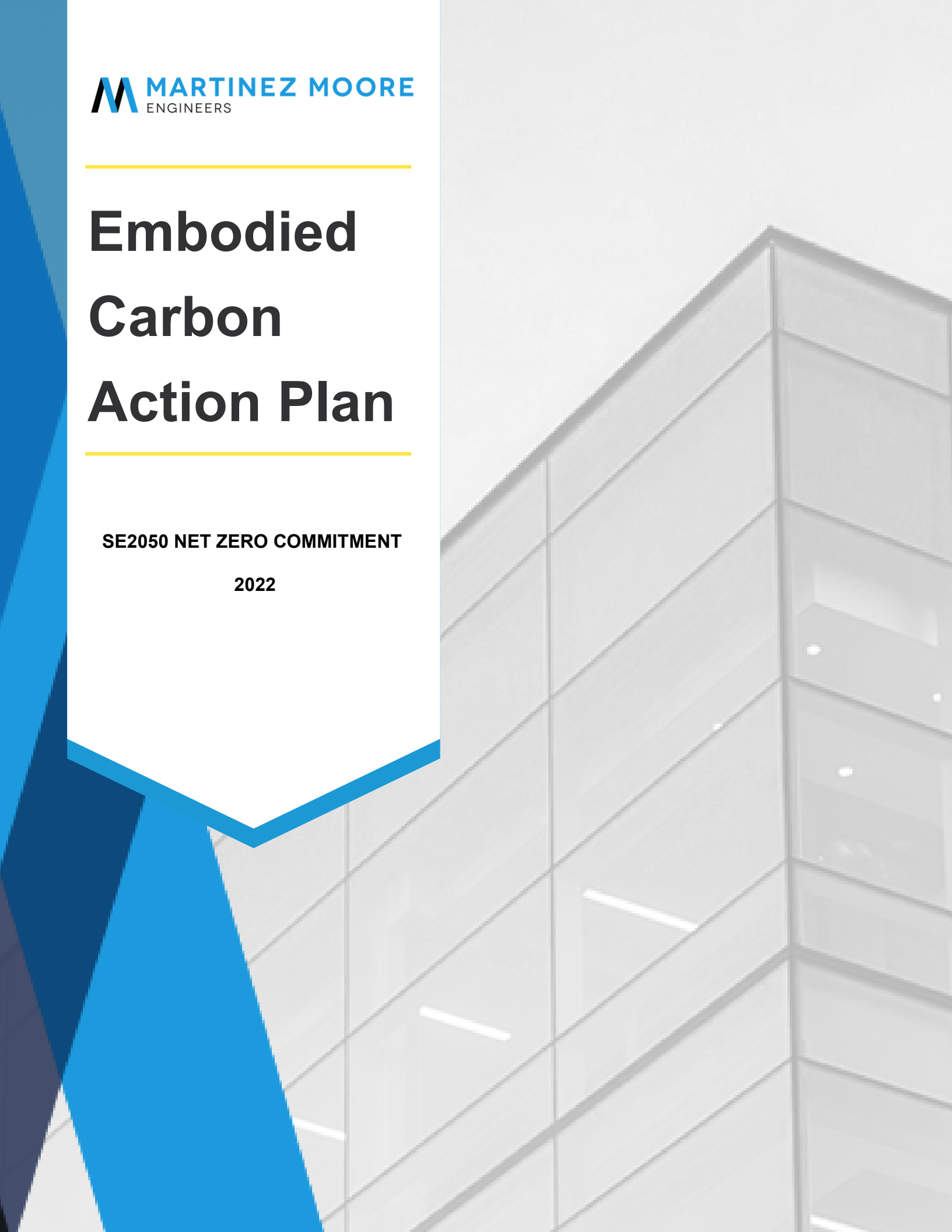
MARTINEZ MOORE
ENGINEERS

Embodied Carbon Action Plan

SE2050 NET ZERO COMMITMENT

2022



Who We Are

MARTINEZ MOORE ENGINEERS, LLC is a Texas-based multi-discipline engineering firm with offices in Austin, Houston, Dallas, and Fort Worth, and is certified by the State of Texas as a Historically Underutilized Business (HUB). We are an affiliate firm of Martinez Engineering, LLC and Walter P. Moore and Associates, Inc.

Through our partnership with Walter P Moore, we bring together an unparalleled team of experienced structural and civil engineers as well as parking and building enclosure consultants. We engineer cost- and resource-efficient, forward-thinking solutions, which help support and shape our communities.

