



# 2025 EMBODIED CARBON ACTION PLAN

STRUCTURAL ENGINEERING INSTITUTE  
SE 2050 COMMITMENT



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## SHIRK & O'DONOVAN

Shirk & O'Donovan Consulting Engineers offers a full range of professional consulting structural engineering services from conceptual design through construction administration. The firm was founded in 1991 with a vision of unparalleled service as a provider of structural engineering design services.

Shirk & O'Donovan was built on the idea that innovative structural solutions begin with a thorough, thoughtful game plan, a game plan that is developed conversationally with our clients and partners. We have a long history of successfully implementing these plans and helping deliver on-time projects that meet the aesthetic and financial aspirations of our clients.

After over 30 years of dedicated service, Shirk & O'Donovan maintains its commitment to quality, which has led to a large portfolio of clients both locally and across the U.S. and thousands of successful building designs from small intricate designs to very large complex structural designs of buildings over 3,500,000 SF.





# OUR COMMITMENT

## OUR COMMITMENT TO A SUSTAINABLE FUTURE

As structural engineers, we recognize that our industry has a profound impact on the environment. From the materials we specify to the structural systems we design, our decisions influence the carbon footprint of the built environment. The structural system alone can account for anywhere from 40-80% of a building's total embodied carbon, a significant portion of which is emitted before a building is even occupied. This reality has driven us to take urgent action by committing to SE 2050.

The SE 2050 Commitment—a national initiative aimed at achieving net-zero embodied carbon in structural systems by 2050—aligns with our core values and commitment to environmental responsibility. As global temperatures rise, resource constraints grow, and regulations surrounding emissions tighten, we are acutely aware of the responsibility we hold in reducing embodied carbon across all our projects. By joining SE 2050, we aim to be part of a broader movement that prioritizes reducing carbon emissions in a way that addresses both immediate and long-term impacts.

We acknowledge our role in shaping a resilient and sustainable future. This commitment is not just about meeting targets; it is about redefining our approach to structural design and challenging ourselves to think differently. Our dedication to embodied carbon reduction aligns with a larger vision of environmental stewardship and social responsibility, driven by the belief that our work should contribute positively to society and the planet.

Our Embodied Carbon Action Plan outlines the specific strategies and measurable goals we are pursuing to reduce the embodied carbon of our projects. Through transparency, innovation, and collaboration, we are committed to supporting the SE 2050 mission and working with our clients to create lasting value for people, the environment, and future generations.

## EDUCATION PLAN

To make significant strides in reducing embodied carbon, it is essential that every team member understands both the importance of this goal and the role they play in achieving it. Our commitment to SE 2050 begins with fostering a culture of sustainability and knowledge-sharing across the company. In order to achieve this culture, we have already completed or plan to accomplish the following:

- Create and record a presentation explaining the embodied carbon impact of structural materials and strategies for embodied carbon reduction. This has been shared with all current engineers and will be made available as a part of future new hire onboarding.
- Regularly share lessons learned during full-staff meetings.
- Send engineers to relevant conferences then relay any new information to the rest of the staff.
- Schedule at least two embodied carbon specific continuing education presentations per year.



## REPORTING PLAN

Transparency is fundamental to the success of our commitment to reducing embodied carbon. By establishing a reporting framework, we aim to hold ourselves accountable, track our progress, and communicate our efforts to clients and project stakeholders.

Our reporting process will involve the systematic collection and analysis of embodied carbon data across a variety of projects. Through regular reporting, we will identify areas for improvement, celebrate milestones, and ensure that our projects trend toward net zero embodied carbon emissions in alignment with the goal set forth by SE 2050. As we begin the process of collecting and reporting embodied carbon data, we will:

- Complete a life cycle assessment for two projects considering all structural components during life cycle stages A1-A3 and submit the data to the SE 2050 database.
- Trial different LCA software to gain a better understanding of embodied carbon accounting.
- Start a database of case studies performed early during the design process to better inform future design decisions.



