



# KFSE Embodied Carbon Action Plan (ECAP)

November 4, 2022

## Introduction:

Kurt Fischer Structural Engineering, Inc (KFSE), is a 15-person firm with offices in Encino, CA, Irvine, CA, and Portland, OR. KFSE is proud to commit to the SE 2050 Program to reduce the impact of building construction on the environment. We support the vision that all structural engineers shall understand, reduce, and ultimately eliminate embodied carbon in their projects by 2050.

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## Education Plan

### Immediately:

- Nominate a Carbon Champion.  
Carl Kloos, S.E., LEED AP will be KFSE's Carbon Champion. Carl is a Vice President and leads KFSE's Portland, OR office. He has 20 years of experience in structural engineering, and has been a LEED Accredited Professional since 2013. Carl is also a member of the Structural Engineering Institute's (SEI) Sustainability Committee, participating in the Disaster Resilience working group.

### Within 1 year of signing the SE 2050 commitment, KFSE will:

- Distribute ECAP within your firm upon publishing.  
KFSE will distribute the ECAP immediately via email once finalized.
- Make (1) webinar focused on embodied carbon available to employees.  
KFSE will show the webinar "Embodied Carbon 101: Structure" at one of our monthly lunch-n-learn meetings in the first year of joining.

### Additional potential electives for future years:

- Have one representative of your firm (any employee) attend quarterly external education programs (e.g. webinar, workshop) provided by SE 2050, Carbon Leadership Forum (CLF), or other embodied carbon resources.
- Share the SE 2050 library of resources with technical staff.
- Share embodied carbon reduction strategies with your firm as outlined in Top 10 Carbon Reducing Actions for Structural Engineers document produced by SE 2050.
- Nominate a minimum of (1) employee per office to participate in a CLF Community Hub and/or task force.
- Provide narrative outlining plans for minimum (2) firm-wide presentations per year on the topic of embodied carbon.
- Present the document, "How to calculate embodied carbon" to all technical staff.
- Minimum (1) employee attends a presentation or demo of an LCA-based tool used to calculate embodied carbon, such as Tally, Athena IEB, or One Click LCA.
- Initiate an embodied carbon interest group within your firm and outline their goals.
- Provide a narrative of how the Embodied Carbon Reduction Champion will engage embodied carbon reduction at each office. (intended for multi-office firms).
- Propose other actions promoting embodied carbon education and describe their value.

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## Reporting Plan

Within 1 year of signing the SE 2050 commitment, KFSE will:

- Submit a minimum of (2) projects per U.S. office with structural engineering services to the SE 2050 Database. You are not required to submit more than (5) total projects across your firm. Offices less than 5 FTE are excluded.

**KFSE will submit (2) projects to the database within the first year.**

Additional potential electives for future years:

- Submit all of your firm's projects to the SE 2050 database.
- Report a greater percentage of projects than you did the previous year.
- For a project submitted to the database, ask the Architect or Owner if the project has a carbon budget or if there are established project sustainability goals at the project kickoff meeting.
- Propose other actions that promote the reporting of embodied carbon data and describe their value.

## Embodied Carbon Reduction Plan

Within 1 year of signing the SE 2050 commitment, KFSE will:

- Update your specifications to incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements.

**KFSE will update our specification templates to include provisions to document and/or reduce embodied carbon.**

Additional potential electives for future years:

- Communicate the embodied carbon impacts of different design options to clients with creative data visualization. Include these visualizations in your Elective Documentation.
- Project case study sharing embodied carbon reduction successes and lessons learned
- Create a project-specific embodied carbon reduction plan.
- Complete an embodied carbon comparison study during the project concept phase.
- Participate in a LEED, ILFI Zero Carbon, or similar project design charrette and speak to potential design considerations impacting embodied carbon.
- Calculate your firm average benchmark for embodied carbon.
- Collaborate with your concrete supplier to reduce embodied carbon in a mix design.
- Work with a contractor during material procurement to meet an embodied carbon performance criteria on at least (1) project.
- Have an Environmental Product Declaration (EPD) created for a project.
- Incorporate biogenic materials on at least one project.
- Submit a Circular Economy Narrative describing how the project supports the circular economy. This can be done by incorporating re-use or design for deconstruction into at least one project.
- Report weight and method of transportation of structural material. Track how much is processed for recycling/salvage and sent to landfill, including material generated during demolition and construction activity. Include at least four material streams (e.g. concrete, metal, wood, gypsum wallboard, paper and cardboard, plastic).
- Integrate embodied carbon mitigation strategies in your General Notes.
- Propose other embodied carbon reduction strategies and describe their value.

