

SE 2050 ECAP Submission Form

Email *

jad@khhpc.com

Firm Name *

Klepper, Hahn & Hyatt

Education

The first step to increased engagement within your firm is through education. We all should strive to understand the impacts of our design decisions and their effects on our environment.

Distribute firm-wide announcement of your firm's pledge to join the SE 2050 Commitment. *

Completed

Not Completed

Provide a brief narrative describing how your firm is promoting a firm-wide education program for embodied carbon reduction and the firm's commitment to SE 2050. *

- a. At least on an annual basis, we will have a one-hour structural staffing meeting to discuss embodied carbon – awareness, reduction, and quantification. We most recently did this on 19 June 2024.
- b. We will stay abreast of current developments, laws, and policies regarding carbon reduction, including:
 - i. Availability of Portland-Limestone Cement (PLC) as a substitute for Ordinary Portland Cement in Central NY and other parts of NY State.
 - ii. The introduction of Ground Glass Pozzolan (GGP) in portions of NY State as an option for Supplementary Cementitious Materials (SCM), to reduce the amount of cement in concrete mixes.
 - iii. New York State's Buy Clean Concrete for state projects.
 - iv. New York State's prohibition of Extruded Polystyrene (XPS) and closed-cell polyurethane spray foam insulation with high-GWP blowing agents on Commercial projects.
- c. Encourage employee participation at embodied carbon educational webinars.
- d. Talk up clients' interest in reducing embodied carbon on projects, such as SUNY ESF (part of their Project Requirements) and the Thousand Islands Arts Center.

Name of Embodied Carbon Champion (Point Person) *

Jim DAloisio

Email of Embodied Carbon Champion *

jad@khhpc.com

Phone number of Embodied Carbon Champion *

315-413-7960

LinkedIn URL

Set a date within the first year to present the “Embodied Carbon 101” Webinar to your firm. Incorporate this information into your orientation/on-boarding programs. *

Committed / Completed

Not Committed / Not Completed

Minimum (1) additional elective to educate your firm about embodied carbon and a narrative of its significance. *

Committed / Completed

Not Committed / Not Completed

ELECTIVES (Min. (1) required, recommended to achieve (4) per year): *

- 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.
- Provide narrative outlining plans for minimum (2) firm-wide presentations per year on the topic of embodied carbon
- Present the document, "How to measure and report embodied carbon" to all technical staff.
- Attend a presentation or demo of an LCA-based tool used to calculate embodied carbon.
- Initiate an embodied carbon interest group within your firm and provide a narrative of 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)
- Other actions you feel appropriate and a narrative for why.

Elective Narrative (Optional):

The Embodied Carbon Champion (Jim D'A) regularly develops and presents PowerPoint presentations during lunchtime, serving lunch and inviting the staff to attend. We have done this at least twice each year, for the past two years. In some cases, the presentations are not focused completely on embodied carbon, but embodied carbon information is conveyed. Examples of these include:

- "SE 2050 and Tales from the Trenches"
- "Archaic, Low-Carbon Structural Systems: Some Worth Reconsidering"

Reporting

Quality data is essential to making informed decisions and setting important benchmarks and the development of appropriate embodied carbon reduction targets. The SE 2050 database is a central component to building a successful Commitment Program and reaching our collective embodied carbon reduction goals by 2050.

Submit an annual minimum of (2) projects per U.S structural office or (5) total projects for the firm to the SE 2050 Database. *

- Completed
- Committed and on track
- Need help reaching this target
- Not Completed

Number of Projects Reported Last Year (zero in first year)

0

Number of Offices Reporting Last Year (zero in first year)

0

Provide a narrative on how your firm plans to measure, track, and report embodied carbon data. *

- i. Athena Impact Estimator, incorporating biogenic carbon into the embodied carbon calculations.
- ii. We will check the results using simple spreadsheets based on industry-average EPDs, including an estimate of carbon emissions for waste, transportation, construction, and end-of-life phase.

Describe the internal training for embodied carbon measurement you provided or will provide. *

We reviewed different software programs and settled on Athena Impact Estimator. We charged a student intern with learning the program.

ELECTIVES (Not required, recommended to achieve (1) per year):

- Submit all projects to the SE 2050 Database
- Meet your target average embodied carbon reduction from the previous year.
- Report a greater percentage of projects than the preceding 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.
- Other actions you feel appropriate and a narrative for why.

Elective Narrative (Optional):

A. We will stay abreast of current developments, laws, and policies regarding carbon reduction, including:

- i. Availability of Portland-Limestone Cement (PLC) as a substitute for Ordinary Portland Cement in Central NY and other parts of NY State.
- ii. The introduction of Ground Glass Pozzolan (GGP) in portions of NY State as an option for Supplementary Cementitious Materials (SCM), to reduce the amount of cement in concrete mixes.
- iii. New York State's Buy Clean Concrete for state projects.
- iv. New York State's prohibition of Extruded Polystyrene (XPS) and closed-cell polyurethane spray foam insulation with high-GWP blowing agents on Commercial projects.

B. We have included in company Master Specifications the following:

- i. Require a minimum of 20% Supplementary Cementitious Materials in all structural concrete, as well as slabs on grade.
- ii. Curtail the use of XPS with high GWP blowing agents, including residential projects as well as commercial.

Embodied Carbon Reduction Strategies

Embodied carbon reduction of structural materials is the ultimate goal of the SE 2050 program. As a starting point, you will have access to the SE 2050 project database and Program resources to identify and set strategies. This section also serves to share lessons learned and incite innovation. Demonstrate leadership by not only applying, but developing best practices and actively collaborating with the design community. This is our profession's opportunity to take action and make an impact.

