Pacific Center
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COFFMAN ENGINEERS

2026 EMBODIED CARBON ACTION PLAN

EXECUTIVE SUMMARY

Growth was the theme for Coffman's sustainable structures approach in 2025. Coffman Engineers grew in stewardship of both our natural environment and the built environment we design. We proudly engineer solutions in concert with owners, clients and consultants, with a goal of continued improvement, year over year. This growth is readily seen in our year five steps in the approach to achieving the goal of the SE2050 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 fifth year of the SE2050 Building Challenge is outlined in the following pages. Our Sustainable Design Production Group oversees the implementation of our goals and is a guiding force to educate our staff on the structural engineer's role in sustainable design. Quarterly presentations continue to anchor the education of our engineers and we expanded the group of engineers familiar with reporting by exceeding our goal of 20 projects posted to the SE2050 database, having all our larger structural departments across Coffman perform and submit at least one LCA. In the Reduction area, we were also excited to work with our fellow design team members on multiple Higher Education projects aiming for various levels of LEED certifications. Our Advocacy for carbon reducing strategies, particularly for the use of Type 1L cement in our concrete projects, lead to use of the material in a number of our buildings, reducing embodied carbon of the concrete by 10% over traditional concrete buildings of the exact same design.

As we move forward in 2026, we will extend our LCA Analysis process to all Coffman structural departments, training structural engineers across our offices to help us reach a goal of thirty (30) buildings submitted to the SE2050 database.

We invite you to continue with us on 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. Change is happening in the right direction.

James R. Conley, SE, Embodied Carbon Reduction Champion, Coffman Engineers, Inc.

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INTRODUCTION

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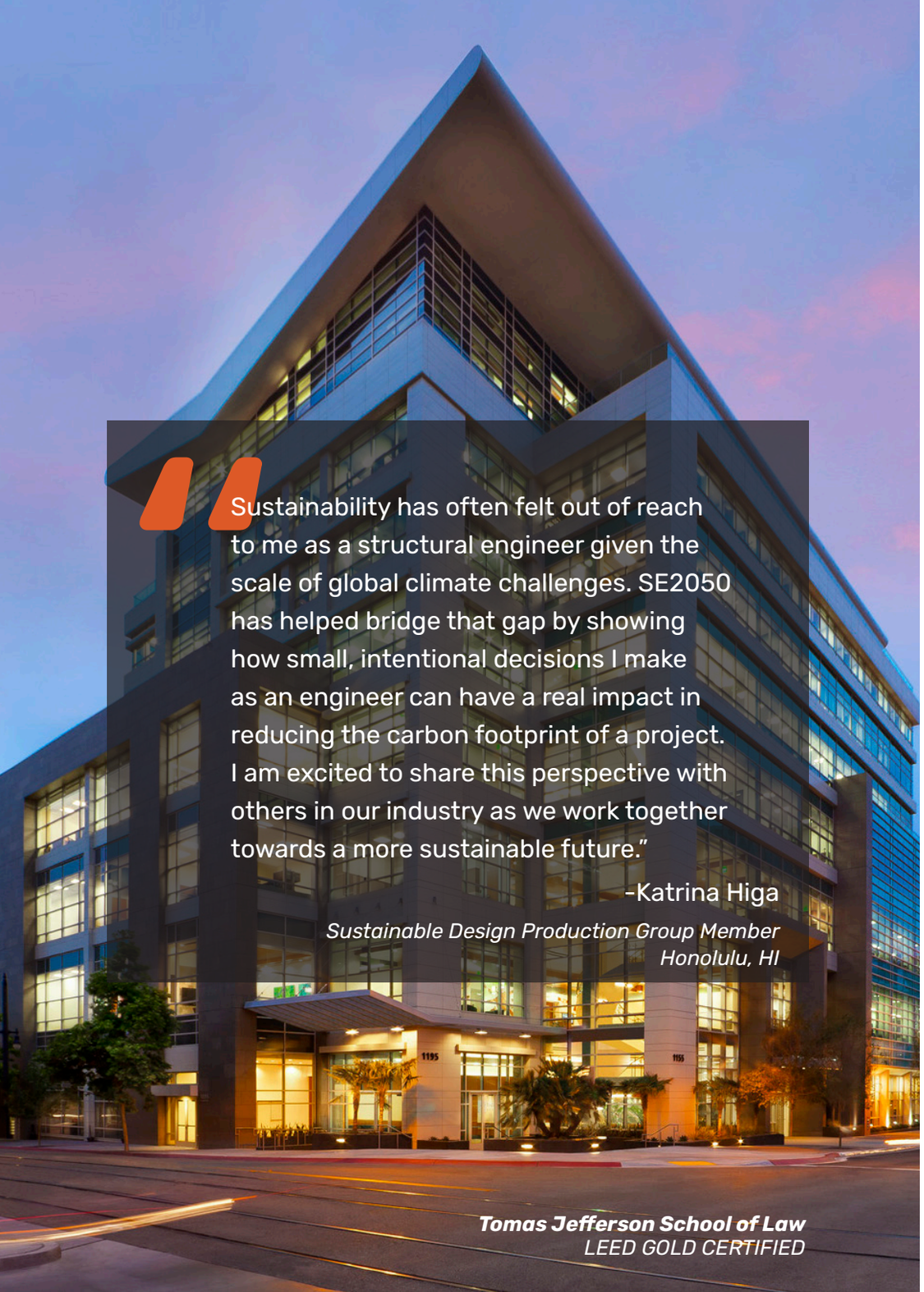

