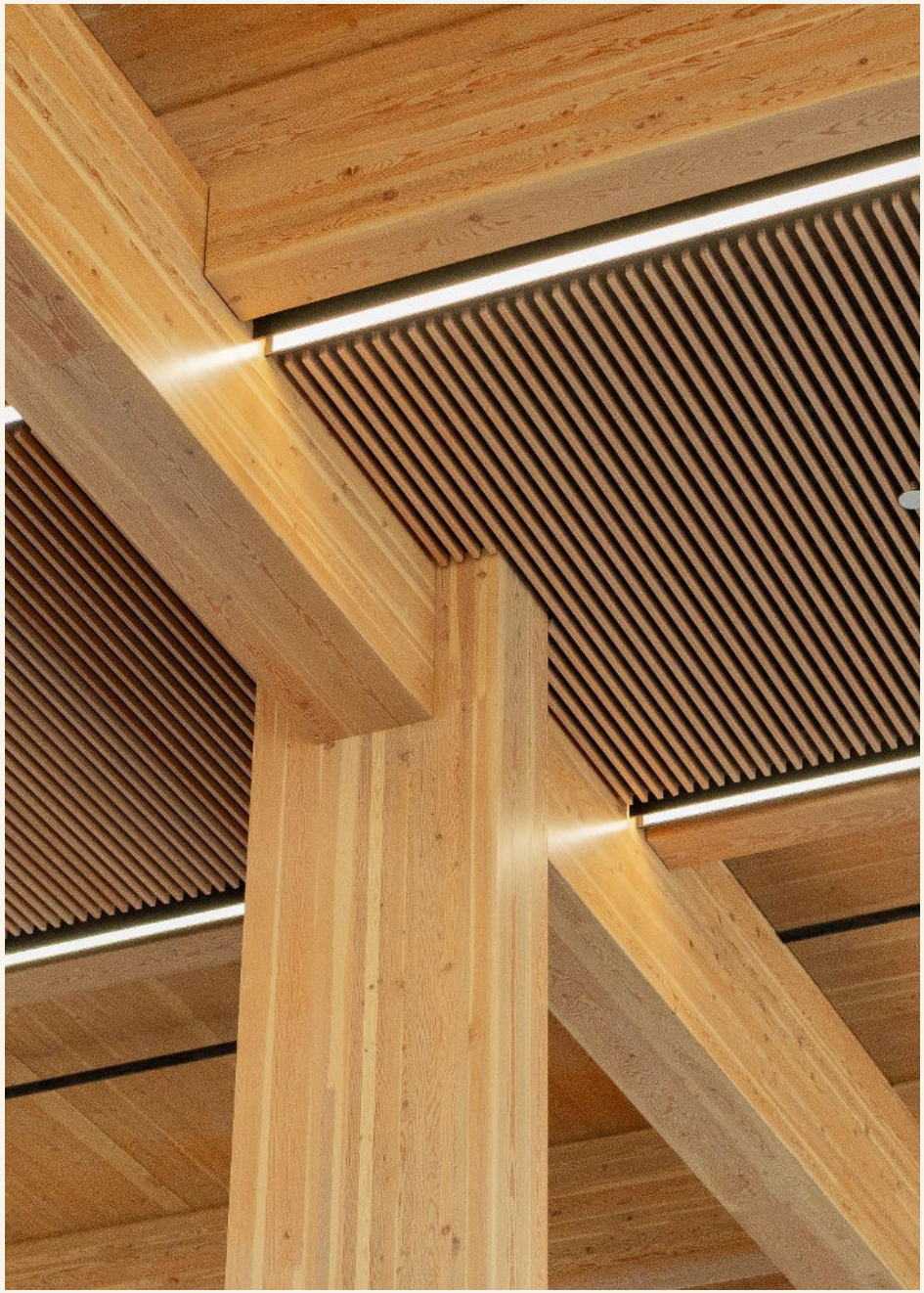
EQUILIBRIUM
Equilibrium Consulting Inc.
Structural Engineers
1535 West 3rd Avenue
Vancouver, BC V6J 1J8
+1 604 730 1422
eqcanada.com



