

**NORR**

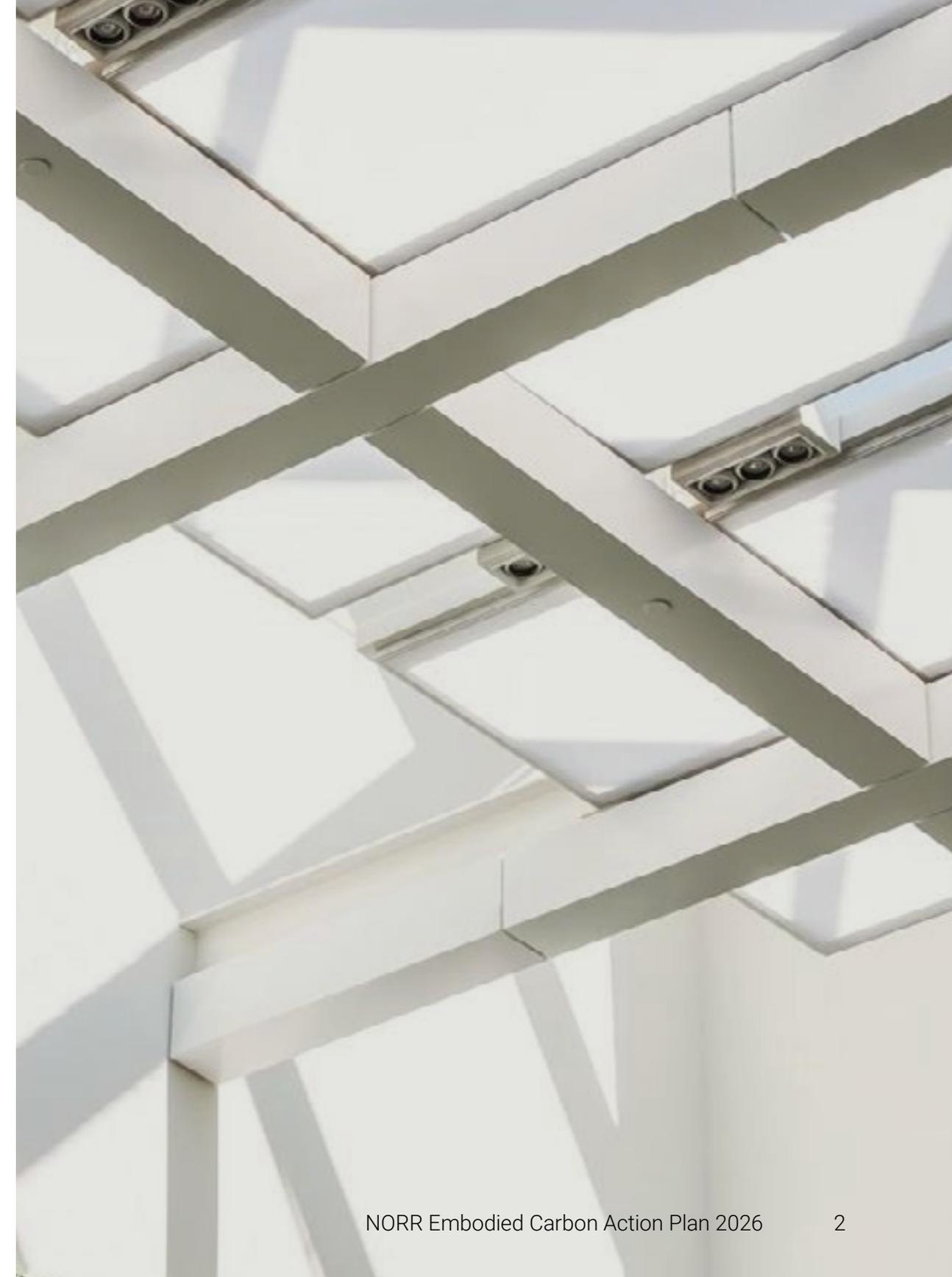
Integrated Thinking.  
Inspired Design.

