



Embodied Carbon Action Plan

2022-2023

MEYER | BORGMAN | JOHNSON

STRUCTURAL DESIGN + ENGINEERING

SEE STRUCTURE.

Our Commitment

Integrate sustainability practices into Meyer Borgman Johnson’s design culture.

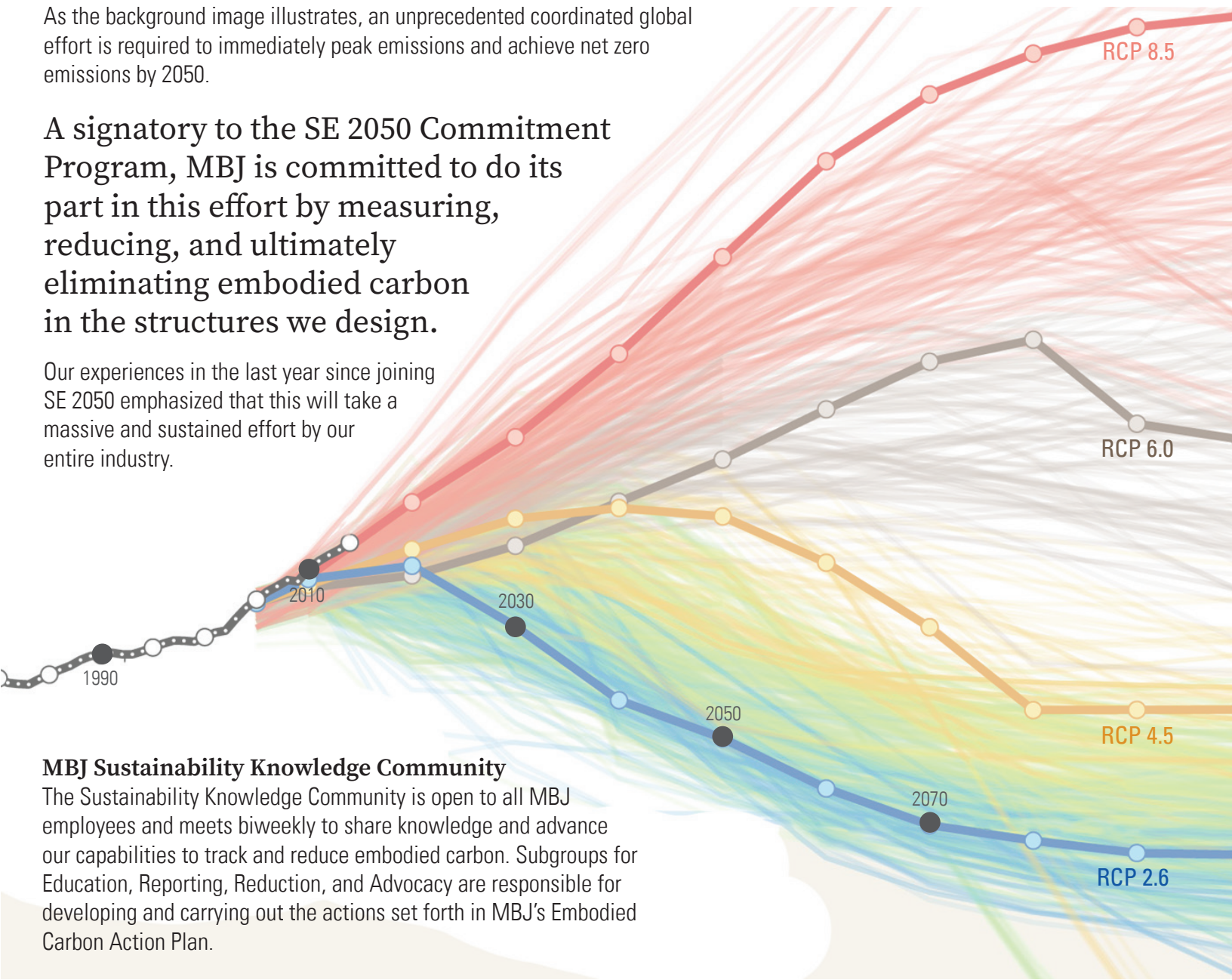
We believe that creative design practices, in conjunction with innovations in material manufacture and sourcing, make zero carbon structural systems a feasible achievement by the year 2050. We are committed to making changes within our walls and influencing others outside of our walls to make this future a reality.