# Sustainability Strategy

2025-2026

## INTRODUCTION

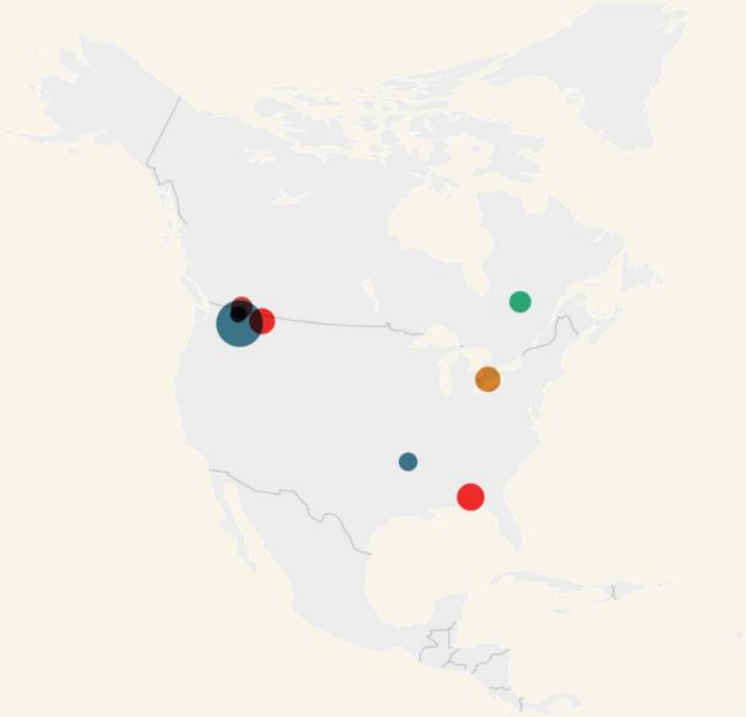
EQUILIBRIM is an award-winning, full-service structural consulting firm globally recognized for its innovative structural designs, architecturally integrated approach and state-of-the-art timber engineering expertise. The firm was founded in Vancouver in 1998 with a focus on progressive and innovative building projects, sustainability-oriented construction and particular expertise in projects utilizing timber construction. Since it's founding, EQUILIBRIUM has successfully completed over 2,000 projects including a significant number of award-winning designs, establishing ourselves as one of the premier structural engineering firms in Canada with growing presences in Atlanta, GA and Paris, France.

The firm has been committed to sustainable design since its inception and is currently a signatory member of Canadian Engineers Declare and the SE 2050 commitment. We have contributed to the design of numerous LEED projects and were first to introduce "Passivhaus" design services in Canada in 2008 (Lost Lake Passive House in Whistler, BC).

EQUILIBRIUM has recently furthered it's commitment to climate action, expanding our services to include professional LCA and embodied carbon assessment, ensuring design team decisions are supported by informed and accurate data, aligned with the intent and capabilities of the structural design.

SE2050 COMMITTING TO NET ZERO

CLF Carbon Leadership Forum



Example supply locations for Canadian Cement (top) and N.A CLT (bottom)

## REDUCTION STRATEGIES

From proposal to construction, EQUILIBRIUM employs a hierarchical philosophy of "build nothing, build less, build smart", encouraging clients and stakeholders to make fundamental changes that significantly impact carbon emissions through every step of the concept, design and implementation processes. Throughout our history we have made a continued commitment to change the attitudes of clients and industry, helping to increase the popularity of mass timber and bring structural sustainability to the forefront of conversations in construction.

We undergo a structural sustainability review on all live projects - a dedicated session allowing us to identify and quantify opportunities for embodied carbon reduction regardless of project size or scope. By communicating the outcome of the session with our team and clients we seek to promote sustainable thinking and knowledge sharing, thus opening the door to and increasing the likelihood of more sustainable innovations in current and future projects.

Our additional LCA advisory service provides an in-depth carbon analysis for a project across all disciplines, delivering practical recommendations used to support our clients' frequent ESG goals and to satisfy the increasing requirements of local authorities for carbon reporting at rezoning and permitting stages.

