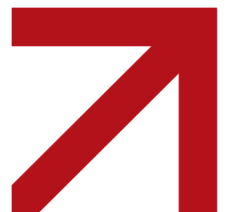




ZFA
STRUCTURAL
ENGINEERS

2026
**EMBODIED
CARBON
ACTION
PLAN**
(ECAP)



Sonoma County Airport
Santa Rosa, CA

Photo Courtesy of [MGV Photography](#)

TABLE OF CONTENTS

Who We Are 3

Our Commitment 4

ZFA Sustainability Leaders 5

Education Plan 6

Knowledge Sharing 7

Reduction Strategy 8

Reporting Plan 9

Elective Documentation 11

WHO WE ARE

Since 1974, we've been dedicated to designing new and revitalized places to live, work, learn, heal, and play throughout Northern California and beyond. As a small firm with a large firm feel, we continue to learn new skills, grow our business, and stay curious about engineering and the built environment—including how we can design structures with



FIRM SNAPSHOT

100

Employees in five offices

27

Licensed Structural Engineers (SE)

8

LEED Accredited Professionals



PEOPLE ↗
WORK ↗
SOLUTIONS ↗
zfa.com



OUR COMMITMENT



Trefethen Family Vineyards
Napa, CA

Photo Courtesy of [Adrian Gregorutti](#)

ZFA Structural Engineers has joined SE2050. We have committed to reducing embodied carbon in the design of structural systems.

As we increasingly observe the effects of climate change in everyday life, we understand the urgent need to reduce our carbon emissions and strive for net zero. Since 1974, ZFA has been designing new and revitalizing places to live, work, learn, heal, and play. In recent years we have leveraged our experience and motivation for sustainability by educating ourselves on emerging technologies and implementing solutions like optimum value engineering wood framing, low-carbon concrete, and cross-laminated timber.

Moreover, at ZFA, we are astutely aware of how our work impacts the community around us. Our past work with organizations such as Rebuilding Together, Bay Build, and Engineers Alliance for the Arts has helped us to understand the responsibility we have as engineers. Committing to this initiative is an effective first step towards introducing carbon-reduction strategies into our practice on our journey to become stewards of the environment.

We understand that the 2050 goals cannot be achieved alone and are eager to collaborate with other firms to harness our collective experience. ZFA commits to lending our expertise to make a meaningful and tangible contribution to the 2050 goals.

2026 ZFA SUSTAINABILITY LEADERS



Lindsey Broderick, PE
Associate
Embodied Carbon Champion



Jackson Blake
Engineer



Andrew Twardowski, PE
Senior Engineer



Nick Reid, SE
Principal



Angie Sommer, SE
Principal/CMO



EDUCATION PLAN



In an effort to educate ZFA employees about embodied carbon, our Embodied Carbon Reduction Champion will:

- **Establish office champions**
 - Each office champion to provide presentation at monthly office meetings (x1 per office)
 - Monthly meeting announcements
 - Identify min (5) projects per year from office to complete LCAs on
- **Yearly Engineer Training Day presentation**
- **Intern LCA Program**
- **Lessons learned:**
 - Continued education and exposure across the company should be a priority
 - Industry is evolving incredibly rapidly, need to always be providing multiple touchpoints for people to learn

KNOWLEDGE SHARING



Allyn Avenue Residence
St. Helena CA
Photo Courtesy of [Technical Imagery](#)

ZFA's strategy to communicate embodied carbon reduction work externally includes sharing our firm's efforts, successes, and lessons learned with clients, the design community, and the public. We will accomplish this by:

- Updated ZFA website
 - Create a project LCA case study to share
- 1-pager summary template + send to (1) Architect
- Lessons learned:
 - Intern Project
 - Got exposure to LCA software and general carbon reduction
 - Even if not working at ZFA, spreading knowledge industry-wide
 - Diversity of ideas—gave ideas for creating the one-pager