Set an EC reduction goal for the coming year and an implementation narrative (Qualitative goals focused on education are * appropriate for the first year)

We cannot set a percentage reduction goal, since we mainly work on a wide variety of renovations, additions, and similar, and do not have time to calculate embodied carbon for more than a couple of projects a year. However, we are setting the following goal:

- Identify and implement "low-hanging fruit" objectives for all projects, including:

1. Do not over-specify concrete strength.
2. Do not oversize foundations - use FPSF whenever possible, and minimize thickness of foundation walls
3. Optimize material tonnage, especially steel.
4. Suggest wood for structural systems and wall studs.
5. Make sure entire project team is aware of the problem of high-GWC insulation materials.

For second year's ECAP and beyond, provide a narrative about what you have learned about embodied carbon reduction in the past year. Describe successes and misses to help the program improve.

1. In a busy office, committing to the time to perform the carbon calculations is challenging - we needed a firm deadline, and the right intern, to get this done.
2. When biogenic carbon is included, wood is a MUCH superior structural material than steel.

Minimum (1) additional elective to educate your firm about embodied carbon and a narrative of its significance. *

Committed / Completed

Not Committed / Not Completed

ELECTIVES (Min. (1) required, recommended to achieve (4) per year): *

- Incorporate data visualization into your ECAP. How are you looking at data to make informed design decisions and communicate design options to your clients?
- Provide a project case study in your ECAP that captures a reduction of embodied carbon or some lessons learned.
- Create a project-specific embodied carbon reduction plan.
- Complete a system embodied carbon design comparison study during the project concept phase.
- Participate in a project LEED design charrette and speak to potential design considerations impacting embodied carbon.
- Calculate your firm average benchmark for embodied carbon.
- Update your specifications and incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements.
- 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 as a result of a project.
- Incorporate biogenic materials on at least one project annually.
- Provide a narrative of how circular economy has been used on your projects. Incorporate re-use or design for deconstruction into at least one project.
- Quantify construction waste reduction on a project and the impact to embodied carbon.
- Integrate embodied carbon mitigation strategies in your General Notes.
- Other actions you feel appropriate and a narrative for why.

Elective Narrative (Optional):

1. In a SUNY ESF project's schematic phase, the Owner's Project Requirements included quantification and reduction of embodied carbon. We developed a plan that included use of mass timber as well as foundation concrete optimization - including a horizontal-arch concrete retaining wall 8" thick instead of a 18"-thick cantilever retaining wall.
2. In a three-story community arts building project, we discussed the fact that we will be calculating the embodied carbon of the building structure. This was an opportunity to talk about the basics of embodied carbon to the room of designers. This will be considered for a LEED Innovation Credit.
3. YES, we advocated for, and incorporated, wood framing on a building project.

Advocacy

True change can only come with industry-wide adoption. This section recognizes that our impact reaches beyond any one firm. Plan opportunities to share your experience and knowledge within your firm, with your design community, and beyond. Host a webinar or lunch 'n learn, attend a conference, connect with the SEI Sustainability Committee, or reach out to manufacturers and policy-makers.


Provide a narrative about how you plan to share knowledge and data to accelerate adoption of embodied carbon reduction. *

1. We will write an article about our SE 205 progress in our biannual newsletter. The article is in draft, and it will be published in July 2024.
2. We will develop an SE 2050 marketing sheet that describes the value of SE 2050 to clients and incorporate it into our project marketing packages.
3. We will share our commitment to SE 2050 on the company website.
4. We have developed a "Carbon Cheat Sheet" that we sent to select clients.

Describe the value of SE 2050 to clients. How can we collaborate to drive adoption? At your option, attach any associated marketing materials. *

Between our Newsletter, website (will be added very shortly) and our promo material, we are increasing awareness, with the compelling message THAT REDUCING CARBON DOES NOT NEED TO INCREASE THE INITIAL CONSTRUCTION COST OF A PROJECT.

Optional: Upload any documents you would like to exhibit.

 JAD - Embodied ...

 Add file

Declare your firm as a member of the SE 2050 commitment on boilerplate proposal language. *

- Committed / Completed
- Not Committed / Not Completed

ELECTIVES (Not required, recommended to achieve (2) per year):

- Share your commitment to SE 2050 on your company website
- 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!)
- Discuss with the Owner / Client the option of requiring that some of the structural materials come with facility-specific or product-specific EPDs
- Share education opportunities with clients
- Provide a narrative of how you have encouraged industry and policy change incentivizing availability of low-carbon and carbon sequestration materials
- Start an embodied carbon community of practice or mentorship program in your office
- Mentor a firm new to the embodied carbon space
- Other action you feel appropriate and a narrative for why.

Elective Narrative (Optional):

1. I've presented, and will present, on embodied carbon, including the following:

- "Archaic, Low-Carbon Structural Systems: Some Worth Reconsidering"
- "Concrete Masonry and Carbon: Current Considerations"
- "The Fab Four: Talkin' 'bout a Revolution in Embodied Carbon!"
- "Carbon Reduction: Tales from the Trenches"
- "Changing the Conventions of Conventional Construction"
- "Frost-Protected Shallow Foundations: Design & Construction"

2 - We've created an "Embodied Carbon Cheat Sheet" that we give to select clients - uploaded.

Program Feedback

Please add any comments that you wish to share publicly. The Program Leadership Group is committed to transparently improving SE 2050.

Comments:

1. I am a fan of US units for carbon, to reduce obfuscation, i.e. 60 lbs. of CO₂/SF
 2. We should push for CARBON LITERACY, e.g., ballpark emissions:
 - Structural Steel - about 1.5 tons of CO₂ per ton of erected steel.
 - Concrete - 400- 800 lbs. of CO₂ per cubic yard of cast concrete.
 - Steel studs have a CO₂ footprint about 400 TIMES HIGHER than wood studs.
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