2026

EMBODIED CARBON ACTION PLAN

MAGNUSSON KLEMENCIC ASSOCIATES

Structural + Civil Engineers

Seattle Chicago

CONSISTENT COMMITMENT

MKA has demonstrated leadership in embodied carbon reduction and sustainability dating back to some of the first carbon calculations for structures in 2008. We remain actively engaged by guiding the industry and making investments to accelerate the evolution of this topic and create the most significant carbon reduction on our projects.

MKA'S EMBODIED CARBON LEADERSHIP

2008
MKA Carbon Calculator for Structures

2009
Contributed to founding of the Carbon Leadership Forum

2011
Early adopter of Architecture 2030 Challenge for Products

2012
Green Building Council Development

2014
LUMINA
SAN FRANCISCO
First use of Tally LCA model and concrete EPDs in San Francisco

Cirrus
SEATTLE
First use of Tally LCA model and concrete EPDs in Seattle

2015
CTBUH – Life-Cycle Assessment of Tall Building Structural Systems Book

2016
MKA Foundation launched

2018
Beaudry
LOS ANGELES
First use of concrete EPDs in Los Angeles

MKA Foundation, lead funder and executive leadership team for EC3

2019
Launch of EC3 Tool
Testified in 'Buy Clean' legislative hearings

2020
Salesforce
CHICAGO
First use of concrete EPDs in Chicago

MKA joins SE 2050 Commitment

2022
MKA and Hines co-author company-wide Embodied Carbon Reduction Guide

2023
MKA partners with Building Transparency to develop Carbon Results Framework Project

2025
MKA collaborates with industry partners to create the initiative 'CURE' (Code Updates for Reduction of Embodied-Carbon)

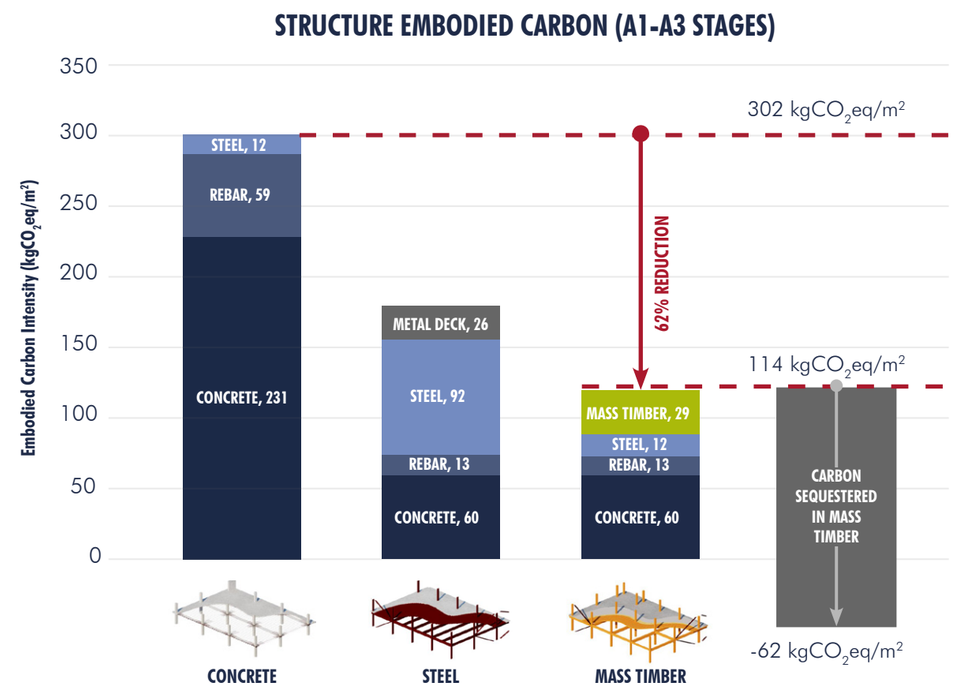
GLULAM BEAMS AND CONCRETE CORE USED IN THE CONSTRUCTION OF UNIVERSITY OF WASHINGTON FOSTER SCHOOL OF BUSINESS FOUNDERS HALL BUILDING

University of Washington Foster School of Business Founders Hall

Upon opening, the project was named the University's "greenest building," designed to achieve a cumulative carbon reduction of **76% for operational and embodied carbon**, use **70% less energy,** and **53% less water** compared to typical facilities built with conventional methods.