> Sustainability has often felt out of reach to me as a structural engineer given the scale of global climate challenges. SE2050 has helped bridge that gap by showing how small, intentional decisions I make as an engineer can have a real impact in reducing the carbon footprint of a project. I am excited to share this perspective with others in our industry as we work together towards a more sustainable future."
>
> -Katrina Higa
>
> *Sustainable Design Production Group Member*
> *Honolulu, HI*

Tomas Jefferson School of Law
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1 | EDUCATION (OUR EXPERTS)

Sustainability has always been important to our Coffman team. Starting with our San Diego office in 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 SE2050 in 2021. Since then, this dedicated group of engineers and technicians has continued to develop, organize, and implement the tools and best practices required for our team to achieve net-zero structural systems.

Major highlights of the past year on the Education front included hosting a presentation for our local structural engineers association. It was a 'watch party' of a joint AIA/SEAOC presentation series on the new CalGreen Embodied Carbon supplement. The presentation was a targeted summary of the primary key elements of the three presentations, consolidated into an approximately one hour long re-watch for members benefits. Presentations on masonry by a San Diego local CMU block manufacturer, RCP Block and Brick, also help round out our education.

For 2026, one of our education goals is to bring our ECAP presentation to all of our structural departments across the company. This will further advancement in educating our structural peers on the commitments and practices of Coffman toward structural sustainability.

EMBODIED CARBON REDUCTION CHAMPION

James "Jim" Conley, SE, DBIA

Jim Conley is a Senior Discipline Manager in our Denver office and has extensive knowledge and experience with structural engineering design. He enthusiastically took on the role of Embodied Carbon Reduction Champion for Coffman and is our structural lead on sustainability 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 SE2050. Jim will serve as the main advocate of implementing practices to reach SE2050 goals across Coffman's structural engineering departments companywide.

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 SE2050 and teach sustainable design practices to younger engineers.

2 | KNOWLEDGE SHARING

Achieving net-zero structural systems begins by sharing knowledge with our team and clients 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
- Maintaining an SE2050 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 SE2050 Goals
- Review and Share Tools and Other Educational Content
- Continue to Present SE2050 to Other Coffman Structural Departments Leadership
- Continue to Present Work to Establish Sustainable Design Production Groups in Our Larger Coffman Structural Department

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Q1 2026
- Continue to train Coffman structural departments across the company on the LCA Analysis procedure.

Q2 2026
- ISSUE 2026 ECAP

Q3 2026
- TRAIN ALL OTHER COFFMAN STRUCTURAL DEPARTMENTS ON THE LCA ANALYSIS PROCESS

Q4 2026
- UPLOAD PROJECT LCA DATA TO SE2050 DATABASE

COFFMAN REPRESENTATIVE ATTENDS QUARTERLY EXTERNAL EDUCATION PROGRAMS

PERIODIC EMAIL DISTRIBUTIONS TO STAFF SHARING THE TOP 10 CARBON REDUCING ACTIONS FOR STRUCTURAL ENGINEERS

- CONTINUE TO INCORPORATE SE2050 ONBOARDING PROCEDURE FOR NEW HIRES
- WATCH A PRESENTATION BY SEAOSD SUSTAINABLE DESIGN COMMITTEE FULL STRUCTURE RE-USE OF A STEEL BUILDING IN BOULDER, CO.
- COMPLETE INTENDED LCA PROJECT ASSESSMENTS
- REVIEW 2026 ACCOMPLISHMENTS AND ESTABLISH 2026 GOALS

