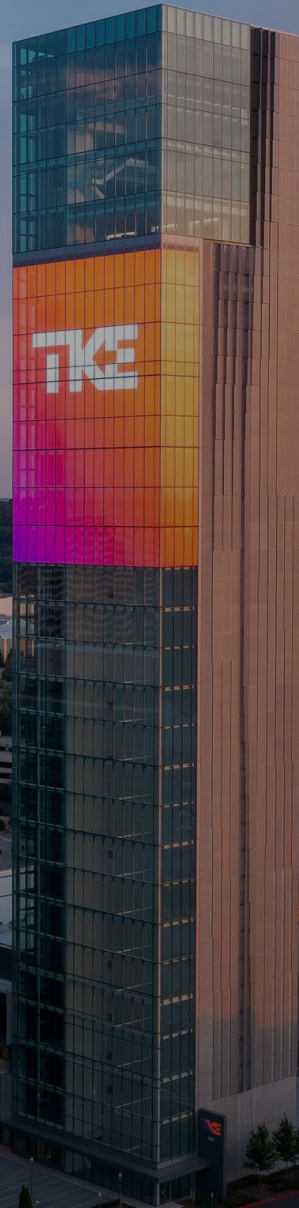


SE 2050 EMBODIED CARBON ACTION PLAN 2024

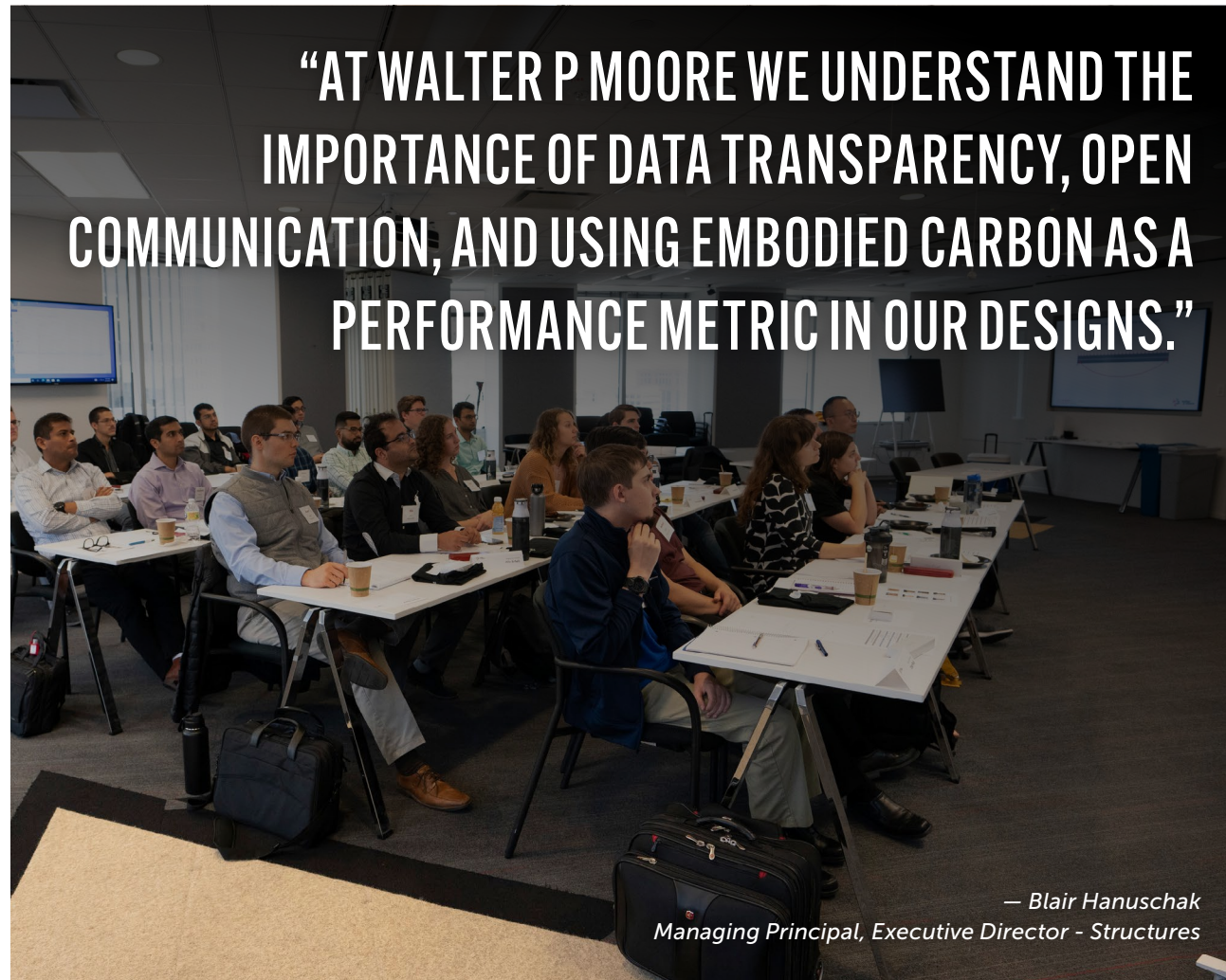


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01 EDUCATION

Over the past year, we worked to ensure that we met the goals established in our 2023 Embodied Carbon Action Plan and continued to educate our employees and our clients about embodied carbon.

- 1 Our embodied carbon reduction champions engage with employees at all levels. We continue to train project managers and BIM leads in each of our offices to track material quantities and embodied carbon throughout the project lifecycle and engage with Managing Directors in each office to ensure our tracking goals are met.
- 2 We are committed to having a member of each of office involved with their local Carbon Leadership Forum (CLF) hub, as well as attend seminars provided by SE 2050.