# Embodied Carbon Action Plan 2026

# Contents

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# Introduction

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This report presents our Embodied Carbon Action Plan (ECAP) in line with the Structural Engineering 2050 (SE 2050) Commitment Program, aiming to achieve carbon-neutral structural systems by 2050 to mitigate climate change.

# Our Commitment

We are committed to establishing NORR as a leader in sustainable structural engineering, delivering measurable embodied carbon reductions through accountable, collaborative, and forward-looking design practices.

NORR is committed to advancing low-carbon structural design and reducing embodied carbon across our projects. As a signatory to the Structural Engineers 2050 (SE 2050) Commitment, we integrate embodied carbon reduction into our design approach, decision-making, and project delivery—moving beyond compliance toward measurable impact and industry leadership.

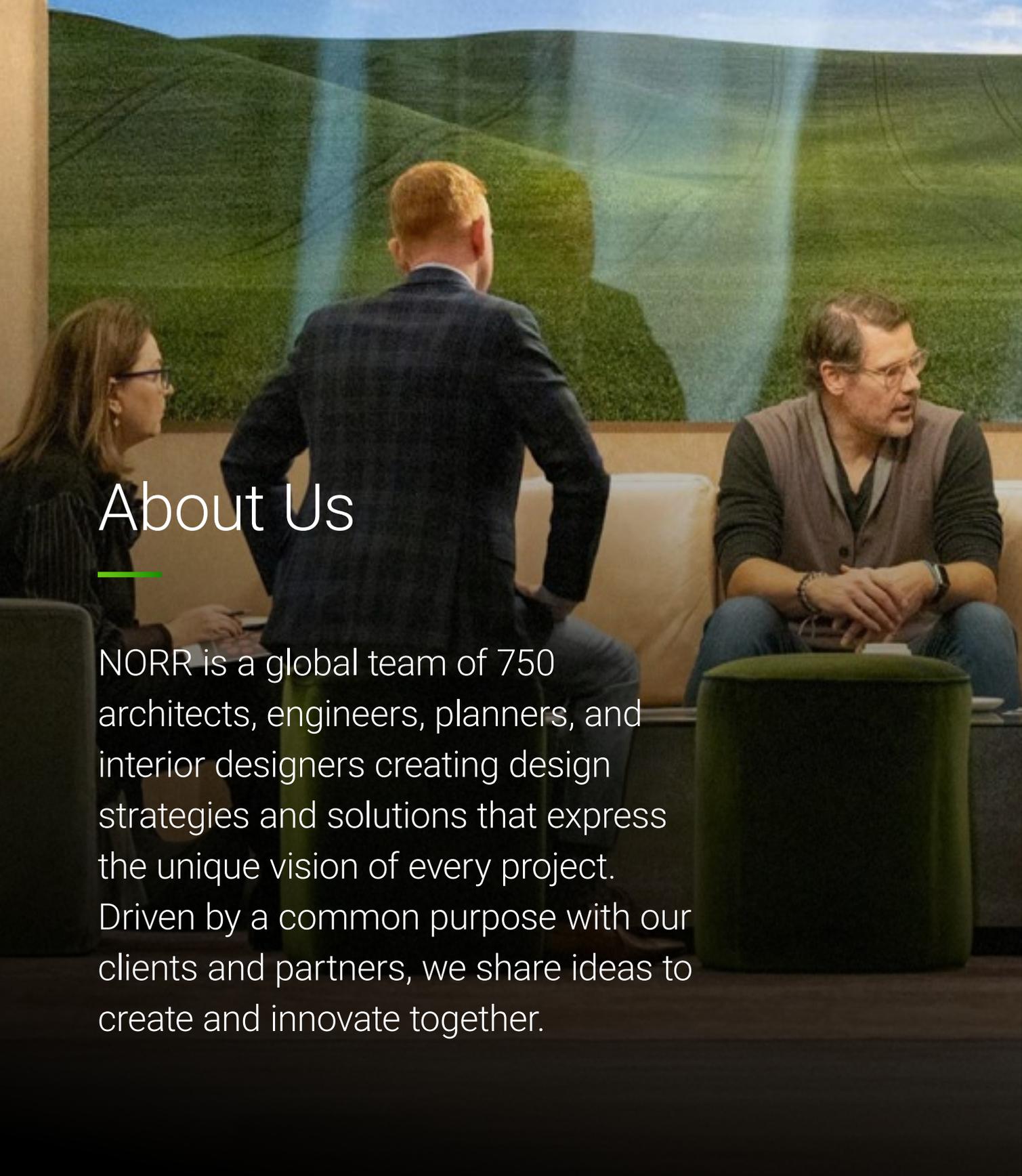
The construction sector is a significant contributor to global greenhouse gas emissions, and structural systems represent a critical opportunity for change. Through active participation in the SE 2050 program, NORR contributes to a profession-wide, data-driven effort focused on education, measurement, reduction strategies, and advocacy. We collaborate with industry partners to advance shared tools, benchmarks, and methodologies that support consistent and transparent embodied carbon reporting.