EXPERT GUIDANCE

MKA's Sustainability Technical Specialist Team regularly performs structural life cycle analyses (LCA) to evaluate the embodied carbon impacts of structural system selection. This specialization and high-level understanding of LCA are key components of the early guidance we can provide our clients in order to discern the impact of embodied carbon in system selection. For example, the comparison below highlights the embodied carbon reduction achieved for the University of Washington Foster School of Business Founders Hall project compared to traditional concrete buildings. For this project, the savings were particularly impactful due to the lightweight mass timber superstructure, which allows further reductions of concrete and reinforcement in foundations and shear walls.



Using the latest advancements in LCA will continue to be a mainstay in our mission to provide clients with the most informed early guidance on design decisions impacting embodied carbon.

ADVANCING SUSTAINABILITY

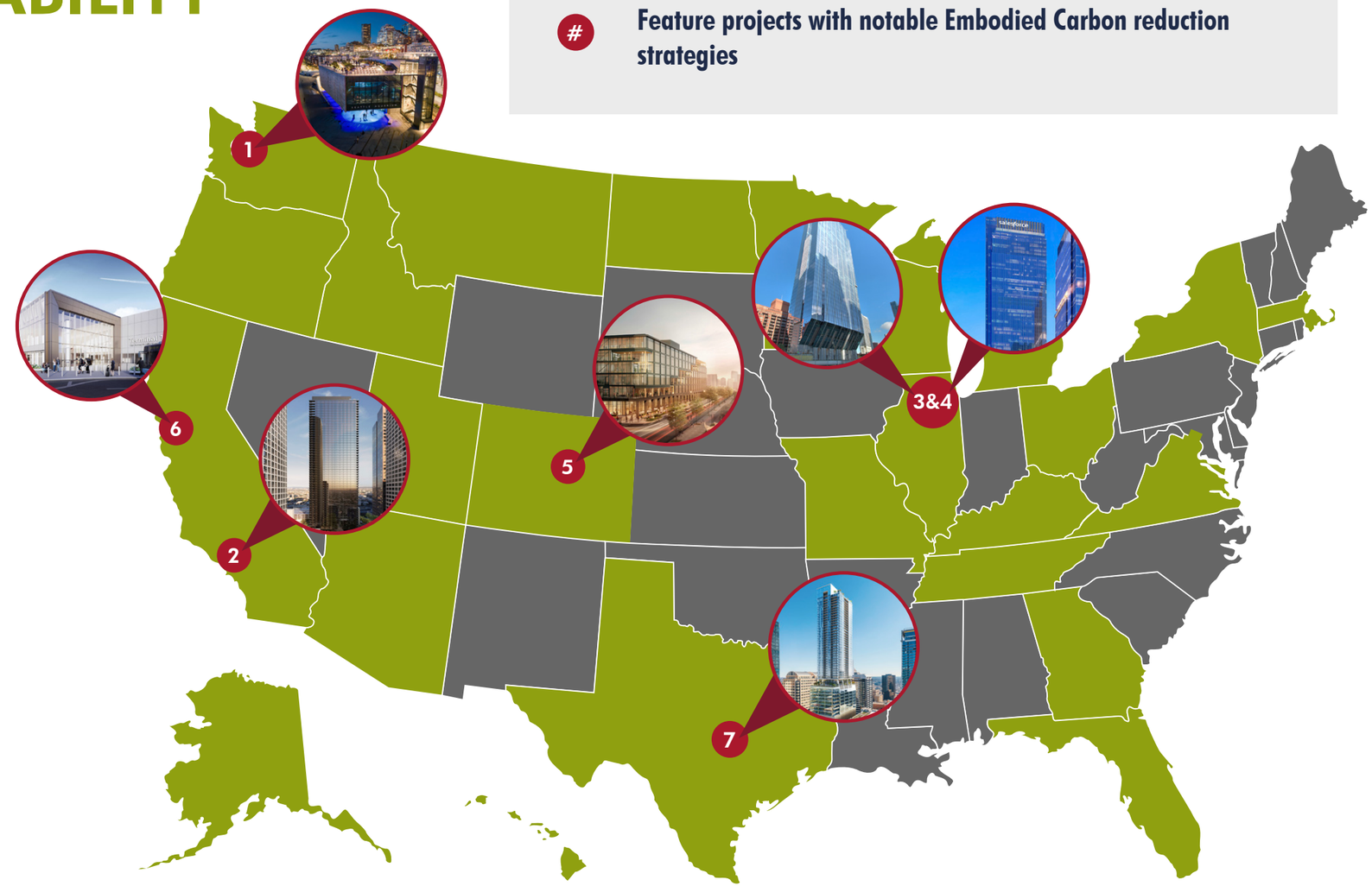
Our team constantly advances sustainability using the latest materials and carbon reduction strategies. Within MKA's Sustainability Technical Specialist Team, we actively collaborate with material suppliers and innovative new technologies to be on the leading edge of low-carbon construction.