- 3 As part of Better Practices, Walter P Moore's firm-wide education presentation series, we presented embodied carbon tracking and reduction best practices to the entire firm. We are committed to giving an updated embodied carbon tracking presentation annually.
- 4 Our Sustainable Design Community of Practice (CoP) establishes best practices for embodied carbon tracking and shares knowledge across the firm through CoP representatives from each office.



“AT WALTER P MOORE WE UNDERSTAND THE IMPORTANCE OF DATA TRANSPARENCY, OPEN COMMUNICATION, AND USING EMBODIED CARBON AS A PERFORMANCE METRIC IN OUR DESIGNS.”

— Blair Hanuschak
Managing Principal, Executive Director - Structures

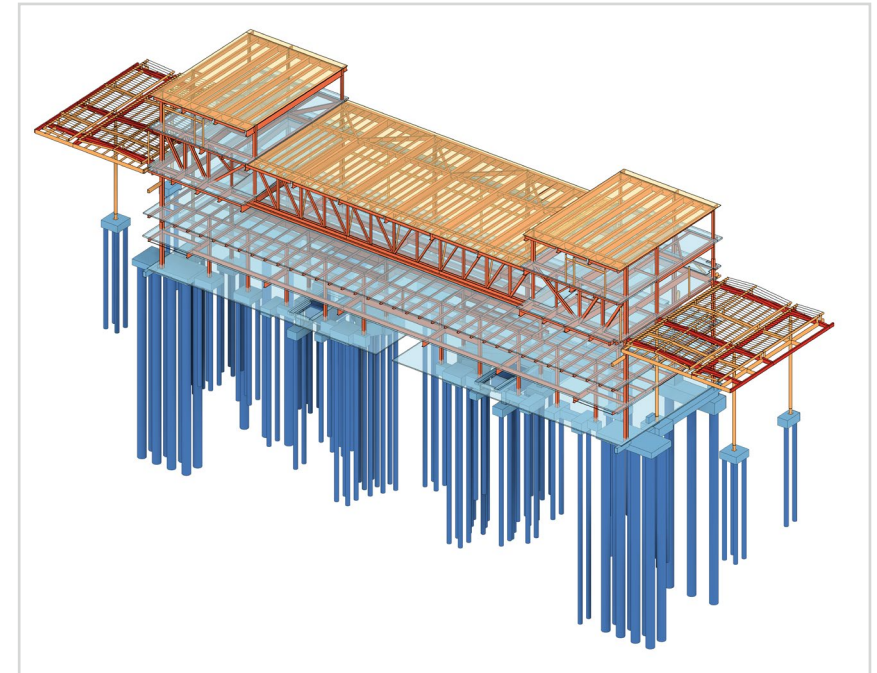
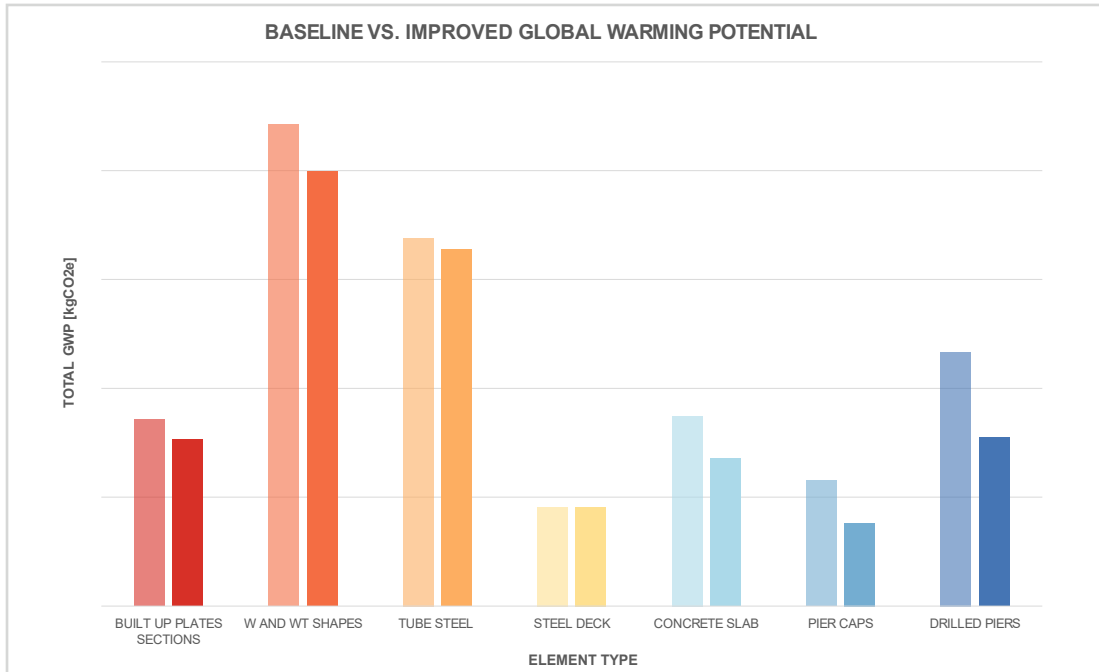
FASTSTART ONBOARDING PROGRAM

