SE 2050 EMBODIED CARBON <u>ACTION PLAN</u>

2022



KILROY HEIGHTS AT DEL MAR LEED GOLD CERTIFIED

1 INTRODUCTION

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EXECUTIVE SUMMARY -

What if we could grow a building? It's a question worthy of being asked. At its root are the seeds of hope, curiosity, beauty, and balance, evolving into a living structure, both giving to and receiving from its environment. The following Action Plan outlines our first seedling steps in the approach to achieving the goal of the SE 2050 commitment and to ultimately designing net-zero embodied carbon structures by 2050.

The approach to Education, Reporting, Reduction, and Advocacy we aim to achieve in this first year of the SE 2050 Building Challenge is outlined in the following pages. A key element of our approach is the establishment of a Sustainable Design Production Group that will oversee the implementation of our goals and be a guiding force to educate our staff on the structural engineer's role in sustainable design. Quarterly presentations will anchor the education of our engineers while we track our first projects using the Tally software for Life Cycle Assessment (LCA) Reporting. Our Reduction strategies will target concrete mix designs, use of biogenic materials, and embodied carbon comparison studies for at least one of our projects. We will advocate for our commitment by sharing our vision with our network through outgoing communications, especially celebrating our projects honored with sustainable design related awards, such as the County of San Diego East County Office and Archives building, which achieved its success through the use of exterior tilt-up concrete walls as thermal mass to reduce the peaks of energy usage.

Heartfelt gratitude goes out to our esteemed group of compassionate employees serving this cause. Particularly, Jacob Gottlieb for transforming a key initiative of our strategic planning of 2021 into this sustainable strategy and taking the helm as the Coffman Embodied Carbon Reduction Champion.

We invite you to join us at the seed of this journey that aims to grow into a vibrant structural design philosophy of sustainability, that becomes as inherent to the choices we make for materials, systems, resilience, and safety of the buildings we are honored to design.

James R. Conley, SE, Structural Principal, Coffman Engineers

THOMAS JEFFERSON SCHOOL OF LAW LEED GOLD CERTIFIED

2 EDUCATION | OUR EXPERTS

Sustainability has always been important to our Coffman San Diego team and 2021 saw our team emphasize sustainability as one of our key initiatives for the year. Throughout 2021, we have been working diligently to develop a plan to help us achieve a more sustainable built environment. This culminated with the formation of our own internal Sustainable Design Production Group and our commitment to SE 2050. This dedicated group of engineers and technicians will continue to develop, organize, and implement the tools and best practices required for our team to achieve net-zero structural systems.

EMBODIED CARBON REDUCTION CHAMPION



Jacob Gottlieb, PE

Jacob Gottlieb, a Structural Engineer in Coffman's San Diego office, is our Embodied Carbon Reduction Champion. As Embodied Carbon Reduction Champion, Jacob has taken the lead in solidifying Coffman's SE 2050 commitment and developing this ECAP. Jacob will continue to serve as the main advocate of implementing practices to reach SE 2050 throughout Coffman's structural engineering department.

- STRUCTURAL ENGINEERING PRINCIPAL -



Casey Whitsett, SE

Casey Whitsett is a Structural Engineering Principal in our San Diego office. As a past president and current member of the Board of Directors of the Structural Engineers Association of San Diego, Casey's leadership and involvement in the structural engineering community gives him multiple outlets to spread the word about SE 2050 and teach sustainable design practices to younger engineers.

STRUCTURAL ENGINEERING PRINCIPAL



James "Jim" Conley, SE, DBIA

Jim Conley is a Structural Engineering Principal in our San Diego office and has extensive knowledge and experience with structural engineering design. His involvement in organizations such as the Structural Engineers Association of San Diego and the Post-Tensioning Institute, coupled with his passion for sustainability, make him a strong advocate and leader of SE 2050. As engineers, we have a responsibility to our communities to go beyond simply designing structurally sound buildings. We aspire to provide innovative solutions to our greatest challenges. SE 2050 will allow us to combine the collective energies of our profession to achieve net-zero structural systems and help our communities thrive. I am excited to help drive the effort towards a net-zero future."

-Jacob Gottlieb

Embodied Carbon Reduction Champion

VICTOR VALLEY TRAINING CENTER LEED GOLD CERTIFIED

2 EDUCATION | OUR STRATEGY

Achieving net-zero structural systems begins by educating our team on current carbon reduction strategies and resources and continuing to seek opportunities to learn in the future. We have developed a plan for teaching and empowering our staff which includes:

- In-House Presentations from Subject Matter Experts on Material-Specific Carbon Reduction Strategies
- Distributing Regular Email Updates to Highlight Carbon Reducing Strategies
- Making LCA Tools, Documents, and Presentations Available on Internal Company Networks
- ▶ Incorporating an SE 2050 Onboarding Procedure for New Hires

In addition to our Embodied Carbon Reduction Champion, we will empower our employees to take leadership in this initiative by organizing a Sustainable Design Production Group who will:

- Prioritize and Implement our SE 2050 Goals
- Review and Share Tools and Other Educational Content
- Present SE 2050 to Other Coffman Structural Department Leadership
- Work to Establish Sustainable Design Production Groups in Each Coffman Structural Department