3 | REDUCTION

PROJECT HIGHLIGHT

The University of Idaho's McCall Field Campus is adding a new 9,800 sf dining and kitchen hall to support its expanding year-round environmental education programs. Designed to pursue Living Building Challenge Petal Certification, the wood-framed facility emphasizes low-embodied-carbon, Red List–free materials, outdoor dining spaces, and long-term sustainability aligned with the campus mission.

				Excluding Biogenic Carbon (kgCO2e)							
Project Name	Expected Building Life (years)	LCA Tool	Year LCA was performed	A1-A3	A4	A5	B1-B5	C1-C4	D	Total GWP, Stages A-C (kgCO2e)	GWP Intensity, Stages A-C (kgCO2e/m2)
UI McCall Dining Hall	60	Tally	2026	102,678	2,643		12,862	47,961	-10,539	166,144	182.5
Coffman SE2050 Projects - 2025*	60	Tally	2026	1,217,488	16.924		19,314	208,218	85,422	1,452,286	268

*Based on 22 projects across 8 offices

The University of Idaho's McCall Field Campus has long served as a center for environmental education, research, and economic development, leveraging its unique location to provide immersive, outdoor-based learning opportunities. Operating since the mid-1900s, the campus has evolved significantly as academic programs expanded and transitioned to year-round use. As part of a comprehensive master planning effort, the university identified the need for a new dining and kitchen hall to replace facilities that had outgrown their original capacity and no longer met the functional demands of modern programming.

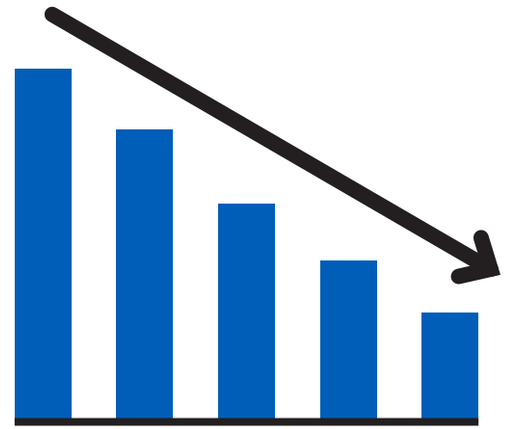
The new approximately 9,800-sf dining and kitchen hall is a one-story facility designed to support daily campus operations while reinforcing the campus mission of sustainability and stewardship. Outdoor decks extend the dining experience into the surrounding landscape, encouraging gathering, connection, and engagement with the natural environment. An integrated attic space houses mechanical and electrical systems, allowing the primary interior spaces to remain efficient, flexible, and visually uncluttered. Material selection prioritized low-embodied-carbon, Red List–free, and durable products to support long-term resilience and reduce environmental impact over the building's life cycle.

In alignment with the university's sustainability goals, the project is pursuing a minimum Living Building Challenge (LBC) Petal Certification and is envisioned as a foundational step toward establishing Idaho's first built Living Building campus. The structural system features a primarily wood post-and-beam gravity system supporting open-web wood trusses, capitalizing on the inherent low embodied carbon of mass timber and wood products. Wood shear walls are strategically located outside the gravity system to allow for continuous exterior insulation, directly supporting energy efficiency and coordinated mechanical and electrical performance. Coffman performed a life-cycle assessment using Tally to evaluate embodied carbon impacts, providing quantifiable data to guide design decisions and support the project's sustainability objectives. As noted in the Table above, at 182.5 kgCO2e/m2 the embodied carbon intensity for the project was about 32% lower than for the average of buildings that Coffman submitted. Together, these strategies reflect a holistic approach to design that balances performance, environmental responsibility, and the long-term needs of the McCall Field Campus community.

3 | REDUCTION

Over the 4 years of our involvement in SE2050, though our sample size is growing, we are proud to already be seeing a reducing in the average GWP Intensity of our projects. Things are reducing in the right direction!