## REDUCTION PLAN

Reducing embodied carbon is at the core of our commitment to SE 2050. Our approach to embodied carbon reduction combines innovative design techniques and strategic material choices.

By rethinking conventional structural materials, optimizing design for material efficiency, and implementing performance-based approaches, we aim to achieve measurable reductions in embodied carbon across our project portfolio. During this first year, our primary focus will be gathering data to set a baseline for reduction, which we will do through the following:

- Update standard concrete specification to performance-based in lieu of prescriptive specifications.
- Require Type III Environmental Product Declarations as submittals for concrete and steel.
- Start conversations with local material suppliers to assist them with strategizing for further embodied carbon reductions.
- Perform conceptual design studies early during the design process to provide options for the design team to consider, emphasizing the embodied carbon impact of each potential decision.



## ADVOCACY PLAN

Our commitment to reducing embodied carbon extends beyond our own projects; we are dedicated to driving meaningful change across the building industry.

By actively advocating for sustainable design practices, we aim to inspire and support industry-wide efforts toward embodied carbon reduction. This includes collaborating with industry partners, engaging with policymakers, and contributing to public discussions on sustainable building standards. Through advocacy, we not only share our knowledge and successes but also amplify the movement toward a net-zero future. We believe that by championing low-carbon solutions and encouraging policy advancements, we can accelerate progress toward SE 2050 goals and contribute to a more sustainable built environment for everyone. To share our excitement for reducing embodied carbon, we have already or will:

- Create a presentation to share with clients that introduces embodied carbon and provides potential solutions for embodied carbon reduction.
- Start a Carbon Leadership Forum (CLF) Regional Hub and open it to anyone in the building industry to educate others and encourage local progress.
- Participate in local sustainability committees.







December 3, 2024

Laura Champion  
Director  
Structural Engineering Institute

Re: Letter of Commitment to the SE 2050 Program

Dear Laura,

Shirk & O'Donovan Consulting Engineers, a 20-person firm in Columbus, Ohio, is hereby signing on to the SE 2050 Commitment Program. We support the vision that all engineers shall understand, reduce, and ultimately eliminate embodied carbon in their projects by 2050.

In the midst of a climate crisis, we recognize the importance of bringing embodied carbon reduction strategies to every project we are involved in. With this commitment, Shirk & O'Donovan invites accountability as we strive to lead our industry toward a zero embodied carbon future.

We therefore commit Shirk & O'Donovan Consulting Engineers to take the following steps which are a part of the SE 2050 Commitment Program:

- Along with this commitment letter and annually henceforth, we commit to reporting an Embodied Carbon Action Plan (ECAP) and permit the ECAP document or form be made public on the SE 2050 website.
- Within one year and annually henceforth, we commit to submit data to the SE 2050 project database in a collaborative effort to understand embodied carbon in structural engineering projects and to set attainable targets for future projects.

We look forward to joining this coalition and industry effort to achieve the goals of the SE 2050 Program.

Sincerely,

SHIRK & O'DONOVAN  
Consulting Engineers, Incorporated

Handwritten signature of Patrick J. O'Donovan in blue ink.

Patrick J. O'Donovan, P.E.  
President, Managing Principal

Handwritten signature of Marcus L. Motter in blue ink.

Marcus L. Motter, P.E.  
Vice President, Principal

Handwritten signature of John M. Brewer in blue ink.

John M. Brewer, P.E.  
Director of Operations, Principal

Handwritten signature of David A. Cortnik in blue ink.

David A. Cortnik, P.E.  
Director of Development, Principal

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370 East Wilson Bridge Road | Worthington, Ohio 43085-2321 | 614.436.6465 | shirkodonovan.com

## SE 2050 Commitment Letter



## Prepared By:

Chad J. Simms, P.E., S.E., LEED AP BD+C  
chadsimms@shirkodonovan.com



370 EAST WILSON BRIDGE ROAD | WORTHINGTON, OHIO 43085  
614.436.6465 | SHIRKODONOVAN.COM