FastStart, our company-wide onboarding program, ensures that every engineer at Walter P Moore is exposed to sustainable design and embodied within their initial year. A dedicated FastStart session delves into WPM's contributions and ongoing efforts for sustainable design, acquainting engineers with our Sustainability Community of Practice (CoP). This integration results in a number of engineers joining the CoP, fostering awareness of our practices and active participation in advancing sustainable design. In this context, the program not only underscores our firm's unwavering commitment to sustainable design, but also highlights the genuine care that Walter P Moore invests in it.

“Fast Start provided me with the opportunity to connect with individuals like Dirk Kestner, who are at the forefront of sustainability within our company. Both Dirk and the presentations outlined how I could actively engage in our Communities of Practice. Through this, I have had the chance to collaborate with a large collective of Walter P Moore engineers who are passionate about achieving a more sustainable future.”

- Samuel Miller, Graduate Engineer

02 REPORTING



CONFIRMING REDUCTIONS WITH PRODUCT-SPECIFIC EPD'S

Our carbon tracking in previous years highlighted the importance of tracking embodied carbon during multiple project stages. We see embodied carbon tracking as a continuous process, and therefore, the carbon impact data used on the project should follow the same trend. Early assessments typically use industry national or regional average impacts and when combined with internal data visualization tools, can start to show a clearer picture of the project's embodied carbon levels and where to implement carbon reduction strategies. However, to limit the levels of uncertainty of material impacts in our final estimates, it is important to re-analyze the project's anticipated embodied carbon effect using product specific impact data gathered from project requested Type III EPDs before issuing construction drawings. Incorporating product specific material data as early as possible helps confirm anticipated carbon reductions, but also highlights where further material optimizations would be beneficial.

During 2024, we are continuing to refine and develop our carbon tracking process. Our data tracking includes projects with embodied carbon numbers calculated in a variety of ways. Some are the results of Whole Building Life Cycle Assessments (WBLCA's) based on Construction Document level quantities with life cycle phases and impact information from Athena Impact Estimator or Tally. Others are based on cradle-to-gate environmental impact data from industry average and supplier specific EPD's and early-stage quantity estimates. For the past 5 years, our project material specifications have required a Type III product specific EPD, a letter from the product manufacturer stating its participation with an industry-wide Type III EPD, or a letter from the product manufacturer stating that the product does not have a product specific or is part of the industry-wide EPD. For all data, we are tracking the project phase as well as the source of both the bill of materials and impact data.