This includes the latest low-carbon concrete strategies like novel cements and cement reduction. For structural steel, this includes procurement strategies that prioritize steel from lower-carbon electric-arc furnace mills and utilizing higher-grade steel for overall tonnage and embodied carbon reduction. Our team has also been an advocate for use of mass timber as a lower-carbon structural system compared to concrete or structural steel, including more than 30 mass timber projects in the past 15 years.

Below are examples of effective carbon reduction strategies MKA has used on recent projects. MKA will continue to lead the industry in developing carbon reduction strategies for our projects moving forward.

States where MKA has LEED-certified projects, including those that have leveraged the use of Embodied Carbon reduction

 # Feature projects with notable Embodied Carbon reduction strategies



1 Seattle Aquarium Ocean Pavilion
Seattle, WA

- 32% reduction in embodied carbon in structure and envelope.
- Low-carbon concrete with 38% less embodied carbon compared to typical aquarium.

2 Beaudry
Los Angeles, CA

- First major project to use Environmental Product Declarations in Los Angeles.
- Utilized lowest carbon concrete mixes in the market.
- Saved 13,650 metric tons of equivalent carbon dioxide at no additional cost.

3 150 North Riverside
Chicago, IL

- Used high-strength steel for columns and trusses to save 510 tons of steel.
- First use of Grade 70 steel in the US.
- Saved 530 metric tons of equivalent carbon dioxide emissions.

4 Salesforce Tower
Chicago, IL

- First use of Hines Embodied Carbon Reduction Guide.
- Achieved reductions of embodied carbon of 27% for concrete and 9% for steel.

5 T3 RiNo
Denver, CO

- Innovative mass timber office used less than half embodied carbon compared to concrete building.
- Timber fiber required for the structure is regrown in North American forests in approximately 15 minutes.

6 SFO Harvey Milk Terminal
San Francisco, CA

- Industry-leading use of concrete with BluePlanet carbon-sequestering aggregate
- Procured low-carbon concrete and steel for 20% overall embodied carbon reduction.

7 ATX Tower (321 W. 6th)
Austin, TX

- World's first Performance-Based Wind Design tower to reduce material quantities.
- Saved 350 tons rebar, 125 tons steel, and 1800 cy concrete.
- Total savings of more than 1,000 metric tons of equivalent carbon dioxide emissions.

MANAGING POLICY SHIFTS

Changes surrounding embodied carbon are also occurring at the policy level. Local, state, and national policy developments are sure to impact many future developments. Because of MKA's recognized leadership and expertise in the industry, we are often asked to provide input on these policies.

MKA has been working with the City of Seattle on establishing appropriate embodied carbon limits for construction materials. At the state level, MKA is involved in California's new CALGreen requirements, the first mandatory state-level embodied carbon limits. At the national level, MKA participates in the National Science Foundation's Concrete Product Category Rule Committee, which sets the new standards for developing concrete EPDs.