As the background image illustrates, an unprecedented coordinated global effort is required to immediately peak emissions and achieve net zero emissions by 2050.

A signatory to the SE 2050 Commitment Program, MBJ is committed to do its part in this effort by measuring, reducing, and ultimately eliminating embodied carbon in the structures we design.

Our experiences in the last year since joining SE 2050 emphasized that this will take a massive and sustained effort by our entire industry.



MBJ Sustainability Knowledge Community

The Sustainability Knowledge Community is open to all MBJ employees and meets biweekly to share knowledge and advance our capabilities to track and reduce embodied carbon. Subgroups for Education, Reporting, Reduction, and Advocacy are responsible for developing and carrying out the actions set forth in MBJ’s Embodied Carbon Action Plan.

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Data: CDIAC/GCP/IPCC/Fuss et al 2014

Education

Meyer Borgman Johnson is committed to providing firm-wide education on embodied carbon reduction, including our involvement with SE 2050, through several methods of recurrent communication.



Northern Arizona University, Flagstaff, AZ - LEED Platinum | Net Zero Energy

MBJ’s Sustainability Knowledge Community will be responsible for disseminating sustainability education materials and ensuring that MBJ is informed of the latest sustainability news, methods, and trends from leaders across all relevant industries.

During the first year of participation in SE2050, we learned the circulation of information is of utmost importance to firm-wide advancements toward net zero embodied carbon. While making considerable progress in reduction strategies, the effectiveness of these strategies is dependent on their intentional incorporation into our everyday practice.

2022 ECAP GOALS

Provide Internal Education

Firm-wide sustainability education is a keystone of achieving our overall goal to integrate sustainability into MBJ’s design culture. Education will be provided in a multi-faceted approach aimed at engaging the maximum number of employees:

- Present 1 sustainability tech talk
- Create a centralized location for sustainability questions
- Host an external expert speaker quarterly
- Distribute the new ECAP
- Curate 1 intranet post per month

Provide External Education

Members of the Sustainability Knowledge Community will attend external educational programs put on by industry organizations on a quarterly basis.

Attend External Education

Members of the Sustainability Knowledge Community will attend external educational programs put on by CLF, ASCE-SEI, or other industry organizations on a quarterly basis.

A LOOK BACK AT EDUCATION IN 2021-2022



9
EXTERNAL
PRESENTATIONS
GIVEN



12
EXTERNAL
PRESENTATIONS
ATTENDED



4
SUSTAINABILITY
SEMINAR SERIES
SPEAKERS



2
COMPANY-
WIDE INTERNAL
PRESENTATIONS



1
SUSTAINABILITY
VENDOR
PRESENTATION



24
SUSTAINABILITY
INTRANET POSTS

Reporting

Meyer Borgman Johnson is committed to leveraging effective data reporting tools and our decades of experience in structural design to track and report embodied carbon data for the benefit of the profession and our own design process.

To broaden our tracking experience and seed the database with useful inputs, we will measure and report embodied carbon for projects reflecting a range of material types, end uses, and scale. By developing standards and rolling out training, we will lower the effort required to produce quality embodied carbon data and make this data more accessible to all staff so that embodied carbon considerations may influence decisions throughout the life of a project.

We developed a process for reporting and quantifying the carbon impact of project designs and expanded our user group familiar with and able to access our process. An important lesson was that using our carbon-reporting tools is much simpler and more accessible to new users than it initially appeared, which will allow us to extend our process to become a normal part of our BIM and project management methodology.

2022 ECAP GOALS

LCA Methodology

We will primarily use Tally to perform life cycle assessments (LCA) covering the whole building life cycle. Projects reported to the database will include a single LCA performed either during design or after project completion.

Internal Training on LCA

Tally training will be rolled out to all BIM specialists and a majority of engineers. We will continue to update and improve MBJ Tally standards documentation and a database of project reports in order to inform and educate new users in our reporting process. We will create a uniform, simple, step-by-step training process for training new Tally users.

Reporting Targets

MBJ will report 20 projects to the SE 2050 database, with the following project parameters represented:

- 3 projects with custom mix designs used in the LCA
- 12 projects with design started or completed in 2022
- At least 4 different major structural material systems
- 7 different building uses
- At least 1 project from each MBJ office



A LOOK
BACK AT
REPORTING
IN 2021-2022

19
PROJECTS
SUBMITTED
TO SE2050
DATABASE

5
US STATES
WITH
REPORTED
PROJECTS

3
PRIMARY
STRUCTURAL
MATERIALS

7
BUILDING
USE TYPES

Reduction

Meyer Borgman Johnson’s Sustainability Knowledge Community will work to update standards, modify specifications, and develop design tools that capture carbon reduction in structural components.