YEAR	# OF PROJECTS	AVERAGE INTENSITY (KGCO2E/M2)
2022	1	335.5
2023	6	320
2024	10	285
2025	22	268



FOR OUR FIFTH YEAR COMMITTING TO SE2050, COFFMAN WILL FOCUS PRIMARILY ON

DATA GATHERING

OF EMBODIED CARBON IN EXISTING AND NEW PROJECTS.

- By the end of 2026, we will identify and implement our revised project specific embodied carbon reduction plan, collaborating with the design and construction teams to set achievable targets.
- By the end of 2026, we will leverage our embodied carbon comparison study to assess the impacts and efficiencies of different materials and share these results with our clients and staff.
- Implement CalGreen GWP maximum requirements in California projects.
- 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.
- Move to a Performance Based Design Concrete Specifications to allow contractors to minimized embodied carbon effects of concrete mixes, where possible

4 | REPORTING

MEASURE

Our committee was proud to exceed our goal of measuring and posting 20 buildings to the SE2050 database. The results captured a wide range in building use, materials and sizes. The table below shows the project names, square footage, brief description, LCA software used, GWP and GWP Intensity. We will continue to track & collect data to help our teams identify where we can have the biggest impact in implementing strategies to make reductions & meet our 2050 goal of Net Zero carbon structures.

EDUCATE

Education is the foundation for meeting the goals set out in SE2050. 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.

TRACK

By the end of 2026, Coffman will submit 30 LCA tracked projects, doubling our goal from last year, and have all structural departments participate in the SE2050 database uploads.