President

Rubén Martínez, P.E., S.E. serves as President of Martinez Moore Engineers. Prior to forming Martinez Moore Engineers, Ruben was a Principal at Walter P Moore with over 17 years of experience with the firm in Houston and Austin. His experience in engineering, design, analysis, and management includes a wide range of diversified projects ranging from $1M to $500M in construction cost. Ruben understands each project has unique design requirements and works diligently to design efficient and cost-effective solutions that meet the operational, functional, and aesthetic needs of its users.

ECR Champion

Kate Tomlinson, P.E., LEED AP BD+C is a Principal and serves as Director of Austin Structural Engineering. Prior to joining Martinez Moore Engineers, Kate was a Senior Associate and Project Manager with over 11 years at Walter P Moore in Austin and Houston. She has experience in diversified aspects of project management, structural engineering analysis, design, and construction administration. Her extensive practice with providing unique solutions for work involving existing structures is a testament to her innovative technical skills. Kate’s focus is fully understanding her client’s vision and unique objectives and working with her team to ensure best practices and efficiencies are implemented throughout design and construction.

Education

Martinez Moore Engineers is committed to ensuring all engineers are educated on embodied carbon and incorporating strategies for reduction on our projects. We aim to educate our team members by presenting material during our quarterly meeting and posting these presentations in a place they are always accessible. We also have created a Microsoft Teams group devoted to sustainability initiatives to facilitate discussion among our engineers.

Our education plan includes the following SE2050 electives:

✓ Distribute firm-wide announcement of your firm's pledge to join the SE 2050 Commitment. After the first year, make an announcement sharing your ECAP from the previous year.

We will announce our pledge at our quarterly meeting in which all structural and civil engineering employees are in attendance.

✓ Nominate an Embodied Carbon Reduction Champion for your firm.

Kate Tomlinson, Principal and Director of Structural Engineering in Austin is our ECR Champion.

✓ Set a date within the first year to present an "Embodied Carbon 101" Webinar to your firm.

We will give this presentation at our quarterly meeting. Multiple presentations have also been given by our affiliate firm, Walter P Moore, throughout the year.

✓ Elective – Share the SE2050 library of resources with technical staff.

Our quarterly meeting presentation will include introduction of the SE2050 library. This document will be made available to all employees via a shared OneNote.

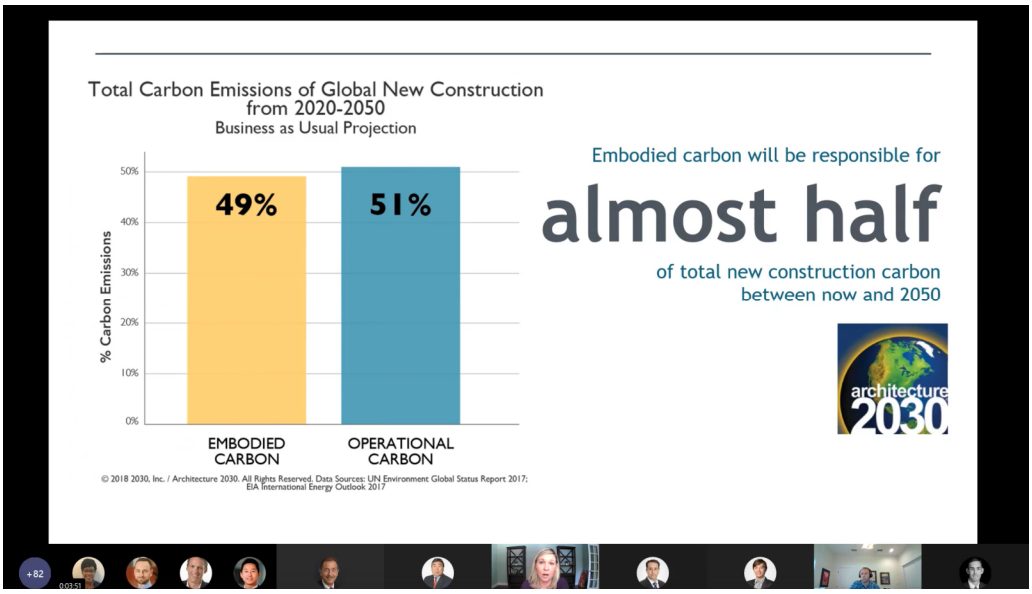


Figure 1. Walter P Moore firm wide virtual presentation

Reporting

For our projects in which we are contracted to perform a Whole Building Life-Cycle Assessment (WBLCA), we track the embodied carbon over the course of the design phase. We implement tools such as Athena Impact Estimator and Tally. We utilize quantities from our Revit models to assist in calculating carbon emissions. Comparing carbon emissions during the design phase allows us to make informed decisions to reduce embodied carbon.

