

SE 2050 ECAP Submission Form (No PDF)

Email *

cjones@baseengr.com

Firm Name *

BASE

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. *

In Hawai'i, options for "green" construction are limited. Concrete mix designs tend to be consistent from project to project, and lower-carbon alternatives are often cost-prohibitive. While we continue to advocate for reduced embodied carbon wherever feasible, these constraints have led us to focus on what we can control most effectively: efficiency.

We believe the most impactful way to reduce carbon is at the source—by minimizing material use. Eliminating unnecessary concrete and optimizing structural systems allows us to meaningfully reduce embodied carbon without relying on costly alternatives. As a result, efficient design has become the cornerstone of our commitment to sustainability.

Name of Embodied Carbon Champion (Point Person) *

Christian Jones

Email of Embodied Carbon Champion *

Cjones@baseengr.com

Phone number of Embodied Carbon Champion *

8087487030

LinkedIn URL

N/A

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):

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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)

4

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

2

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

To measure, track, and report embodied carbon, our firm utilizes the Beacon LCA tool as an integrated part of our design workflow. Beacon allows us to perform real-time life cycle assessments directly within our structural models, giving us immediate feedback on the embodied carbon impacts of various design decisions.

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

The big boss, Steve Baldrige, provides everyone at our firm with ample webinars and in person seminars that discuss embodied carbon reduction across all material types. In a typical year, I would say there are 2-8 of these webinars available to everyone at the firm to attend and learn.

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):

As I mentioned before, our goal is always efficiency. Efficient designs reduce the embodied carbon footprint of a building in addition to saving the client money. A true win win situation.

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) *

Our embodied carbon (EC) reduction goal for the coming year is to further reduce material usage through more efficient structural design while continuing to promote lower-carbon concrete where feasible. Given the cost and availability challenges associated with “green” concrete in Hawai‘i, our primary focus remains on minimizing embodied carbon at the source by optimizing structural systems, refining load paths, and eliminating unnecessary material. Internally, we will continue to emphasize efficiency in our design approach and use tools such as Beacon LCA to quantify and track reductions throughout the design process.

From an implementation standpoint, we will build on our existing specifications by continuing to recommend and encourage the use of lower-carbon concrete mixes where they are cost-competitive and available. We will also use Beacon to compare design alternatives and document embodied carbon impacts, allowing us to make informed decisions and clearly communicate benefits to project teams and owners. By combining practical material recommendations with a strong emphasis on efficiency, we aim to achieve measurable embodied carbon reductions that are both realistic and repeatable within the constraints of the local market.

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.

Over the past year, we have gained a more nuanced understanding of embodied carbon reduction within the unique constraints of the Hawai'i market. One key lesson learned is that not all widely promoted solutions translate effectively to our local conditions. For example, while CarbonCure initially appeared to be a promising strategy, its effectiveness in Hawai'i has been limited. Due to the state's relatively low industrial carbon output, the CO₂ required for the process often needs to be imported, which can offset or even undermine the intended environmental benefits. This has reinforced the importance of evaluating solutions holistically, considering not just theoretical carbon reductions but also the full supply chain impacts in a geographically isolated context.

On the positive side, we have seen growing momentum around alternative structural systems, particularly mass timber. While still relatively expensive, mass timber is increasingly being considered by owners as a viable option, representing a notable shift in a market historically dominated by concrete construction. Industry engagement, including local seminars and increased supplier presence, suggests that mass timber is gradually gaining traction and could become a more practical low-carbon alternative in the coming years. Internally, this has encouraged us to broaden our approach to embodied carbon reduction by not only focusing on efficiency within traditional materials, but also staying informed on emerging systems that may offer more substantial reductions over time.

Overall, our experience this past year has highlighted both the challenges and opportunities of reducing embodied carbon in Hawai'i. Our successes have largely stemmed from improving efficiency and maintaining flexibility in our approach, while our misses have underscored the need for careful evaluation of new technologies within the realities of the local market. These insights will continue to inform how we refine our strategies and contribute meaningfully to the program moving forward.

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):

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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. *

Our approach to sharing knowledge and accelerating the adoption of embodied carbon reduction begins internally, with a focus on education and transparency. We regularly distribute webinars, technical resources, and industry guidance to our engineers to build awareness and deepen understanding of embodied carbon principles and reduction strategies. In addition, our ECAP has been presented firmwide to ensure that staff are aligned with our overarching goal of prioritizing efficiency in design as the most practical and impactful means of reducing embodied carbon in Hawai'i.

We also encourage ongoing knowledge-sharing across project teams by discussing lessons learned, successful strategies, and project-specific challenges. This helps establish consistent best practices and reinforces a firmwide mindset centered on reducing material use and improving efficiency.

Externally, we aim to contribute to broader industry adoption by communicating our findings and experiences with clients, collaborators, and local partners. By sharing both successes and challenges—particularly those unique to the Hawai'i market—we help set realistic expectations and encourage informed decision-making. Through a combination of internal education, open communication, and collaboration with stakeholders, we seek to foster a culture of continuous improvement and accelerate the adoption of embodied carbon reduction strategies across our projects and the industry.

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

Our ECAP has become the go to resource on our website for information about our efforts. We have crated a separate tab on our website for the ECAP and other sustainable projects we have worked on.

Optional: Upload any documents you would like to exhibit.

 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):

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Program Feedback

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

Comments:

As noted previously, our firm is not of a size that allows us to dedicate resources to developing a completely new ECAP each year. While we remain fully committed to embodied carbon reduction—and continue to position ourselves as a leader in Hawai'i through our emphasis on efficient, optimized design—our core approach and commitments have remained consistent over time.

Rather than recreating a new ECAP annually, our intent is to build upon and refine our existing plan, incorporating lessons learned, market developments, and incremental improvements each year. This approach allows us to focus our efforts on meaningful implementation and measurable results, rather than reallocating limited resources toward producing a new document from scratch.

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