Our approach emphasizes early design integration, material efficiency, optimized structural systems, and low-carbon material specifications,

recognizing that the greatest opportunities for embodied carbon reduction occur at the outset of a project. By strengthening internal carbon literacy, refining our specifications, and embedding embodied carbon considerations into standard practice, we aim to deliver resilient, high-performance structures with reduced environmental impact.

This 2026 Embodied Carbon Action Plan (ECAP) outlines our near-term objectives, reporting commitments, and internal protocols, while reflecting on progress achieved during the previous reporting period. It reinforces our long-term vision: to continuously improve, innovate, and contribute meaningfully to the profession's collective goal of net-zero embodied carbon structural systems by 2050.

We invite our employees, clients, and collaborators to engage with us as we advance responsible structural design and help shape a lower-carbon, more resilient built environment.



# About Us

NORR is a global team of 750 architects, engineers, planners, and interior designers creating design strategies and solutions that express the unique vision of every project. Driven by a common purpose with our clients and partners, we share ideas to create and innovate together.

Our story began in 1938; since then NORR has evolved into an employee-owned, fully integrated firm committed to sustainable development goals across 12 market sectors in Canada, the US and UK. Our Mission is to bring people, design, and technologies together to think bigger and act bolder—creating resilient places and spaces that promote well-being for all.

## Our Journey To Net Zero

NORR is committed to supporting the transformation of the built environment from a major source of carbon emissions into a driver of climate action—across **client engagements** and our internal operations. We see decarbonization as a best practice, not an exception, and share the vision of the **United Nations Sustainable Development Goals** to strengthen common, global objectives.

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### Sectors

- Commercial
- Education
- Health Sciences
- Hospitality
- Industrial
- Justice
- Public
- Residential
- Restaurants
- Retail
- Science + Research
- Transportation

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### Services

- Architecture
- Interior Design
- Structural Engineering
- MEP Engineering
- Sustainability
- Master Planning and Urban Design

# Embodied Carbon Team

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**Smit Patel** P.Eng., M.Eng.  
Structural Engineer  
SE 2050 Embodied Carbon Champion

Smit is a Professional Engineer with over eight years of experience in executing structural engineering projects. Passionate about integrating low-carbon solutions into the built environment, he has led projects across health care, commercial, residential, and institutional sectors. His knowledge in mass timber structures supports the industry's shift toward more sustainable construction, aligning with global climate goals.



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**Hassan Saffarini** P.Eng., Ph.D., PMP, AP, CAHP  
Principal, Structural Engineering, North America

Hassan leads NORR's structural engineering team in Canada. With 40 years of professional experience and a Ph.D. from UC Berkeley, he has been particularly aware of the potential impact of architecture and engineering projects on the environment. He became a LEED AP in 2007, and promptly bought into the SE 2050 commitment in 2021.