Meyer Borgman Johnson’s commitment to carbon neutral buildings in 2050 requires us to act now. We will embrace a mantra that design and material strategies for reducing embodied carbon can be incorporated into all our projects today regardless of building type, sustainability requirements, or ownership structure. Eyeing the future, MBJ will also actively participate in research geared towards carbon reduction to help identify and create the technologies needed to reach net zero.

The importance of communication towards reducing the embodied carbon of our structures became strikingly clear over the last year. Moving forward, a concerted effort will be made to communicate knowledge, tools, and best practices for carbon reduction throughout MBJ.

The importance of scalable actions that can be utilized on many projects will also be a key focus of the coming year.

2022 ECAP GOALS

Develop Strategies for Reducing Carbon

Study the embodied carbon implications of typical design decisions and detailing for at least two structural components such as spread footings and masonry walls. Create approachable, firm-wide tools and guidance to reduce embodied carbon on any projects.

Maximize Impact Through Early Engagement

The early phases of projects provide the opportunity to create the most impact on embodied carbon through structural system selection, building massing and client engagement on sustainability. MBJ will incorporate sustainability considerations into concept and schematic design narratives to encourage project decision making towards reducing embodied carbon.

Incorporate Carbon Reduction in Specifications

Incorporate carbon reduction strategies into one major structural specification section such as masonry, structural steel, or cold-formed metal framing.

Be a Research Catalyst

Reaching net zero embodied carbon necessitates new materials and methodologies in structural design. MBJ will sponsor and collaborate with both the Consortium for Research Practices and Civil Engineering Capstone Program at the University of Minnesota in addition to funding internal research projects related to strategies for reducing embodied carbon in the built environment.

A LOOK
BACK AT
REDUCTION
IN 2021-2022

1
SPECIFICATION
SECTION UPDATE

6
EARLY LCA
COMPARISONS

2
COMPONENT
DESIGN
REDUCTION

10
MINI RESEARCH
STUDIES

Advocacy

Meyer Borgman Johnson recognizes that the path forward for all structural engineers to eliminate embodied carbon in their projects by 2050 requires impactful collaboration.

We plan to closely follow policy actions in our communities at numerous scales and work towards collectively influencing that policy for a carbon neutral future. As our organization’s culture strives towards ensuring carbon neutralization, we hope to inspire our clients to take our lessons learned forward to their other endeavors. Such that our work will have lasting impacts beyond the bounds of a project.

During our previous ECAP year, our advocacy efforts were spearheaded by only a few people within our company making presentations or talking to clients. While a good first step, this year we intend to focus more on advocating to clients and owners via all personnel at MBJ through our everyday project work.

2022 ECAP GOALS

Encouraging Embodied Carbon Reduction in Public Policy
We will actively monitor the status of policy initiatives local to MBJ offices such as the Phoenix Climate Action Plan and Minnesota HF 278. Through participation in local Carbon Leadership Forum hubs, we are seeking to influence these policies and upcoming revisions. We plan to connect local municipalities and policy leaders to the existing carbon reduction tools/strategies such as the CLF Owner and Policy toolkits.

Owner and Client Advocacy
We will foster opportunities at the onset of projects to offer Life Cycle Assessments as part of project scope by educating our project managers and team members about these services. We will continue to communicate with our clients and project owners about our sustainability goals and our capabilities to help them achieve theirs.

Incentivizing Facility or Product Specific EPDs
On at least 2 projects we will discuss with the client/owner about requiring a facility or product specific EPD for at least 1 structural material for which only industry average EPDs are commonly available to incentivize the market toward improved carbon data.



We are committed to sharing our knowledge with our industry partners to raise awareness of the need for immediate action across disciplines.

A LOOK
BACK AT
ADVOCACY
IN 2021-2022

9
REGIONAL PUBLIC
SUSTAINABILITY
POLICIES
TRACKED

3
PROJECTS WITH
LCA GOALS AT
ONSET

6
DISCUSSIONS
WITH MATERIALS
PRODUCERS ABOUT
CREATING EPDS

1
PROJECT
WITH EPD
REQUIREMENTS

MEYER BORGMAN JOHNSON

is a structural design practice creating innovative building structures within the built environment. We listen, learn, and commit ourselves to discovering what is unique about each project and necessary for its success, then collaborate with project stakeholders to deliver optimal design solutions. Our breadth of experience and deep specialty knowledge forms the basis to apply timely insight at all stages of the design and construction process from inception to completion.