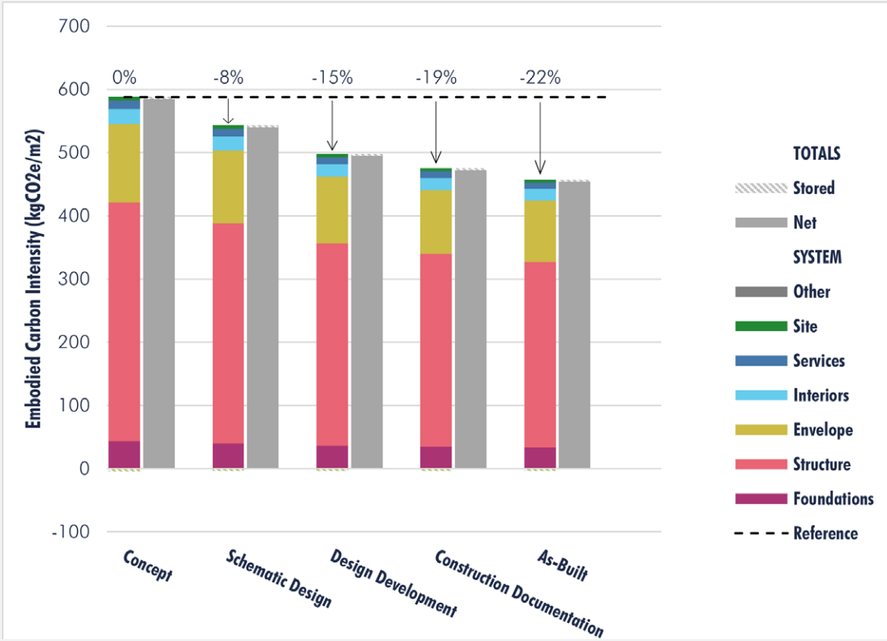
Participating in these larger conversations means we are aware of upcoming changes and have the expertise to help our clients navigate carbon policies to create the most beneficial projects.

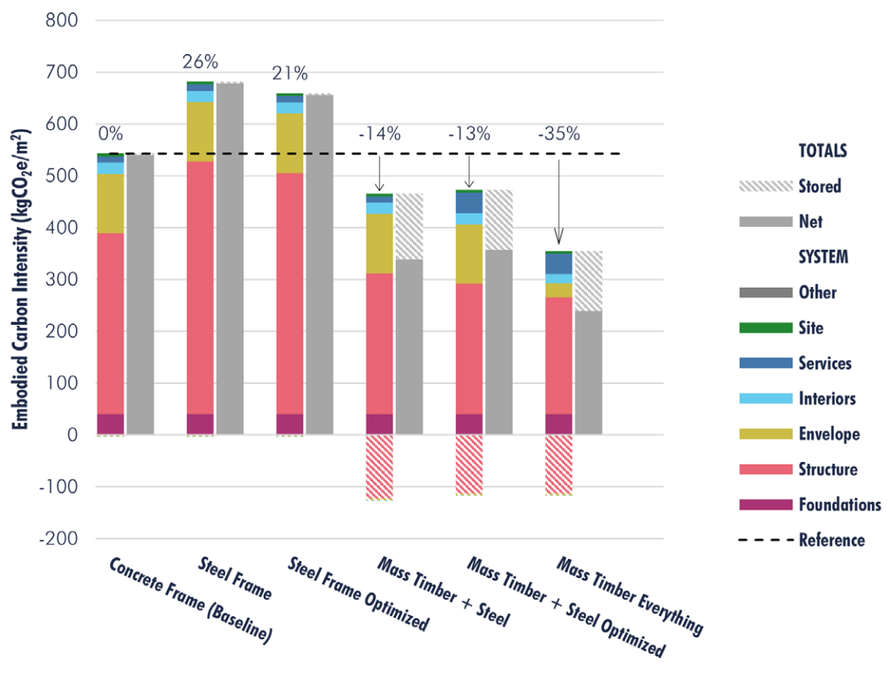
MKA COLLABORATES ON EMBODIED CARBON IN POLICY AND BUILDING CODE

MKA's IAN MCFARLANE, PE, SE, AND OTHER SPEAKERS FROM THE ASCE/SEI TOWARDS ZERO CARBON SYMPOSIUM IN BOULDER

MKA's JULIETTE PEYROUX, PE, SE, PRESENTS "RAISING THE BAR BY LOWERING THE CARBON" DURING THE AIRPORT CONSULTANTS COUNCIL, PLANNING DESIGN & CONSTRUCTION SYMPOSIUM IN ANAHEIM, CA