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**Ali Husain** P.Eng., M.Eng., ing.  
Associate  
Studio Manager, Structural Engineering

As the Studio Manager of Structural Engineering with more than a decade of experience, Ali has a proven track record of success in a wide variety of projects in Canada and abroad. With a passion for sustainable design and a deep commitment to finding new and innovative solutions, Ali is skilled in creating structures that meet the highest standards of environmental responsibility.



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**Blake Jackson** AIA, WELL Faculty, Fitwel Amb., CPHC, ENV SP  
Director, Sustainability

As Director, Sustainability at NORR, Blake supports project delivery and CSR and leads the firm's global program to achieve both the AIA 2030 and SE 2050 Commitments. For over 25 years, Blake has been working at the nexus of sustainability, wellness, resiliency, and equity, promoting positive, measurable outcomes for built environment projects worldwide.

# NORR Embodied Carbon Action Plan

Our goals are presented in four categories and will be achieved through the identified actionable steps. These outcomes form the base doctrine of our environmental commitment and serve to direct this Action Plan.

## The Four Areas of Focus of the SE 2050 Commitment Program



### Education

Educating employees and enhancing professional development on topics related to reducing embodied carbon in design.



### Reporting

Measuring, tracking, and reporting embodied carbon data and comparing determined embodied carbon values to predefined targets.



### Embodied Carbon Reduction Strategies

Reduce embodied carbon, document lessons learned in pursuing reduced-carbon designs, and set embodied carbon goals for projects in design.



### Advocacy

Share the goals of the SE 2050 Commitment Program and enhance outreach on the important topic of embodied carbon.

# ECAP

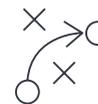
**Vision:** To establish NORR as an industry leader in embodied carbon best practices in structural engineering and ultimately assist in achieving industry carbon neutrality.

**Mission:** These four pillars support NORR's vision to become a central hub for embodied carbon research, education, dissemination, and execution.



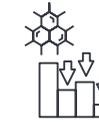
## 1. Meet and Exceed Requirements

The SE 2050 Commitment Program requirements will be met and exceeded through unique solutions that develop our experience in the field. While the SE 2050 guidelines provide a minimum standard to be met, in order to develop excellence in sustainable design and play a significant role in the health of the environment, our target is to surpass these benchmarks by, or before, 2050.



## 2. Implement New Design Strategies

New structural design strategies will be implemented to enable better assessment and reduction of embodied carbon. As the consideration of embodied carbon is growing, new tools and methodologies will be adopted to effectively achieve the overall vision.



## 3. Facilitate Carbon Reduction Goals

Property owners' own carbon reduction goals will be facilitated through our proficiency. To elicit the greatest consideration of embodied carbon, the carbon goals of property owners will be achievable to encourage further carbon reduction and to promote industry-wide change.



## 4. Carbon Reduction Education

Technical staff will be inspired and educated in carbon reduction strategies as those are developed internally. One of NORR's greatest strengths is in its multi-disciplinary, in-house design teams, which exist alongside and integrate with the structural engineering discipline. The other disciplines will be engaged through company-wide knowledge dissemination.

# Goals

The following list of goals addresses the critical topics of education, reporting, embodied carbon reduction, and advocacy that are essential to an effective carbon reduction plan.

