

SE 2050 ECAP Submission Form

Email *

jg@armstrong-douglass.com

Firm Name *

Armstrong-Douglass Partners

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. *

We support the vision that all structural engineers shall understand, reduce, and ultimately eliminate embodied carbon in their projects by 2050. Besides encouraging the entire firm to read the SE2050 resources, we are looking for the right project, with a client who is supportive, to start educating our staff on the specific methods, and will share these discoveries with the rest of the firm.

Name of Embodied Carbon Champion (Point Person) *

Joseph Gerke

Email of Embodied Carbon Champion *

jg@armstrong-douglass.com

Phone number of Embodied Carbon Champion *

4794223567

LinkedIn URL

https://www.linkedin.com/in/joseph-gerke-p-e/

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):

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. *

Using Tekla TSD and/or Tally, we plan to coordinate with our clients on the sustainability goals of the project and make reports accordingly.

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

We will ensure that our engineers understand the following (taken from “Top 10 Things Every Structural Engineer Should Know about Embodied Carbon” from SE2050):

- 1. Embodied carbon and GWP
- 2. Net-zero embodied carbon
- 3. Carbon sequestration, including end of life assumptions
- 4. Role of structural engineers in addressing embodied carbon
- 5. Reduce the upfront embodied carbon of the structural system to the greatest extent possible.
- 6. A life cycle assessment (LCA) for individual materials
- 7. Environmental product declarations (EPDs
- 8. A whole building LCA (WBLCA) for the building as a whole
- 9. Impact of the location of a material or product’s extraction and manufacturing
- 10. Any additional strategies, like using Fly Ash in concrete mixes

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):

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 plan to build on a small foundation year by year, starting with our first year: a thorough education of a few committed staff members. We are a small firm and so it may be only one or two projects can benefit from EC reduction. But we are excited to build momentum and achieve more in the following years!

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.

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):

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. *

We plan to regularly inform our clients about our embodied carbon goals as well as educate real estate professionals in our community who may be considering adaptive reuse projects. We plan to share knowledge and data in face-to-face meetings as well as in our digital communication.

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

With a little more time and energy, we can help our clients ensure their structures are reusable and future-proof. We love adaptive reuse projects, and we believe that almost any building can be adapted and our built history preserved if the right team is on board. This is why we love SE2050, because it’s better for our planet to reduce the impact on the planet that an existing building can offer compared to building everything from scratch after a short life span. We will continue to spread the word and share examples of great buildings with a second and third lease on life!

We also believe that structural health monitoring can play a big part in adaptive reuse and adoption of greener building materials. Therefore, we have partnered with Sensequake, a structural tech firm that has created state-of-the-art vibration sensing technology and software. Their methods have been used to analyze numerous landmark buildings throughout North America. We have even used their sensors to test a mass timber floor assembly in Houston, Texas. The results from this test will allow the design team to close the loop on design assumptions using actual mass timber building performance. This will enable more efficient designs in the future, as well as a greater understanding of vibration performance in this new building type.

Optional: Upload any documents you would like to exhibit.



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):

Program Feedback

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

Comments:

This content is neither created nor endorsed by Google.

Google Forms



ad
armstrong-
douglass
structural engineers



Adaptive Reuse Example Projects



STRUCTURAL
ENGINEERING
INSTITUTE





1217 Main - Before



1217 Main - After



1217 Main – Interior Mods





464 Bailey - Before



464 Bailey - After



Embarc Lake Tahoe - Before





Embarc Lake Tahoe - After





Bogart on Ross- After

Thanks for your interest!