Combining EQUILIBRIUM's history of sustainable design with an in-depth knowledge of supply chains has proven successful in enabling the adoption of sustainable materials and design choices at cost competitive levels. Our designs frequently utilize sustainable materials, including mass timber, low carbon concrete and recycled steel, combined with efficient and technically pioneering structural forms to save cost and reduce carbon to benefit our client's and their projects.

## KNOWLEDGE SHARING

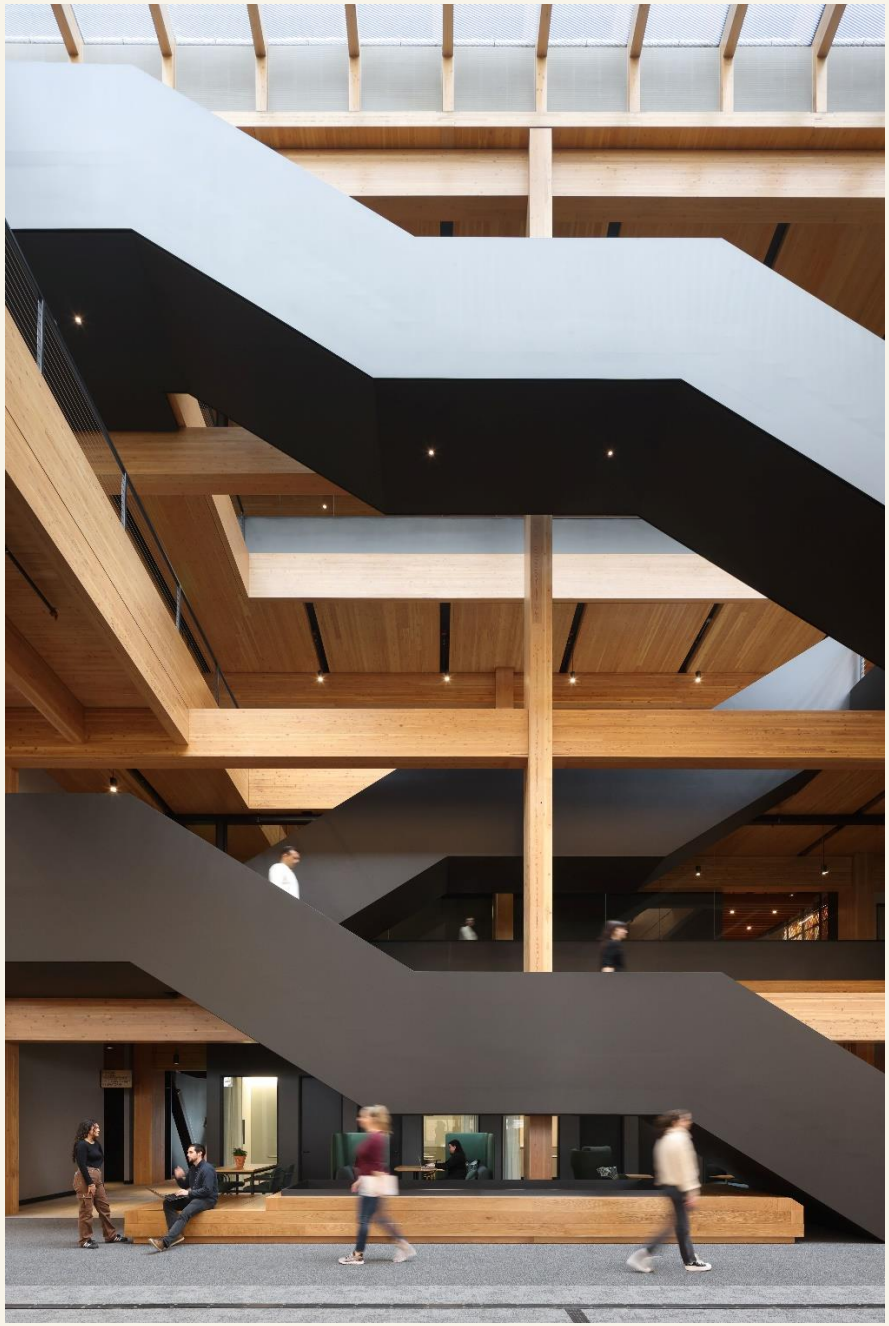
At EQUILIBRIUM, we believe an open culture of knowledge sharing is key to successfully tackling the climate crisis and decarbonizing the built environment.