1. Identify and refine structural design processes within the scope of NORR's current procedures that can yield improvements to embodied carbon totals.  
**Action:** EC comparative studies are now integrated into our design process.
2. Establish embodied carbon as an additional criterion to monitor, on all major structural design projects.  
**Action:** Mandatory Life Cycle Assessment (LCA) is required for all new build and major retrofit projects where scope, fee, and project conditions permit.
3. Work with clients to set embodied carbon reduction targets for significant projects.  
**Action:** Reduction targets are set at project kickoffs through EC workshops, with early contractor involvement to ensure feasible low-carbon solutions where possible.
4. Influence other disciplines' consideration of embodied carbon through advocacy and resource sharing.  
**Action:** NORR promotes EC collaboration through multi-disciplinary design charrettes, shared guidelines and case studies with its architectural teams committed to AIA 2030 and MEP team committed to MEP 2040.
5. Advocate multi-disciplinary sustainability studies of embodied and operational carbon to arrive at the most environmentally conscious solutions.  
**Action:** Select projects now undergo integrated carbon studies, with results documented in project scorecards and shared group-wide.
6. Ensure NORR applies state-of-the-art tools and methods to achieve a reduction in embodied carbon annually.  
**Action:** One Click LCA deployed to EC champions and sustainability experts, with annual training sessions planned for broader staff. SE 2050's Embodied Carbon Order of Magnitude (ECOM) tool introduced and encouraged for use by all structural engineers.
7. Improve upon available embodied carbon reduction tools for structural designs and identify knowledge gaps following their adoption.  
**Action:** Structured training is provided quarterly in technical exchange sessions to ensure staff stay informed on low-carbon solutions, new technologies, and tools. Specifically, the new SE 2050 ECOM calculator.
8. Engage NORR's multi-disciplinary technical staff to encourage feedback and facilitate discussion towards embodied carbon goals on a semi-annual basis.  
**Action:** A semi-annual EC task force with the EC champion to capture lessons learned, and a database to document best practices. Guest speaker sessions for industry insights, and staff incentives are employed.
9. Conduct LCA for A1-A3 and report EC data for all applicable projects.  
**Action:** Engage with the Engineer of Record (EOR) to ensure all applicable projects undergo a full LCA to measure the EC and report that data to the SE 2050 database.

# Strategies



The following strategies outline the means through which the goals will be achieved and inform the actionable tasks.

1. Advance in-house tools with the Design Technology (DT) team, including Revit-based material takeoff integration to streamline embodied carbon quantification.

**Actions:**  Education  Reporting

2. Develop procedures for optimizing embodied carbon reduction over the course of a project, leveraging lessons learned and knowledge gained from industry best practices.

**Actions:**  Education  EC Reductions

3. Establish a requirement for the Engineer of Record to ensure LCAs are carried out within the project scope for all new build and major renovation projects.

**Actions:**  EC Reductions

4. Engage clients and architects to optimize the use of structural materials and suggest lower-carbon alternatives when available.

**Actions:**  Advocacy

5. Host discussions with other disciplinary teams to increase engagement and assist in determining areas of potential embodied carbon reduction.

**Actions:**  Advocacy  Education

6. Train staff on necessary software for monitoring embodied carbon throughout a project, such as One Click LCA, ECOM, Internal spreadsheet.

**Actions:**  Education  EC Reductions

7. Review available embodied carbon project data and develop a standardized method of reporting project data.

**Actions:**  EC Reductions  Reporting

8. Schedule semi-annual meetings to update the firm on the EC reduction implementation progress and ongoing tasks.

**Actions:**  Education

9. Engage our Global Marketing and HR departments to help establish the SE 2050 campaign and build awareness of the initiative.

**Actions:**  Education  Advocacy

# Actions

Union Station Revitalization  
Toronto, ON, Canada



This section presents the actionable steps to be taken to ultimately meet our carbon reduction vision and goals. The tasks are divided into the 5 critical components identified by the SE 2050: education & knowledge sharing, reporting, embodied carbon reduction, advocacy and lessons learned. In this report we reaffirm our commitment to the SE 2050 and provide an update about our actions and our plan to continue on this trajectory.

