We emphasize the specification of Environmental Product Declarations (EPDs) for primary structural materials - such as concrete, steel, and timber - to facilitate accurate carbon accounting. Additionally, we are establishing embodied carbon benchmarks for common structural systems and promoting the tracking of carbon reductions over time to support data-informed design improvements and alignment with SE2050 targets.



Structural Efficiency & Design Innovations

PES supports the pursuit of structural efficiency through the optimization of structural systems to reduce material usage without compromising safety, serviceability, or performance. Emphasis is placed on innovative design approaches that not only improve material utilization but also enhance the longevity of structures. This includes strategies that enable adaptability, reconfigurability, and deconstructability, allowing buildings to respond to changing functional demands and facilitating future reuse of structural components. Furthermore, we advocate for the integration of advanced computational design methods and optimization tools - such as parametric modeling - to identify efficient load paths, minimize structural redundancy, and significantly reduce material waste across the project lifecycle.



Collaboration & Industry Advocacy

Collaboration across disciplines is essential to advancing low-carbon structural design. PES actively engages with architects, contractors, and material suppliers to encourage early and ongoing coordination that supports carbon-conscious decision-making throughout the project lifecycle.

We maintain strong ties with leading industry organizations - including SE2050, the Carbon Leadership Forum, the U.S. Green Building Council (USGBC), the National Council of Structural Engineers Associations (NCSEA) Sustainable Design Committee, and the Structural Engineers Association of Georgia (SEAoG) - to stay informed of emerging best practices and contribute to the broader conversation around decarbonization in the built environment.

In parallel, we advocate for policy changes and code development efforts that promote the adoption of low-carbon materials and construction methodologies, recognizing the critical role of structural engineers in shaping a more sustainable future.



Education & Knowledge Sharing

Education and knowledge dissemination are key pillars of our committee's mission to reduce embodied carbon in structural systems. We provide internal training sessions for engineers and staff focused on embodied carbon reduction strategies, equipping our teams with the tools and insights needed to integrate sustainability into everyday practice. As part of our onboarding process, all new hires receive a foundational introduction to embodied carbon concepts, ensuring that awareness and responsibility for low-carbon design are embedded from day one.

We also foster continuous learning by sharing research findings, project case studies, and lessons learned — both internally and across the industry - to drive collective progress toward net-zero goals.

Beyond our internal efforts, we actively engage clients and industry partners through presentations and discussions that demonstrate the value and long-term benefits of low-carbon design. Notably, we offer an AIA-accredited continuing education presentation on embodied carbon, providing design teams and stakeholders with actionable knowledge while reinforcing the leadership role structural engineers play in advancing a more sustainable built environment.



Continuous Improvement & Reporting

Our commitment to continuous improvement is grounded in setting clear, measurable targets for embodied carbon reduction and rigorously tracking progress year after year. We establish benchmarks for performance, monitor outcomes across our portfolio, and evaluate results against our long-term sustainability goals.

Each year, we publish project data to the SE2050 database, transparently communicating the reductions achieved across our projects. This reporting process not only holds us accountable but also advances collective industry knowledge by contributing to a growing body of shared data. In doing so, we help drive broader progress toward systemic change in structural engineering.

Internally, we conduct regular reviews to capture lessons learned and pinpoint opportunities for further improvement. These reviews inform refinements to our design practices, workflows, and project delivery methods, creating a continuous feedback loop that strengthens our commitment to low-carbon design.

Our strategies evolve alongside the industry. By staying at the forefront of emerging technologies, innovative low-carbon materials, and updated industry standards, we ensure our approach remains proactive, adaptive, and aligned with the most advanced practices in sustainable structural engineering. This forward-thinking mindset positions us to not only meet today's challenges but to actively lead in shaping the future of resilient, low-carbon design.