Carbon emissions are a global phenomenon which require collective solutions – reducing total global carbon emissions should always be prioritised over a desire to demonstrate low emissions on one single project if achieved at the expense of higher emissions for another project or stakeholder.

On some or our most high-profile projects, we have successfully used our work as a platform to educate and inform multinational clients with large scale reach, helping to influence their future development decisions beyond the scale of an individual project.

On a more relatable scale, such as in our work with schools and first nations communities, we have guided clients and teams to embrace elegant and efficient structural solutions which utilize sustainable thinking. We frequently highlight the recommendations from our LCAs and sustainability reviews to ensure the advice is understood and increase the likelihood that holistic, sustainable options are embraced.

Beyond our day-to-day projects, our team is involved in numerous external and speaking engagements and committees. We hold advisory positions with the Carbon Leadership Forum in British Columbia, the SE2050 steering committee, the IStructE sustainability panel, present at The International Mass Timber Conference, Buildex, multiple University outreach programmes and through informal presentations to numerous architecture and engineering partners.



## EDUCATION

The EQUILIBRIUM team is committed to continual education in the areas of embodied carbon, sustainability in construction and limiting the effects of the climate crisis. We take a broad approach to education, influenced both by internal and external parties, to gather a broad range of perspectives and stay abreast of the most up to date guidance and thinking. Some examples of our education initiatives include:

- Furthering our capabilities to provide full building Life Cycle Assessment (LCA) through completion of formal training provided by the Athena Sustainable Materials Institute.
- Actively engaging on sustainability committees with the Carbon Leadership Forum, IStructE and SE2050, as well as speaking and attending industry events including the International Mass Timber Conference and Buildex.
- Providing EQ University training sessions in house to upskill team members and improve carbon literacy across our whole business to benefit all projects.
- Using sustainability reviews to feedback high-level guidance for reducing embodied carbon and educate the wider design team on key emitters and reduction strategies.
- Engaging with supply chains to understand the practicalities, opportunities and challenges on each project. Doing so has helped the business identify opportunities for material re-use and ensure practical and effective material specification to achieve measurable savings in embodied carbon.
- Learning through engagement with unique clients and teams, whilst striving to understand different perspectives and approaches to buildings. This approach is exemplified through our work with numerous first nations communities, helping to preserve heritage and construction techniques whilst limiting environmental impact by embracing traditional forms and natural materials in design.

## REPORTING

Life Cycle Assessment and embodied carbon calculation for buildings requires knowledge of materials, supply chains, building typologies, assessment methods and reporting standards. The primary structure can account for over 50% of upfront embodied carbon in buildings and, with electricity grids decarbonizing, is increasingly seen as the major carbon emitter associated with the built environment.

> At EQUILIBRIUM the focus is to not simply use embodied carbon assessment for accounting, it's to use it to achieve real world, measurable reductions.