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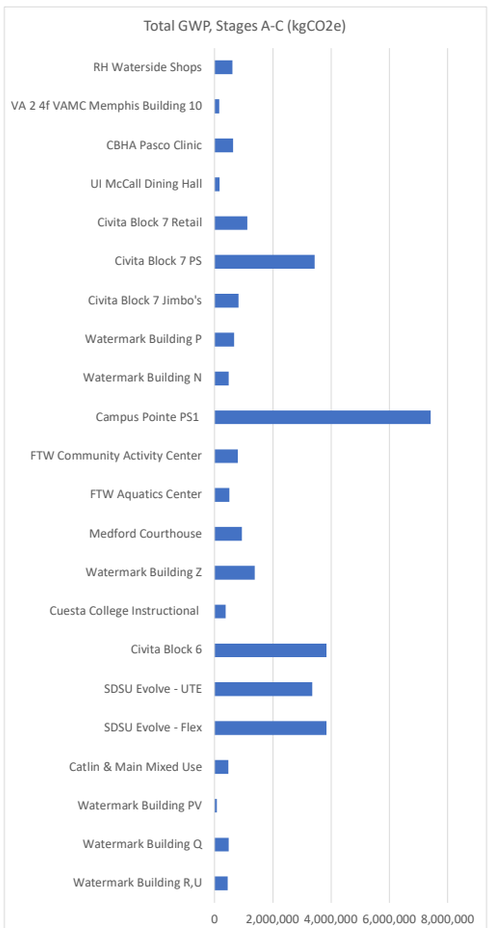
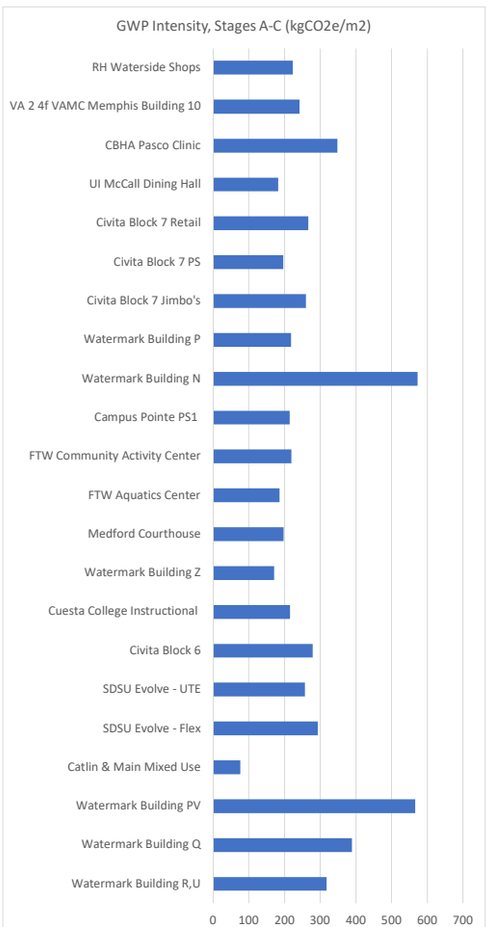
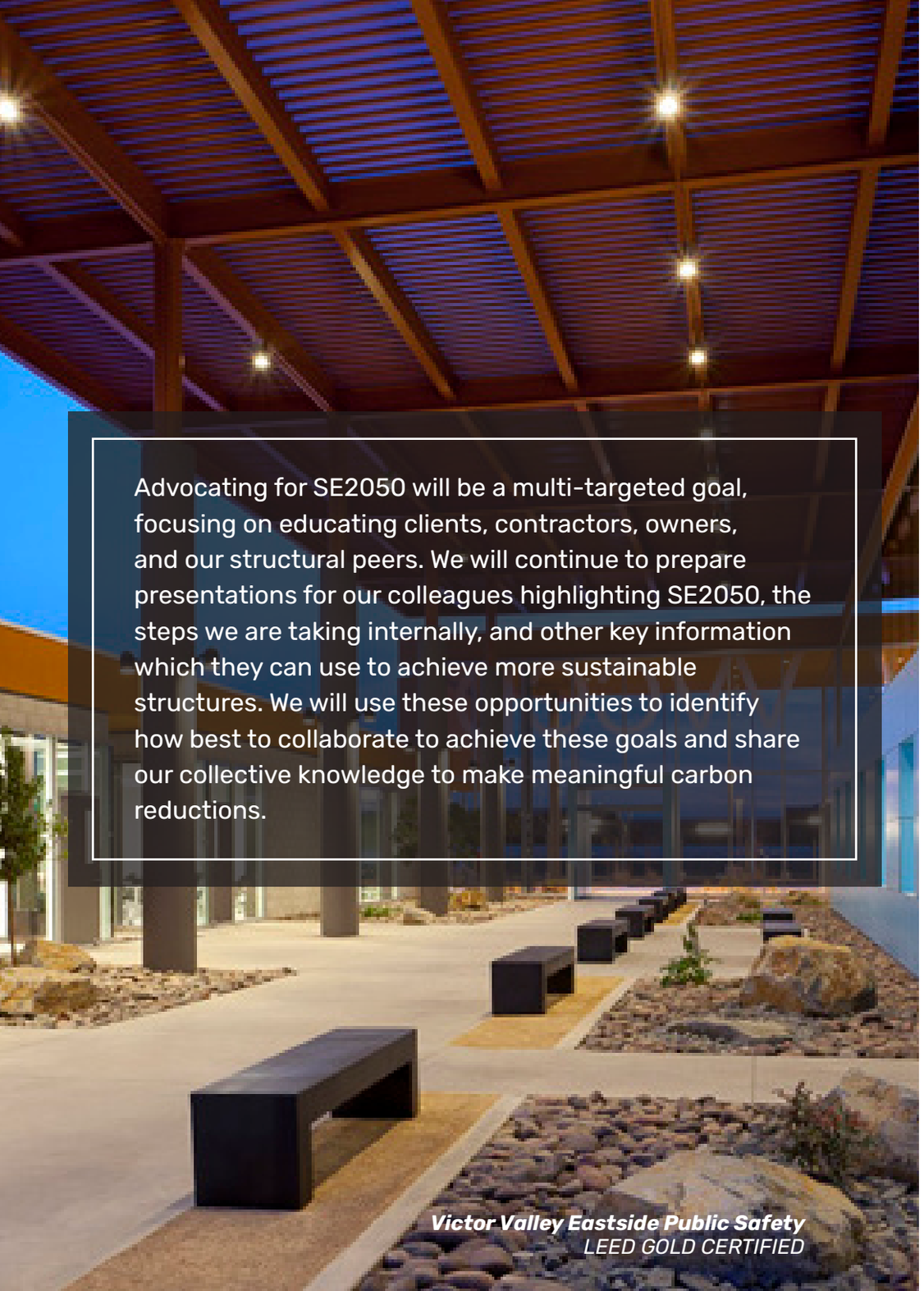
4 | REPORTING

We were thrilled to post 22 projects to the LCA Database. We likely won't be able to keep the pace of doubling every year, and having a good sample size can help inform our sustainable decision making process going forward as we continue to grow our pool of LCA studies. One of the highlights from this year was our **lowest embodied carbon intensity project at 76.3 kgCO2e/m2**. Catlin & Main Mixed Use is a three story all wood residential building with retail on the bottom floor. The minimization of concrete and steel really made a major contribution to reducing GWP.