REDUCTION STRATEGY



Sonoma Academy Performing Arts Center
Architecture by Quattrocchi Kwok Architects

ZFA's firm-wide reduction targets in the short-term (<1 year) and long-term (> 5 years) include:

- **Short-term**
 - Performance-based concrete specification
 - Reduction case studies
 - Concrete mix design study
 - IJ versus sawn lumber
- **Long-term**
 - Create and collect best practices (reduction strategies) for consideration during design phases integrated with ZFA workflow
 - Not for public—a way to integrate into the dashboard??
 - Develop benchmark reduction goals by project type/size
- **Lessons learned**
 - Takes time and effort
 - How to tie data points together
 - Not always up to us—how to control what we control, early intervention

REPORTING PLAN

ZFA will continue measuring, tracking and reporting embodied carbon data over 2026 with the intention of integrating these practices long-term into our project workflow.

- ZFA will continue to conduct LCAs throughout 2026 and beyond.
 - We are committed to providing a minimum of (5) LCAs for 2026 with projects that strategically represent different ZFA offices, construction types, materials, and business lines.
- LCAs will be performed using software including BimCAT, Athena Impact Estimator and hand calculations.
 - ZFA will endeavor to expand our knowledge and usage of other software, including OneClick LCA and Tally.
- The scope of our LCAs will either be stages A1-A3 or A-C contingent on the software and project scope. If data for other stages is available, we will seek to interpret the data and how it might be used to develop future reduction goals.
- Material quantities will be calculated using both Revit and hand calculations.
- Embodied carbon will be determined by leveraging the EC3 database. We will also start our own library of EPDs to further our understanding of locally available EPD data.
- Develop standard method of data visualization for LCAs performed.



Sonoma County Airport

Santa Rosa, CA

Photo Courtesy of [MGV Photography](#)

REPORTING PLAN



Sonoma County Airport

Santa Rosa, CA

Photo Courtesy of [MGV Photography](#)

ZFA's 2025 efforts highlighted the necessity for clear and measurable reporting goals. We will be looking to develop long-term LCA targets that are coordinated with project workflow.

Other long-term goals will include:

- Develop internal process for estimating embodied carbon during early project projects to compare different structural systems
- Develop LCA templates for various project types to streamline processes

ELECTIVE DOCUMENTATION

EDUCATION

- Since joining the program, ZFA has provided at least one firm-wide training per year with recordings provided to Employees, including new Employees.
 - ZFA is committed to continuing our education effort by provided one company-wide training that serves as a continuation of previous webinars.
- This year, we are seeking to train more employees on how to perform LCA's with the goal to have a LCA Champion in each of ZFA's offices.
- Externally, ZFA will engage with the wider community by continuing to attend events hosted by CLF San Francisco and AIA.

REPORTING

- Continue providing LCA data to the SE 2050 database for a minimum of (5) projects.
- Include all structural quantities in SE 2050 database submissions.
- Compare the embodied carbon emissions from multiple projects across our company. Analyse and document what data or pieces of information are most important and communicate the findings.

ELECTIVE DOCUMENTATION

REDUCTION

- Develop target reduction goals with a 1 year and 5 year horizon.
- Develop and implement a workflow that makes it easier to make early design decisions based on embodied carbon.
- Submit a Circular Economy Narrative describing how a project supports the circular economy.
- Update specifications to incorporate embodied carbon performance. Include embodied carbon in our company-wide submittal review requirements.

ADVOCACY

- ZFA will continue to describe and communicate the value of reducing embodied carbon to clients
- ZFA has and will continue highlighting our participation in the SE 2050 program via our webpage and LinkedIn posts.
- ZFA will look for more opportunities to conduct whole building LCA's with cross-functional design teams to understand how we can reduce embodied carbon and provide value to clients.
- Further identify opportunities to educate clients on SE 2050, embodied carbon and reduction strategies.