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## Advocacy Plan

Within 1 year of signing the SE 2050 commitment, KFSE will:

- Describe the value of SE 2050 to clients. How can your design teams collaborate to reduce embodied carbon? Please attach any associated marketing materials  
**KFSE will discuss the SE 2050 commitment with clients.**
- Declare your firm as a member of the SE 2050 Commitment with boilerplate proposal language.  
**KFSE will review our proposal template to see if the SE 2050 commitment can be included. We will request examples from other SE 2050 signatories. For RFPs that request a qualifications package, we will include a section declaring our firm's commitment to SE 2050.**
- Share your commitment to SE 2050 on your company website.  
**KFSE will add a section about SE 2050 to our website.**

Additional potential electives for future years:

- Give an external presentation on embodied carbon that demonstrates a project success or lessons learned (Tip: Get connected at a CLF local hub near you!).
- With the owner or client, discuss a facility- or product-specific EPD requirement for structural materials.
- Share education opportunities with clients.
- Encourage industry and policy change by promoting and using low-carbon and carbon-sequestering materials.
- Start an embodied carbon community of practice or mentorship program in your office.
- Mentor a firm new to the embodied carbon space.
- Propose alternative methods for advocacy and describe their value.

## Lessons Learned

Section to be filled out in 2023 after the completion of the first year of the SE2050 program and each year thereafter.

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## Appendix A - Letter of Commitment



### LETTER TO COMMITMENT TO THE SE 2050 PROGRAM

**DATE:** April 20, 2022

**TO:** Laura Champion, Director, Structural Engineering Institute

**FROM:** Kurt Fischer Structural Engineering Ownership & Carbon Champion

**SUBJECT:** Letter of Commitment to the SE 2050 Program

Dear Laura Champion:

Kurt Fischer Structural Engineering, Inc (KFSE), a 15-person firm with offices in Encino, CA, Irvine, CA, and Portland, OR. KFSE is hereby signing on to the SE 2050 Commitment Program. We support the vision that all structural engineers shall understand, reduce, and ultimately eliminate embodied carbon in their projects by 2050.

Whereas, the earth's climate has warmed approximately 1.0 degrees Celsius since pre-industrial times and continues to warm from greenhouse gas emissions.

Whereas, approximately 11% of global carbon emissions are due to "embodied carbon" from building materials and construction.

Whereas, approximately 50% of a building's embodied carbon is in the primary structural system.

Whereas, Structural Engineers first and foremost have a responsibility to protect the health, safety, and welfare of the public.

We therefore commit Kurt Fischer Structural Engineering to make the following steps which are part of the SE 2050 Commitment Program:

- Within six months and annually henceforth, we commit to reporting an Embodied Carbon Action Plan (ECAP) and permit the ECAP document or form to be made public on the SE 2050 website.
- Within one year and annually henceforth, we commit to submit data to 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,

Kurt Fischer, S.E.  
Partner

Derek Wavering, S.E.  
Partner

Carl Kloos, S.E., LEED AP  
Vice President & Carbon Champion

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## Appendix B - Announcement



### Kurt Fischer Structural Engineering

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KFSE is pleased to announce that we've joined the SE2050 initiative. The SE2050 program strives to significantly reduce the embodied carbon in structural systems. We are excited to contribute to this program that will advance the structural engineering profession toward a more sustainable future! Click here to learn more about the SE2050 initiative and find out how you can make a difference.

<https://lnkd.in/gRFUXAx> #structuralengineering #sustainable #future

**This Earth Day, Kurt Fischer Structural Engineering is joining SE2050 and committing to substantially reducing the embodied carbon in our structural systems.**



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