Project	Description	Gross Square Footage (ft2)	LCA Tool	Total GWP, Stages A-C (kgCO2e)	GWP Intensity, Stages A-C (kgCO2e/m2)
Watermark Building R,U	1-story steel building with steel moment frames and conventional foundations	14,954	Tally	441,318	318
Watermark Building Q	1-story steel building with steel moment frames and conventional foundations	13,248	Tally	478,713	389
Watermark Building PV	1-story steel building with special cantilevered columns and conventional foundations	1,443	Tally	75,947	567
Catlin & Main Mixed Use	3-story wood framed building with conventional foundations	66,000	Tally	467,707	76
SDSU Evolve - Flex	10-story reinforced concrete building with concrete shear and core walls supported on a full building mat foundation and elevated two-way post-tensioned slabs.	140,693	Tally	3,832,636	293
SDSU Evolve - UTE	10-story reinforced concrete building with concrete shear and core walls supported on mat foundations, and elevated two-way post-tensioned slabs.	140,329	Tally	3,346,069	257
Civita Block 6	7-story building with a 3story mild reinforced concrete podium structure, featuring concrete shear and core walls on mat foundations, supporting stories of wood structure with wood panel floors and wood shear walls above	148,294	Tally	3,839,618	279
Cuesta College Instructional	1-story steel building with steel moment frame and cold-formed stud shear walls and conventionalal foundations	18,800	Tally	375,770	215
Watermark Building Z	5-story building with a mild reinforced concrete podium structure at the bottom story, featuring concrete shear and core walls on mat foundations, supporting 4 stories of wood structure with wood panel floors and shear walls above.	86,892	Tally	1,381,053	171
Medford Courthouse	2-story concrete tilt-up building with a steel framed second floor and open-web joists at the roof. Concrete shear walls and conventional foundations	50,691	Tally	930,465	198
FTW Aquatics Center	1-story steel framed building with ordinary steel concentrically braced frames with conventional spread footings and slabs on grade.	29,000	Tally	499,559	185
FTW Community Activity Center	1-story building, primarily steel framed, except for glulam beam high roof framing, with ordinary steel concentrically braced frames, conventional spread footings and slabs on grade.	39,000	Tally	793,609	219
Campus Pointe PS1	7.5-story (4 levels above grade and 3.5 levels below grade) cast-in-place concrete long-span post-tensioned parking garage with concrete moment frames and conventionalal shallow foundations	371,797	Tally	7,412,146	215
Watermark Building N	1-story steel building with steel moment frames and conventional foundations	9,054	Tally	481,899	573
Watermark Building P	1-story masonry building with steel open-web joists and conventional foundations. The lateral system consists of special reinforced masonry shear walls.	32,664	Tally	662,663	218
Civita Block 7 Jimbo's	1-story masonry building with steel open-web joists and masonry shear walls and conventional shallow foundations	33,767	Tally	815,743	260
Civita Block 7 PS	2-story cast-in-place concrete long-span post-tensioned parking garage with concrete moment frames and conventionalal shallow foundations	188,632	Tally	3,433,301	196
Civita Block 7 Retail	2-story steel building with steel moment frames and conventionalal shallow foundations	45,036	Tally	1,116,356	267
UI McCall Dining Hall	1-story wood framed building with a mechical/elecrical "attic space." The gravity system consists of a post and beam system that supports open-web wood trusses. The lateral systems consists of wood shear walls that are located outboard of the gravity system to allow for a continuous building envelope.	9,800	Tally	166,144	183
CBHA Pasco Clinic	2-story wood framed building. The gravity system consists of wood bearing walls supporting wood I-joists. The front entry is a 1-story area that utilizes a post and beam system that supports a 5-ply CLT roof. The lateral system consists of wood shear walls.	19,730	Tally	637,637	348
VA 2 4f VAMC Memphis Building 10	2-story masonry building with conventional foundations. The gravity system consists of open web steel joists and reinforced CMU walls. The lateral system consists of steel moment frames.	6,778	Tally	151,980	241
RH Waterside Shops	Six 1-story wood framed retail buildings with a 1-story steel restaurant structure. The wood buidtings use LSL framing with light frame wood shear/bearing walls and Redbuilt composite open web roof trusses. The steel building uses wide-flange steel columns and beams, with a moment frame lateral system. The north half of the campus is supported by a deep foundation system with grade beams, and the south portion is supported by shallow foundations.	29,442	Tally	609,966	223
			Average Intensity		268







Advocating for SE2050 will be a multi-targeted goal, focusing on educating clients, contractors, owners, and our structural peers. We will continue to prepare presentations for our colleagues highlighting SE2050, 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.