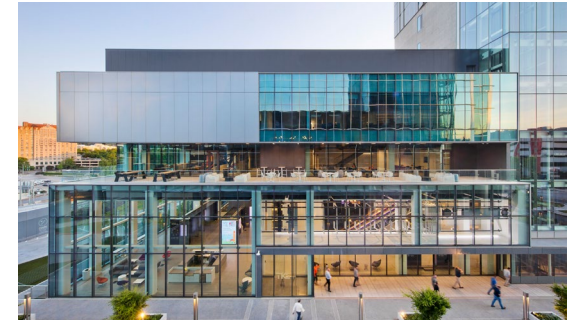
We submitted five projects to the SE2050 database this year, and plan to submit a minimum of five more projects during the coming year.

03 REDUCTION

This year we achieved our goal of tracking embodied carbon for projects representing over 50% of 2023 revenue. This dataset paired with our internally developed tools helped us track internal embodied carbon trends. Looking long term, we plan to enhance this goal by maintaining the volume of project data we are collecting while increasing the detail of it. By adding more data for projects we are already tracking, such as incorporating project changes and updating for as-builts, we intend to use better carbon materials and strive to get reductions.

- 1 As a short term goal, continue to track embodied carbon for projects representing 50% of our structural engineering group new design revenue for the year 2024.
- 2 Continue to work on and leverage our data visualization capabilities to educate our team and our clients about tracking and reducing embodied carbon.
- 3 Continue to grow our embodied carbon and LCA consulting practice for projects on which we are not the engineer of record to advise design and construction teams on best practices for reduction of embodied carbon
- 4 Aim to use new and innovative materials. For example, we used metakaolin as an alternative SCM for a hospital project in New Mexico in 2023.

Lessons Learned: When spending time on tracking embodied carbon, time is best devoted to the highest impact materials.



PROJECT HIGHLIGHT

TK ELEVATOR INNOVATION AND QUALIFICATION CENTER Atlanta, Georgia

In 2017, TKE set out to construct a new facility to foster innovation, research and development not only for a company but for the surrounding Atlanta community. The Innovation and Qualifications Center (IQC) is anchored by a state-of-the-art 420-foot-tall elevator test tower, the tallest of its kind in North America. The tower's concrete walls were designed to be fully built and stable before installing any steel framing members internally, to allow the continuous placement of concrete by means of slipform construction. The IQC aims to be climate neutral, so with a sustainability focus in mind, Walter P Moore performed a Whole Building Lifecycle Assessment as part of the structural and enclosure design. This resulted in more than a 12% reduction in the embodied carbon of the core and shell through design optimization and the use of granulated blast furnace slag and fly ash. The project was recently awarded LEED v4 Gold status.

04

ADVOCACY & KNOWLEDGE SHARING

Walter P Moore is committed to sharing knowledge and data to accelerate embodied carbon reduction throughout the design and construction industry. We remain in the leadership of SE 2050 as well as many industry organizations advocating for reductions in embodied carbon.

- 1 We are continually harvesting and sharing our Embodied Carbon stories to advance market transformation. We share our stories through conference presentations, webinars, articles, and project case studies. We published our first collection of embodied carbon stories in **Embodied Carbon: A Clearer View of Emissions.**
- 2 We have sponsored the Carbon Leadership Forum (CLF) since 2014 and actively participate in our local hubs.
- 3 We provide educational presentations to our clients about embodied carbon, life-cycle assessment, and the importance of collaboration in reducing embodied carbon in our projects.
- 4 Our team actively participates in industry-wide events and embodied carbon round tables.



Below is a partial list of embodied carbon presentations and publications by our experts in 2023:

ADVOCACY HIGHLIGHT

Greenbuild 2023 was held in Washington, DC and provided an ideal opportunity to showcase the Walter P Moore Washington DC LEED v4.1 ID+C Gold office space. During the week of Greenbuild we held multiple meetings or events that involved a mix of peers, clients, and owners. The most significant was the Carbon Leadership Forum / Building Transparency happy hour we hosted on the roof deck that had over 200 people in attendance. The DC office was also one of three stops on a formal Greenbuild tour of LEED Certified Commercial Interiors. This brought a group of approximately 25 people through the office space and allowed us to highlight the final design and its sustainability efforts.