O12022 O2 2022 ISSUE 2021 ECAP INTRODUCE LCA ANALYSIS TO NEW PROJECTS "SE 2050 EMBODIED CARBON 101 UPDATE STANDARD PROPOSAL LANGUAGE WEBINAR" PRESENTED TO LOCAL STAFF TO HIGHLIGHT SE 2050 COMMITMENT COFFMAN REPRESENTATIVE ATTENDS QUARTERLY EXTERNAL EDUCATION PROGRAMS PERIODIC EMAIL DISTRIBUTIONS TO STAFF SHARING THE TOP 10 CARBON REDUCING ACTIONS FOR STRUCTURAL ENGINEERS "HOW TO CALCULATE EMBODIED CARBON" INCORPORATE SE 2050 ONBOARDING COMPLETE FIRST LCA PROJECT UPLOAD PROJECT LCA DATA TO SE 2050 DATABASE PRESENTED TO ALL TECHNICAL STAFF PROCEDURE FOR NEW HIRES ASSESSMENT **REVIEW 2022 ACCOMPLISHMENTS AND** REVISE STRUCTURAL SPECIFICATIONS ESTABLISH 2023 GOALS TO REFLECT CARBON REDUCTION 3 **BEST PRACTICES**

3 REPORTING

MEASURE

We will measure embodied carbon using Life-Cycle Assessment tools which will allow us to gather information about the carbon impact of our projects, as well as plan for future reductions. Initially, we will focus on embodied carbon found in specified materials by documenting their embodied carbon potential, material sources, and quantities in our projects. Data gathered will be shared with our engineers, as well as SE 2050 in accordance with their guidelines to provide helpful insight into our projects and assist with carbon reduction strategies on a global scale.

- EDUCATE

Education is the foundation for meeting the goals set out in SE 2050. Coffman will provide quarterly training sessions with our engineers focused on identifying embodied carbon in design, tracking its prevalence in our structures, and discussing techniques for reduction.

- PLAN

Coffman is actively engaging with architects and owners on establishing project sustainability goals beginning at project initiation and implementing them through the life of the project.

By the end of 2022, Coffman will submit our first LCA-based projects to the SE 2050 database.

- TRACK



PROJECT HIGHLIGHT

REDUCTION

Coffman provided structural engineering design for the SDG&E Energy Innovation Center in San Diego, CA which transformed a grocery store into a state-of-the-art facility which showcases different examples of leading technologies for energy efficiency. The project was one of the first ten buildings in the world to achieve double LEED Platinum certification.

NOVATION CENTER

SDG&E ENERGY INNOVATION CENTER LEED PLATINUM CERTIFIED

COMMUNITY

FOR OUR FIRST YEAR COMMITTING TO SE 2050, COFFMAN WILL FOCUS PRIMARILY ON **DATA GATHERING**

OF EMBODIED CARBON IN EXISTING AND NEW PROJECTS.

- By the end of 2022, we will identify and implement our first project specific embodied carbon reduction plan, collaborating with the design and construction teams to set achievable targets.
- By the end of 2022, we will create an embodied carbon comparison study to assess the impacts and efficiencies of different materials and share these results with our clients and staff.
- We will update our current specifications and structural notes to incorporate sustainable best practices and reduced embodied carbon materials.

- Our staff will continue to work with concrete suppliers to identify and implement reduced embodied carbon mix designs which meet the project design and sustainability goals.
- Coffman will continue to incorporate biogenic materials in our structural designs and seek opportunities to incorporate new or alternative biogenic materials into our designs.
- We will advocate for the use of domestic steel for its high recycled content and reduced shipping.

5 ADVOCACY

Advocating for SE 2050 will be a multi-targeted goal, focusing on educating clients, contractors, owners, and our structural peers. Throughout 2022 and beyond, we will prepare presentations for our colleagues highlighting SE 2050, the steps we are taking internally, and other key information which they can use to achieve more sustainable structures. We will use these opportunities to identify how best to collaborate to achieve these goals and share our collective knowledge to make meaningful carbon reductions.

> SANFORD CONSORTIUM LIFE SCIENCE BUILDING LEED GOLD CERTIFIED

AT COFFMAN, WE ARE PROUD AND EXCITED TO BE COMMITTED TO THE SE 2050 CARBON NEUTRAL PROGRAM. WE WILL CONTINUE TO SPREAD THE WORD TO OUR COMMUNITY BY:

ACTIVELY ENGAGING CLIENTS AND OWNERS TO INCOPORATE STRUCTURAL MATERIALS WITH ENVIRONMENTAL PRODUCT DECLARATIONS (EPDS) IN THE DESIGN PROCESS

INCORPORATING OUR SE 2050 COMMITMENT INTO OUR STANDARD PROPOSAL LANGUAGE

ANNOUNCING OUR SE 2050 COMMITMENT AND DETAILS ABOUT THE PROGRAM ON OUR WEBSITE AND SOCIAL MEDIA

Check out our SE 2050 Commitment Announcement! www.coffman.com/news/coffman-commits-to-se-2050



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