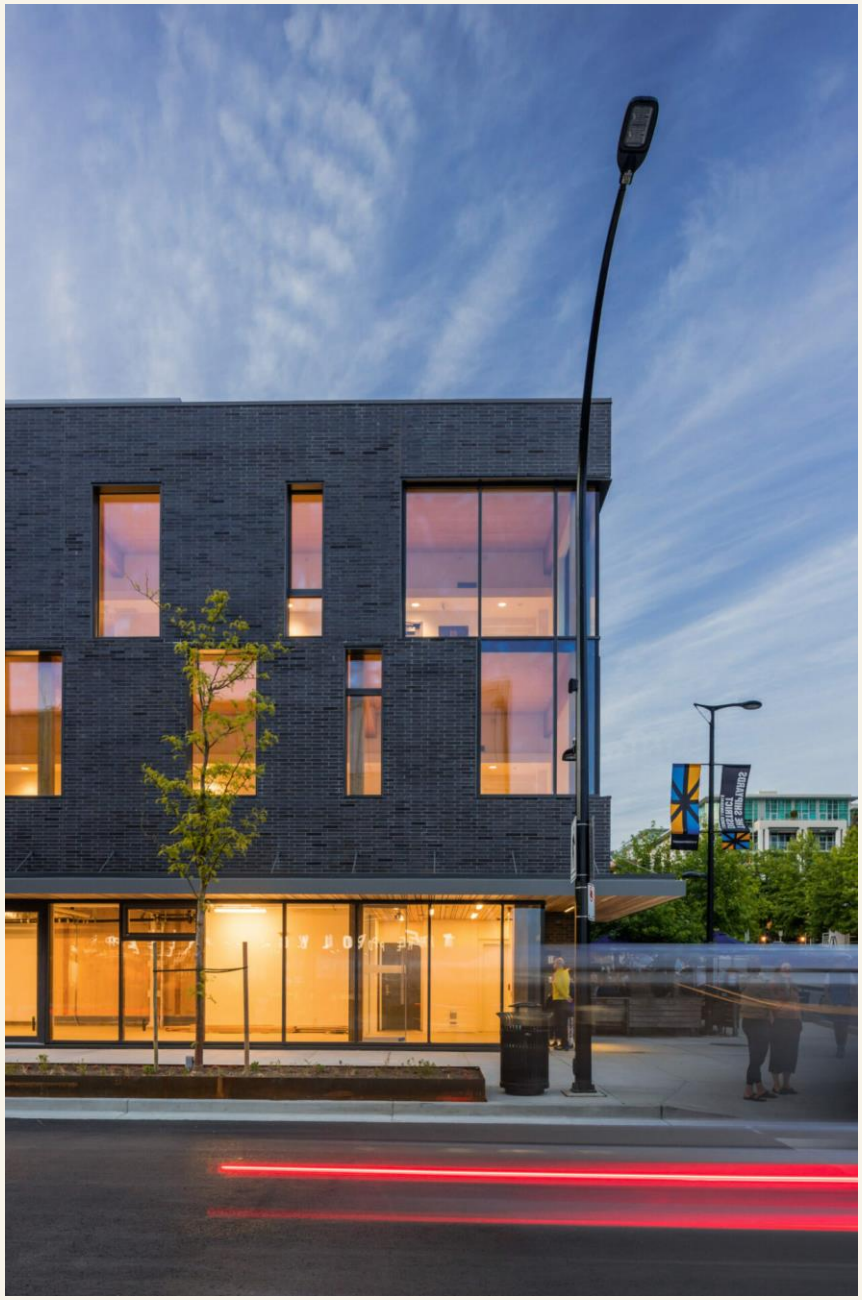
EQUILIBRIUM is uniquely positioned to help our collaborators understand at an early stage of design the likely forms, material choices and environmental impacts of options suitable for final design and construction. We leverage 25 years of experience at the forefront of sustainable building design and our close links with industry to predict and accurately calculate the embodied carbon impacts of a building, ultimately allowing us to advise clients on the most efficient strategies for carbon reduction.

The EQUILIBRIUM team utilize commercially available calculation software, including Tally and Athena Impact Estimator, to analyze and report on embodied carbon and comply with multiple local authority LCA reporting standards

Our team is able to tailor an analysis to the requirements of our projects and our client reporting needs, in line with the product rules in EN 15978 and ISO 21930. We commonly consider upfront production stages A1-A5 and full life-cycle impacts at A-C or A-D as required on a project by project basis.

We have an in-depth knowledge of EPD data, resulting from our close ties with industry both in North American and Europe. EQUILIBRIUM has authored guidance on mass timber, concrete and steel EPD data and used this to inform design decisions on our projects.

Following our in-depth studies into the impact of transport routes and emissions in North America – a key and often overlooked source of embodied carbon on projects, we can accurately advise clients on the impact of procurement choices and use embodied carbon as a factor when selecting a source for construction materials including mass timber.



## SE2050 ELECTIVE REPORTING

The tables below detail our progress towards the SE2050 mandatory and optional electives, as part of our commitment to address the climate crisis.