SE 2050 Commitment Program Embodied Carbon Champions:



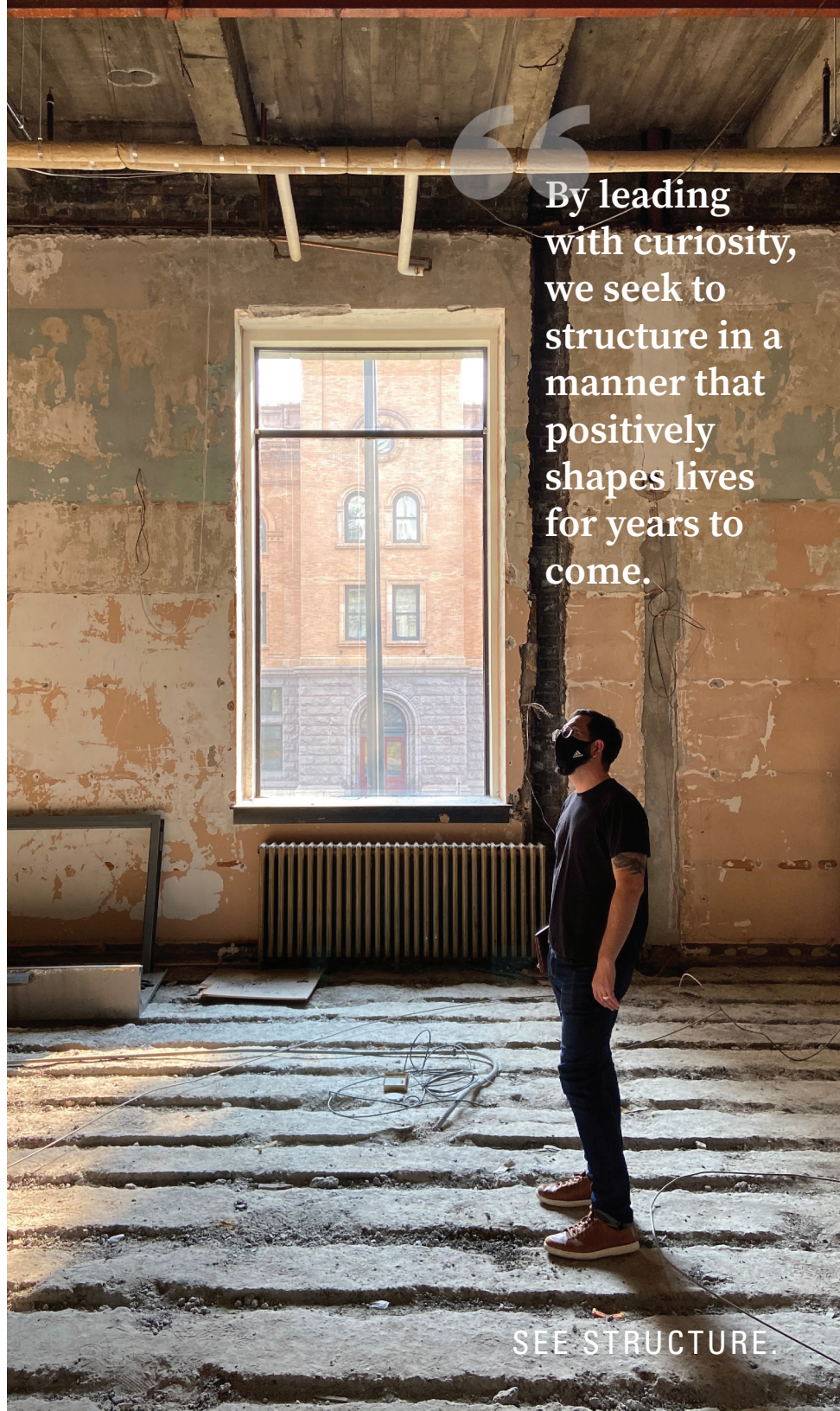
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STRUCTURAL DESIGN + ENGINEERING



“By leading with curiosity, we seek to structure in a manner that positively shapes lives for years to come.”

SEE STRUCTURE.