# Education

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference	
1.01	Annually distribute firm-wide announcement of firm's commitment to SE 2050.	Achieved. ECAP report to be distributed annually before Earth Day.	Achieved. ECAP was internally reviewed together with full structural engineering team.	ECAP report to be distributed annually before Earth Day.	Document: Annual ECAP
1.02	Provide a narrative describing how NORR is promoting firm-wide education for EC & the SE 2050 Commitment Program.	Action plan will be continually updated and redistributed to all disciplines. Share on LinkedIn to external stakeholders.	Achieved. Action plan shared and presented company-wide. Regular social media posts from sustainability team made throughout the year to external stakeholders.	Action plan will be continually updated and redistributed to all disciplines. Share on LinkedIn to external stakeholders. Increase engagement on social media platforms.	<b>NORR's Commitment to Sustainable Design</b>  Document: <b>EC Education Plan</b>
1.03	Nominate an EC Reduction Champion. Include profile in ECAP.	EC Champion to continue development of internal and external documents and procedures.	Achieved. EC champion developed and delivered webinars and lunch & learns to structural staff.	EC Champion to continue development of internal and external documents and procedures.	<b>EC Champion profile</b>
1.04	Select a date to present an EC 101 Webinar to the firm. Can use own or existing.	Refine presentation and present to the larger US and Canadian group.	Achieved. Presented to staff in both US and Canada.	Refine presentation and present to the larger US/Canadian group and sustainability group.	Document: <b>EC Education Plan</b>
1.05	Have a representative attend quarterly external education programs via SE 2050.	External programs continue to be attended quarterly.	Achieved.	External programs continue to be attended quarterly.	External learning opportunities are continually sought after and shared with structural engineering team members.

# Education (Continued)

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference
1.06 Share the SE 2050 resources library with staff.	Continue to develop NORR internal EC library and regularly share with new and existing staff. Organize information and ensure it is up to date.	Achieved. Internal library updated with new EPD data, recordings from Webinars, and new product information.	Continue to develop NORR internal EC library and regularly share with new and existing staff.	Updates to the EC resource library are shared with structural team members. New members are onboarded with the latest EC resources.  Document: <a href="#">EC Education Plan</a>
1.07 Provide outlining plans for a minimum of one firm-wide presentation per year on EC.	Present a structural focused case study during the annual EC presentation on April 22, 2025.	Achieved.	Present our EC reporting for projects during the annual EC presentation on April 22, 2026.	NORR's multi-disciplinary Earth Day presentation was held on April 22, 2025.

# Reporting

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference	
2.01	Provide a narrative describing plans to measure, track and report EC.	Update procedures for EC calculations, including EPD access, LCA methodologies, and material quantification in Internal EC Training Document for user reference.	Training document continues to be updated. This year, we added templates for reporting project data so that it can be added to SE 2050 project database.	Update narrative to track the number of projects that are uploaded to the database year over year. Set a target of 100% of project reporting in 5 years.	Document: <a href="#">EC Reporting Plan</a>
2.02	Submit two or more projects annually to the SE 2050 database.	Continue to submit two or more projects for 2025.	30 projects were submitted for 2025.	Meet or exceed project reporting for 2026.	<a href="#">SE2050 Database</a>
2.03	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.	New goal for 2026.	New goal for 2026.	Analyze EC data from submitted projects to identify trends across sectors and building types, and develop targeted reduction strategies based on key findings.	Document: <a href="#">EC Reporting Plan</a>  Share cumulative reductions of reported projects, internally and externally.