Low Carbon Materials - Achieving Optimization During Design and Construction, Society of American Military Engineers
March 2023

Decarbonizing and Designing with Data, Digital Build Week Americas 2023
June 2023

Specifying Sustainable Concrete, CACP
June 2023

Tools for Environmental Optimization, Tech + LA
June 2023

Lightning Talks in Sustainability ASCE Metropolitan Section
July 2023

Decoding Carbon in Building Design, Carbon Leadership Forum Houston
August 2023

Bank of America Tower - Early Use of Whole Building Life Cycle Assessment and Lower Carbon Concrete, ACEC College of Fellows
October 2023

Putting Embodied Carbon into Practice Panel Discussion, SEA-MW
November 2023

Texas - A State That Can Grow Its Own Buildings, Texas Society of Architects 2023 Convention
December 2023

SE 2050 Showcase: 2023 Reflections, Carbon Leadership Forum
December 2023

Low Carbon Open Mic Carbon Leadership Forum Los Angeles
December 2023

05 OUR EXPERTS

Our plans for the next year involve continued involvement in the Carbon Leadership Forum and expanded advocacy on the importance of embodied carbon reduction to our clients and our peers in the industry.

Experts from Walter P Moore are leaders in these industry organizations and committees:

- Carbon Leadership Forum (CLF) – Board of Directors
- CLF Los Angeles HUB – Founding Co-Chair
- CLF Atlanta HUB – Founding Co-Chair
- CLF Dallas HUB – Founding Co-Chair
- CLF Houston HUB – Founding Co-Chair
- NCSEA Sustainable Design Committee – Founding Chair
- SEI Sustainability Committee – Founding Chair, Current member
- SE2050 Leadership Group
- SE2050 Advisory Council
- ACI318N – Sustainability
- AISC Sustainability Committee
- USGBC Materials and Resources Technical Advisory Group
- USGBC Georgia Market Leadership Advisory Board
- AIA COTE Atlanta Steering Committee
- Lifecycle Building Center Advisory Board
- Façade Tectonics Institute Embodied Carbon Working Group
- AIA COTE

EMBODIED CARBON REDUCTION CHAMPION



DIRK KESTNER, PE, SE, LEED AP BD+C, ENV SP

Dirk Kestner, a Principal and Director of Sustainable Design at Walter P Moore, is our Embodied Carbon Reduction Champion. He is based in Austin and was previously a structural designer and project manager. In his current role he works with all our offices across North America with a focus on structural design and leveraging whole building life cycle assessment to reduce embodied carbon. He is a member of SEI's Sustainability Committee, a member of the SE 2050 leadership group, a current board member of The Carbon Leadership Forum, and was previously Chair of the USGBC Materials and Resources Technical Advisory Group.

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STRUCTURAL ENGINEERING



KELLY ROBERTS, PE, SE, LEED AP BD+C

Kelly Roberts is a Principal and Senior Project Manager and co-chairs Walter P Moore's Sustainable Design Community of Practice for Structures. She is a founding board member of the Lifecycle Building Center and current Advisory Board member. Kelly is a Market Leadership Advisory Board member of USGBC Georgia, USGBC Materials & Resources Technical Advisory Group member, co-chair for Atlanta Carbon Leadership Forum HUB, and AIA Atlanta COTE Steering Committee member. She is a member of ACI 318N Sustainability, founding chair of the NCSEA Sustainability Committee and SEI Sustainability Committee SE 2050 Advisory Council member.

kroberts@walterpmoore.com | [404.898.2314](tel:404.898.2314) | [Atlanta, GA](#)

ENCLOSURE ENGINEERING



LAURA KARNATH, AIA, NCARB, LEED AP BD+C

Laura Karnath is a Senior Enclosure Technical Designer in Walter P Moore's Los Angeles office. She co-chairs Walter P Moore's Sustainable Design Community of Practice for Structures and leads the embodied carbon efforts for Enclosure. She is a founding co-leader of the Carbon Leadership Forum Los Angeles Hub, a member of the Façade Tectonics Institute embodied carbon working group, and a member of the AIA LA Committee on the Environment.

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WHO WE ARE

Walter P Moore is an international company of engineers, architects, innovators, and creative people who solve some of the world's most complex structural, technological, and infrastructure challenges. Providing structural, diagnostics, civil, traffic, parking, transportation, enclosure, technology consulting, and construction engineering services, we design solutions that are cost- and resource-efficient, forward-thinking, and help support and shape communities worldwide. Founded in 1931, our 800+ professionals work across 24 U.S. offices and seven international locations.