We plan to use an in-house embodied carbon quantity tracker for several projects that are not undergoing a WBLCA. This allows for a simplified method to track embodied carbon on our projects.

FastStart, company-wide onboarding program for Martinez Moore Engineers and our affiliate firm, Walter P Moore, has a designated embodied carbon presentation for all incoming structural engineers.

MOORELEARNING PROGRAM | BOLT | SUMMER 2017 MARTINEZ MOORE ENGINEERS

Material	Structural Component	Quantity - Sub-structure	Quantity - Super-structure	Unit	Sub-structure Impact (lb CO2e)	Sub-structure Impact (kg CO2e)	% of Total	Super-structure Impact (lb CO2e)	Super-structure Impact (kg CO2e)	% of Super-structure Total	Total Impact (lb CO2e)	Total Impact (kg CO2e)	% of Total
Concrete	2500 PSI			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	3000 PSI			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	4000 PSI			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	5000 PSI			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	6000 PSI			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	8000 PSI	1	1	Cubic Yards	768	348	14.09%	768	348	14.09%	1537	697	28.2%
	3000 PSI LW			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	4000 PSI LW			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	5000 PSI LW			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 1			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 2			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 3			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 4			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 5			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 6			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 7			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	User-Defined 8			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
Steel Reinforcement	Rebar	1	1	Tons	1958	888	35.91%	1958	888	35.91%	3916	1776	71.8%
	Welded Wire Reinforcement			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Post Tensioning			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
Masonry	Normal Weight Masonry Block			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Light Weight Masonry Block			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Masonry Grout			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Mortar			Cubic Yards	0	0	0.00%	0	0	0.00%	0	0	0.0%
Steel	Rolled Steel Shapes			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Plate Steel Fabrications			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Tube Steel (HSS)			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Open Web Steel Joists			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Steel Deck			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Cold Formed Metal Framing			Tons	0	0	0.00%	0	0	0.00%	0	0	0.0%
Timber	Softwood Lumber			Cubic Feet	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Softwood Plywood			Cubic Feet	0	0	0.00%	0	0	0.00%	0	0	0.0%
	GluLam			Cubic Feet	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Cross Laminated Timber			Cubic Feet	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Laminated Veneer Lumber			Cubic Feet	0	0	0.00%	0	0	0.00%	0	0	0.0%
	Wood I Joists			LBS	0	0	0.00%	0	0	0.00%	0	0	0.0%

Figure 2. Embodied Carbon Quantity Tracker

Our reporting plan includes the following SE2050 elective:

✓ Submit an annual minimum of (2) projects per U.S structural office but need not exceed (5) total projects for the firm to the SE2050 Database.

We are committed to submitting 5 projects to the SE2050 Database each year.

Reduction

Martinez Moore Engineers aims to continue advocating and reducing embodied carbon emissions through the following SE2050 electives:

Figure 3. Employees Retirement System of Texas (ERS) Office Building, Austin, Texas

✓ Complete an embodied carbon comparison study during the project concept phase.

For our work on the UT Gary L. Thomas Energy Engineering Building, we performed a Whole Building Life-Cycle Assessment to not only support the project's LEED goals, but to also study quantified comparisons of embodied carbon and adjust design strategies accordingly such as using imported exposed aggregate in the floor finish.

✓ Continuing collaboration with concrete suppliers to reduce embodied carbon in a mix design.

While working on the Employees Retirement System of Texas (ERS) building, we collaborated with the general contractor and the concrete subcontractor to optimize cement content in our concrete mixes, effectively delivering strength where and when needed, without creating excess impacts. We also performed a Whole Building Life-Cycle Assessment on the structure as well as the enclosure. Doing so achieved three LEED points for the reductions in embodied carbon and other impacts.

Figure 4. UT Gary L. Thomas Energy Engineering Building, Austin, Texas

Advocacy

Our engineers have already begun to facilitate communication and implementation of embodied carbon reduction strategies. Our advocacy plan includes the following SE2050 electives:

✓ Describe the value of SE2050 to clients. How can your design teams collaborate to reduce embodied carbon? Please attach any associated marketing materials.

Martinez Moore Engineers knows how important collaboration is in the early design process. For UT Gary L. Thomas Energy Engineering Building, early in the design process we studied, documented, and vetted 4 different options for the owner, construction manager, and design team to ultimately decide upon the final system.

✓ Declare your firm as a member of the SE2050 commitment on boilerplate proposal language.

Our declaration has been made on our website and we have added it to our proposal language as well.