# EC Reduction Strategies

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference	
3.01	Meet your target EC reduction from the previous year.	One Year EC reduction goal is 10%. Five Year EC reduction goal is set to be 30%.	12% reduction achieved through combined material substitution and design optimization measures. Values are representative of projects where these strategies were applied.	Continue reduction targets to meet five year goal. Prioritize sustainability without compromising structural performance.	Document: <a href="#">EC Reduction Outcomes</a>
3.02	Provide lessons learned and feedback to the program by submitting a case study.	Formalize lessons learned and track for each project. Submit via case studies to SE 2050 database.	Case studies submitted in 2025 along with ECAP.	Continue tracking lessons learned for all structural projects.	Document: <a href="#">EC Reduction Outcomes</a>
3.03	Update specifications to incorporate embodied carbon performance.	Continue updating other applicable structural specifications as well as drawing notes to include low carbon alternatives.	Cast-in-place concrete reinforcement and structural steel specifications were updated. Updates to other structural specifications still ongoing.	Continue updating other applicable structural specifications as well as drawing notes to include low carbon alternatives.	Document: <a href="#">EC Reduction Outcomes</a>
3.04	Create a project-specific EC reduction plan.	Develop EC reduction plan into a standardized EC reduction workflow for future EC projects.	EC reduction plans made for 5% of projects only.	Expand the number of projects with a project-specific EC reduction plan based on structural materials.	Document: <a href="#">EC Reduction Outcomes</a>

# Advocacy

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference
4.01	Engage with structural material suppliers in your region to communicate the importance of Environmental Product Declarations (EPDs) and low-carbon material options.	Connected with suppliers via email for EPDs and other technical exchanges.	Continue informing suppliers of new changes made to specifications. Invite suppliers for presentation to learn more about their progress on attaining EPDs for their products.	
4.02	Describe the value of SE 2050 to clients (Including marketing materials).	Achieved. Marketing team writes and shares sustainability focused articles to staff and clients.	Continue to develop informational materials for client reference. Collaborate with marketing team to share with clients.	Document: <a href="#">EC Advocacy Plan</a>  Sustainability Articles: <a href="#">Green Engineering</a>  <a href="#">LCA Impact</a>
4.03	Declare SE 2050 membership in boilerplate proposal language.	Achieved.	Update proposal boilerplate to present embodied carbon reduction strategies as an added service offered by our structural engineering studio.	Document: <a href="#">EC Advocacy Plan</a>

# Advocacy (Continued)

SE 2050 Commitment Item	Target Action 2025	Status	Target Action 2026	Comment/Reference
4.04 Share SE 2050 details on company website.	Update website with the latest ECAP and share SE 2050 updates on a semi-annual basis.	SE2050 commitment shared.	Update website with the latest ECAP and share SE 2050 updates on a semi-annual basis.	Document: <a href="#">EC Advocacy Plan</a>
4.05 Share education opportunities with clients.	Engage clients to join EC education opportunities.	Some clients welcomed EC education opportunities and worked with NORR to establish reduction targets.	Engage more clients to join EC education opportunities by showcasing our sustainability work and awards.	Document: <a href="#">EC Advocacy Plan</a>  <a href="#">SE2050 Database</a>

# Education Plan



We recognize that education plays a crucial role in driving internal action toward embodied carbon reduction. Our strategy focuses on empowering employees with the knowledge and skills necessary to contribute effectively to our sustainability goals.



## Education

NORR's SE 2050 Champion leads efforts to integrate embodied carbon reduction practices into daily work. Acting as a sustainability ambassador, the Champion supports education initiatives, and promotes awareness and action across the firm.

NORR is committed to building embodied carbon literacy at all organizational levels. Quarterly webinars on embodied carbon are offered to all employees, with recorded sessions incorporated into the onboarding program. This approach ensures that all team members develop a foundational understanding of embodied carbon and its relevance to our work.

In 2025, NORR achieved Bronze status in carbon literacy, with over 20 employees completing a comprehensive two-day training program undertaken by a multi-disciplinary group across the firm. As part of this initiative, our SE 2050 Champion, Smit Patel, and Sustainability Advocate, Hassan Saffarini, represented the structural engineering team in obtaining their carbon literacy certification. This milestone reflects our ongoing commitment to advancing internal education and aligns with our broader efforts under the SE 2050 Education pillar to equip our teams with the knowledge required to meaningfully reduce embodied carbon in our projects.

We are committed to transparently communicating our initiatives, successes, and lessons learned with clients, the design community and the public at large.