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5 | ADVOCACY

AT COFFMAN, WE ARE PROUD AND EXCITED TO BE COMMITTED TO THE SE2050 CARBON NEUTRAL PROGRAM. WE WILL CONTINUE TO SPREAD THE WORD TO OUR COMMUNITY BY:

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

- INCORPORATING OUR SE2050 COMMITMENT INTO OUR STANDARD PROPOSAL LANGUAGE.

- COMMUNICATING OUR SE2050 COMMITMENT AND DETAILS ABOUT THE PROGRAM ON OUR WEBSITE AND SOCIAL MEDIA.

6 | LESSONS LEARNED

Residential Compare and Contrast

This summary compares three residential type projects —two SDSU Evolve schemes (Flex and UTE) and Civita Block 6—across program/scale, structural approach (including podium/transfer conditions), geotechnical assumptions, and embodied-carbon results (GWP total and intensity for stages A–C, excluding biogenic carbon).

Key Similarities

- **Location / delivery:** All are in San Diego, CA and are shown as new-construction projects with 60-year expected building life.
- **Foundation approach:** All are listed as shallow foundations, reinforcing the importance of bearing values and geotechnical assumptions when comparing options. Flex has mat slab foundations.
- **Scale:** All are of similar order of magnitude (~140–148k ft²), enabling a meaningful intensity-based carbon comparison.

Key Differences

- **Program / use type:** SDSU Evolve (Flex and UTE) is listed as Education, while Civita Block 6 is listed as Mercantile or Mixed Use.
- Height / stories: SDSU Evolve is taller and more vertical (9 stories above grade; mean roof height 95.5 ft) versus Civita Block 6 (7 stories; mean roof height 85 ft).
- **Structural systems and podium condition:** SDSU Evolve uses a concrete system (PT framing with CIP vertical system and concrete shear walls) and is not a podium building. Civita Block 6 uses a wood light-frame system (joists/sheathing with shear panels) and is identified as being on a podium, aligning with the "transfer decks / integration of parking" insight as a likely driver of embodied impacts.
- **Geotechnical assumption (allowable bearing):** SDSU Evolve assumes 6,000 psf, while Civita Block 6 assumes 4,000 psf—an important difference when considering foundation quantities and feasibility.
- **Column grid (indicative spans):** SDSU Evolve is shown at 25–28 ft (long) by 23 ft (short), while Civita Block 6 is 30 ft by 29 ft, suggesting different span efficiency and potential material implications.
- **Embodied-carbon outcomes (Stages A–C):** On an intensity basis, SDSU Evolve—UTE is lowest (256.7 kgCO2e/m²), Civita Block 6 is mid (278.7 kgCO2e/m²), and SDSU Evolve—Flex is highest (293.2 kgCO2e/m²). Total A–C GWP is highest for Civita Block 6 (3,839,618 kgCO2e) and SDSU Evolve—Flex (3,832,636 kgCO2e), with SDSU Evolve—UTE lowest (3,346,069 kgCO2e).

Lessons Learned

- **Foundations / bearing values matter:** The 6,000 psf vs 4,000 psf assumption can materially change foundation sizing and may partially explain differences even among similarly sized buildings. The large mat slabs of Flex are likely a key contributor to the higher embodied carbon.
- **Value of post-tensioning (P/T):** The concrete PT schemes show competitive A–C intensities (especially the UTE scheme), supporting the point that P/T can be beneficial from a GWP standpoint when it reduces quantities and improves spans.
- **Transfer decks / podium effects**: The podium condition flagged for Civita Block 6 is a key variable to call out, since transfers and integrated parking/podium structure can add material and shift embodied-carbon results beyond what "wood vs concrete" alone would suggest. **A lower embodied carbon intensity was anticipated with the wood framing consisting of more than half of the Block 6 building, but the podium and parking conditions offset those embodied carbon benefits.**

Civita Block 6


SDSU Evolve
TARGETING: LEED Silver

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Check out our SE2050 Commitment Announcement!
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