## EDUCATION

*2 required [R], 4 recommended.*

| ELECTIVE | STATUS | DESCRIPTION |
|---|---|---|
| **Provide a narrative of how the Embodied Carbon Reduction Champion will engage embodied carbon reduction at each office.** [R] | Achieved | Tom Place continue to be embodied Carbon Reduction Champion at EQUILIBRIUM .<br>The role of our Embodied carbon reduction champion is to provide a drive, focus and leadership towards embodied carbon reduction across all projects within EQUILIBRIUM. Our multi-strategy approach includes the completion of sustainability reviews on all projects at key design milestones, the continued work of our dedicated sustainability committee to discuss and share our sustainable initiatives, presenting our learning outcomes via EQ University training sessions and speaking externally to clients and fellow industry professionals to increase the impact our knowledge has beyond just the projects we are engaged on. |
| **Present at least (1) webinar focused on embodied carbon and make a recording available to employees...** [R] | Achieved | The Equilibrium team is constantly seeking to learn the lessons from our own work and to constructively collaborate with other design professionals to increase the knowledge base across the community. Webinars and presentations form a key part of our internal education strategy as well providing a platform for external engagement to increase our impact. Our sustainability team has presented externally in the past year at the SEABC Sustainability series and the Carbon Leadership Forum British Columbia. We also continue to present to our Architectural and industry partners via lunch and learns and engagement events. |
| Train all of your firm's structural engineers on the core concepts and skills required to measure, reduce, and report embodied carbon. | Achieved | Beyond our sustainability team, Equilibrium has also made a commitment to upskill all of our designers to be literate in embodied carbon. Staff are given financial support to attend external talks, provided both by EQUILIBRIUM and others on the subject of embodied carbon, are engaged with and given feedback resulting from sustainability reviews on their projects, are provided with access to reference documents including those authored by SE2050 and are kept up to date with the latest research and thinking via our weekly EQ University training sessions. |
| Incorporate embodied carbon education in your onboarding process for all new employees. | Achieved | New employees are provided with an embodied carbon briefing document on joining the firm. Existing employees have access to this information for easy reference and to assist Clients understand the impact of decisions on projects. |
| Initiate an embodied carbon interest group within your firm and outline their goals. | Achieved | The EQUILIBRIUM sustainability committee continues to meet monthly to transfer and share knowledge on embodied carbon gained through project work, sustainability reviews and external engagement. |
| Create an Embodied Carbon digital resource wiki and/or forum on your firm's internal website... | Achieved | The sustainability committee collaborate using an internal sustainability forum, used to share document and industry news outside of monthly knowledge sharing workshops. |
| Provide narrative outlining plans for minimum (2) firm-wide presentations per year on the topic of embodied carbon | Achieved | Technical presentations are provided weekly via EQ University training sessions, often including topics on sustainability. This year sustainability related sessions have featured the revisions to the embodied carbon legislation to be included in the upcoming Vancouver Buildings Byelaw 2025 as well as details on the winning entry for the CLFBC large building award (also as part of the case study completed by Equilibrium and published for CLF BC) and sustainability lessons learned form a European perspective (as part of our role engaging with the IStructE). This year a detailed presentation on "ASCE Pre-standard for Assessing the Embodied Carbon Structural Systems for Buildings" were provided to all employees. |