MKA AND BUILDING TRANSPARENCY CARBON RESULTS FRAMEWORK EXAMPLE

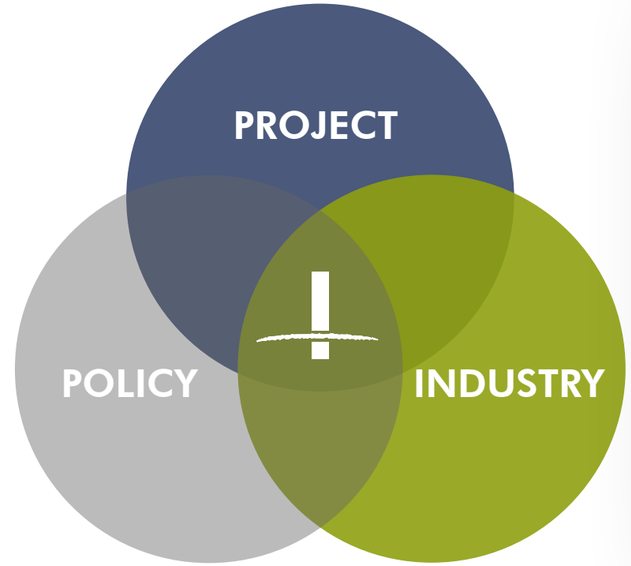


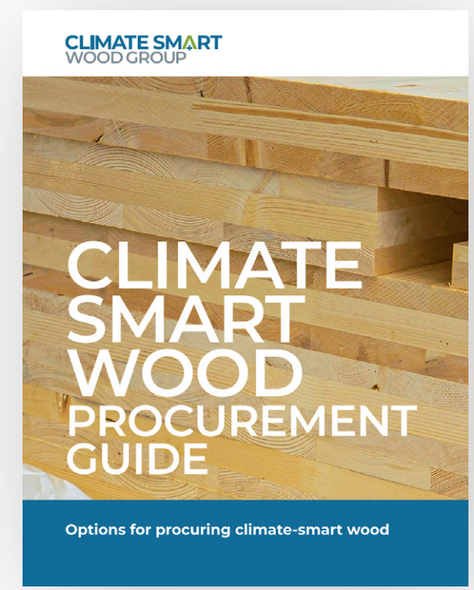


INDUSTRY IMPACT

Our dedication to reducing embodied carbon extends beyond project work as we seek to create impact and change at the industry level. An example is MKA's project with Building Transparency, where we created a guidance document on industry best practices for communicating project emissions and reduction strategies. MKA also contributed to the Climate Smart Wood Group's guide to wood procurement, setting the industry standards for sustainable timber construction. By standardizing carbon accounting, we can better understand industry metrics and analyze data for future carbon savings opportunities.

MKA will continue our mission to reduce embodied carbon in the built environment. Our approach involves creating reduction opportunities in our projects, providing guidance for evolving policies, and striving for meaningful industry-wide changes.





CREATING NEW INITIATIVES

Climate change driven by global warming is one of the greatest challenges facing humanity. Reducing greenhouse gas emissions is essential to making meaningful progress.

Structural engineers influence nearly 15% of global CO_2 emissions. Recognizing this responsibility, MKA partnered with industry leaders in 2025 to launch CURE—Code Updates for Reduction of Embodied Carbon.

Many of today's structural design codes have not been significantly updated in more than 50 years. As a result, outdated assumptions and built-in inefficiencies often drive unnecessary material use—and unnecessary carbon emissions.

CURE explores updates to structural design codes that can meaningfully reduce embodied carbon by addressing the inefficiencies of the current code. Current areas of focus include re-evaluating live loads, serviceability and deflection limits, concrete mix design, steel overstrength, and expanding the use of performance-based fire design.

Reviewing codes and standards through the lens of embodied carbon is both important and urgent. Achieving substantial reductions will require clear, targeted action.

CURE | Code Updates for Reduction of Embodied-Carbon

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