## REPORTING

*1 required [R], 2 recommended.*

| ELECTIVE | STATUS | DESCRIPTION |
|---|---|---|
| **Submit a minimum of (2) projects per U.S. office with structural engineering services to the SE 2050 Database... [R]** | Achieved | EQUILIBRIUM have submitted a further 2 projects to the SE2050 database in 2026 and plan to increase this number over the coming 12 months. |
| For multi-office firms, describe how each office is measuring and reporting embodied carbon. | Achieved | Each EQUILIBRIUM Office offers LCA as part of our services to benefit the needs of our clients and help drive evidence-based decisions to improve the sustainable credentials on our projects. Regardless of scope, each office participates in a sustainability review for all projects, conducted by members of the sustainability committee composed of members from across our North American offices. |
| Compare the embodied carbon emissions from multiple projects across your firm. Analyze and document what data or pieces of information are most important and communicate the findings to your firm | Achieved | The extent of embodied carbon analysis depends on the size of project and scope of the EQUILIBRIUM appointment. Emissions are compared between similar projects on a per $ft^2$ basis during sustainability reviews and against industry benchmarks or institutional limits when submitting to local authorities for full LCA appointments. Key information includes an accurate bill of materials, accurate concrete EPDs reflecting the GWP emissions of a local supplier and the transport distances associated with timber supply, especially travelling greater than 500 miles, as is common in Noth America. |
| Include all structural material quantities in your submissions to the SE2050 database. | Achieved | Material quantities are included in the projects submitted to the SE2050 database. |
| Propose other actions that promote the reporting of embodied carbon data and describe their value. | Achieved | EQUILIBRIUM encourages a culture of learning lessons from past projects and sharing these with fellow design professionals at industry events. When presenting on the subject of embodied carbon, such as at the SEI Climate Symposium, our team has leveraged real world project examples to highlight our decision-making process and to illustrate the magnitude of savings achieved for our clients and projects. |

## REDUCTION

1 required [R], 4 recommended.

| ELECTIVE | STATUS | DESCRIPTION |
|---|---|---|
| **Set clearly stated, firm-wide reduction targets in the short-term (<1 year) and long-term (>5years) [R]** | Achieved | EQUILIBRIUM intends to complete sustainability reviews on all projects over the next year. We also plan to continue to reduce the embodied carbon of our designs over the next 5 years, matching the trajectory and limits for decarbonization recently set out by the City of Vancouver, to be applied on a project-by-project basis regardless of location in North America. |
| Submit a Circular Economy Narrative describing how a project supports the circular economy. This can be done by incorporating re-use or design for deconstruction into at least one project | Achieved | Opportunities for material circularity are identified during our sustainability reviews, with considerations to the availability of existing material and the potential to design for deconstruction tailored to the specifics of the project. For example, on the MOA project in Vancouver, BC, we assessed the condition of skylight secondary structure throughout the existing building and designed remedial seismic retrofit details, reusing this existing structure, to preserve the materials in the building and limit the volume of new material required. We will continue such initiatives across all of our projects where feasible and will report our lessons learned in next year's SE2050 report. |
| Develop and implement a workflow that makes it easier to make early design decisions based on embodied carbon | Achieved | During the sustainability reviews, conducted on all projects, the team begin by following a targeted workflow involving the completion of a high-level bill of materials. Combined with GWP factors for key structural materials, this is used to complete a hot-spot analysis for key carbon emitters, justifying our next steps for targeted reductions. The team continually employes a hierarchy in design of build nothing, build less, build smart, per by SE2050 and IStructE guidelines, to maximize the achieved savings on our projects. |
| Update your specifications to incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements. | Achieved | All EQUILIBRIUM material specifications include clauses to limit the embodied carbon of structural materials and require evidence, such as EPDs, to be submitted to the design team for approval. Our approach is often adjusted to reflect the geographical availability of materials and to avoid unintended consequences or excessive transportation emissions by ignoring a full life-cycle approach to embodied carbon analysis. |
| Communicate the embodied carbon impacts of different design options to clients with creative and effective data visualization. | Achieved | When commissioned to complete full LCA services, we provide clients with an LCA report detailing the carbon impacts of different options and make informed recommendations on how to improve performance vs a reference design or industry benchmarks. |
| Compare different design options with embodied carbon as a performance metric during the project concept phase. Explain what you did and what the results changed (if anything). | Achieved | Comparing design options is part of the EQUILIBRIUM design strategy on all projects. Utilizing embodied carbon as a key metric during the concept phase has successfully been used over the past year to justify our adoption of more sustainable materials including mass timber and high SCM concrete. |
| Participate in a LEED, ILFI Zero Carbon, or similar project design charrette and speak to potential design considerations impacting embodied carbon | Achieved | EQUILIBRIUM has contributed towards multiple buildings targeting sustainable certification in 2024. As examples, the year we are doing a multi-residential building in Dartmouth NS and Austin Convention Center. We will continue to attend workshops and contribute constructively towards reporting schemes in the coming 12 months. |
| Collaborate with your concrete supplier to reduce embodied carbon in a mix design below an acceptable baseline (e.g. NRMCA | Achieved | Collaborating with our concrete suppliers has been a recent success story for EQUILIBRIUM. As part of our initiative to understand material supply chains in North America, we engaged with all major cement suppliers in the Pacific North West (Lafarge & Lehigh Hanson) to establish sources, availability and distribution of cement and SCMs. This work has helped us to minimize GWP, with |

| | | |
|---|---|---|
| regional baseline values). Discuss what you found and what it means in your market | | different specifications for different projects reflecting the availability of slag or fly ash as coal power stations and blast furnaces are phased out across different regions geographically. |
| Have an Environmental Product Declaration (EPD) created for a project. Get a project or client to require the creation of an Environmental Product Declaration (EPD) that did not exist before. | Achieved | We have continued our dialogue with multiple CLT and GLT suppliers (Mercer, MTS, Arboreal) regarding the status and background data for EPDs that are in progress. Our engagement is helping to create a culture of reporting and has encouraged new and old firms focus on EPD creation. |

## ADVOCACY

2 required [R], 4 recommended.

| ELECTIVE | STATUS | DESCRIPTION |
|---|---|---|
| **Describe the value of SE 2050 to clients. How can your design teams collaborate to reduce embodied carbon? Please attach any associated marketing materials. [R]** | Achieved | An SE2050 commitment provides certainty to clients that our intentions are backed up with real world actions and accountability. Early stage collaboration amongst design team members is key to understanding project opportunities and maximizing the impact of design solutions though the combined knowledge, expertise and energy of multiple collaborators. |
| **Publicly declare your firm as a member of the SE 2050 Commitment however you see fit (e.g. on your website, LinkedIn, or other social media). [R]** | Achieved | A declaration is of membership to SE2050 is included on eqcanada.com, LinkedIn and in all of our proposal documents. |
| Give an external presentation on embodied carbon that demonstrates a project success or lessons learned. Get connected at a CLF regional hub near you and be sure to post the recording. | Achieved | The EQUILIBRIUM team are actively presenting and sharing lessons learned from their structural sustainability work to the North American design community. In the past we have presented at SEABC Sustainability series and have been in advisor role at the Carbon Leadership Forum British Columbia. We also provided content for the SEI Climate symposium and the IStructE sustainability panel to share our knowledge with the structural community. We continue to do outreach with old and new collaborators to help our industry decarbonize towards 2050 goals. |
| Mentor a firm new to the embodied carbon space. Describe how you identified their needs and what improvements were made | In Progress | Through our work with the CLF, SE2050, the City of Vancouver and the Athena Institute, we have developed an in-depth knowledge of the embodied carbon landscape in the markets in which we work. We seek to share this knowledge both through this engagement and with the design teams we work with on a day to day project basis. We are open to mentoring firms new to the space and welcome people to reach out to us with questions they have. |
| Engage with structural material suppliers in your region to communicate the importance of Environmental Product Declarations (EPDs) and low-carbon material options. | Achieved | We are currently in dialogue with multiple CLT and GLT suppliers regarding the status and background data for their EPDs. Our engagement is helping to create a culture of reporting and has encouraged new and old firms to create new EPDs. |
| Engage with local, state, and federal governments to communicate the importance of low-embodied carbon procurement and construction policies, and provide expert testimony to this effect. | Achieved | EQUILIBRIUM provided written comment to the City of Vancouver for the latest revision of their Embodied Carbon policy and, through conversations with key stakeholders at the City, have helped shape this policy to achieve deeper and more measurable carbon reductions in the built environment. The team is open to working with other regional and federal authorities to share our in-depth knowledge in sustainable structural design and help shape policy to achieve a greater impact which transcends our immediate reach on design projects. |
| Propose alternative methods for advocacy and describe their value. | In Progress | EQUILIBRIUM advocate for embodied carbon reduction through our work on projects and seek to educate others with a wider global scale and reach to realise greater reduction overall. We are always seeking further opportunities to those detailed in this report and will communicate these to SE2050 as they arise over the coming period. |