Net Zero Workplaces Meeting

### **Education (Continued)**

Recognizing the pivotal role of structural engineers in driving embodied carbon reduction, we conduct recurring workshops on core concepts and skills related to measuring, reducing, and reporting embodied carbon. Through these workshops, we empower our engineers to incorporate sustainability principles into their design decisions effectively.

To facilitate ongoing learning and collaboration, we have established an Embodied Carbon Committee within our practice. This committee, while broadly addressing sustainability topics, prioritizes embodied carbon reduction initiatives. In collaboration with our Sustainability team, this committee promotes interdisciplinary dialogue and knowledge sharing and enhances the collective understanding and commitment to sustainable engineering practices.

We actively engage with the Carbon Leadership Forum (CLF) Regional Hubs to stay abreast of the latest developments and best practices in embodied carbon reduction. Our participation includes attending presentations and working sessions, and reporting back to the firm. By leveraging regional networks, we strengthen our knowledge base and enhance our capacity to drive meaningful change.

In addition to these initiatives, we continually explore new avenues for promoting embodied carbon education within our firm. Through ongoing evaluation and feedback, we refine our educational strategies to ensure maximum impact and engagement across our organization.

### **Knowledge Sharing**

Effective knowledge sharing is essential for driving external awareness and understanding of embodied carbon reduction efforts. We are committed to transparently communicating our initiatives, successes, and lessons learned with clients, the design community, and the public at large.

We are employing a multifaceted approach to external communication, leveraging various channels to share information about our embodied carbon reduction work. This includes regular updates on our website, social media platforms, and industry publications to reach a broad audience and foster engagement.

We actively engage with professional networks and associations to share our embodied carbon reduction journey and exchange insights with peers. Through participation in industry events, panel discussions, and webinars, we contribute to advancing the discourse on sustainability in structural design.

Through these initiatives, we aim to catalyze broader awareness and action on embodied carbon reduction, fostering a culture of sustainability within the design community and beyond.



We are committed to implementing specific and measurable strategies to reduce embodied carbon in our project work both in the short term and the long term. Our reduction outcomes are grounded in innovative approaches that prioritize sustainability without compromising design integrity or structural performance.

### Embodied Carbon Reduction Performance and Targets





We empower clients to make informed decisions that prioritize sustainability without sacrificing project goals or objectives.

NORR has established reduction targets for embodied carbon: 10% in the short term (less than one year) and 30% in the long term (five or more years). These targets serve as guiding principles for our design teams, driving innovation and encouraging the adoption of sustainable practices across all projects.

We are implementing a workflow that facilitates early design decisions based on embodied carbon considerations. By integrating embodied carbon analysis tools into our design process, we empower our teams to identify low-carbon alternatives and optimize material selections from the outset.

We have updated our specifications to incorporate embodied carbon performance criteria, ensuring that sustainability considerations are integrated into all aspects of our project documentation. By specifying low-carbon materials and construction methods, we drive demand for environmentally responsible practices within the industry.

In 2025, NORR achieved a reduction in embodied carbon of 12% across applicable projects. While the adoption of GUL cement and other supplementary cementitious materials formed a key component of this reduction, the outcome



Sir Robert Peel Centre Redevelopment, Brampton, ON, Canada

reflects the combined effect of multiple strategies. These include optimization of structural systems, reduction of material quantities through design efficiency, and early-stage comparison of alternative solutions. The use of GUL should therefore be understood as an enabling baseline, with additional reductions achieved through coordinated design decisions.

We compare different design options using embodied carbon as a performance metric during the project concept phase. By evaluating the environmental impact of various design alternatives, we identify opportunities for optimization and

refinement that minimize embodied carbon emissions while maximizing project value.

We communicate embodied carbon impacts of different design options to clients using effective data visualization techniques. Through visually engaging presentations and reports, we empower clients to make informed decisions that prioritize sustainability without sacrificing project goals or objectives.

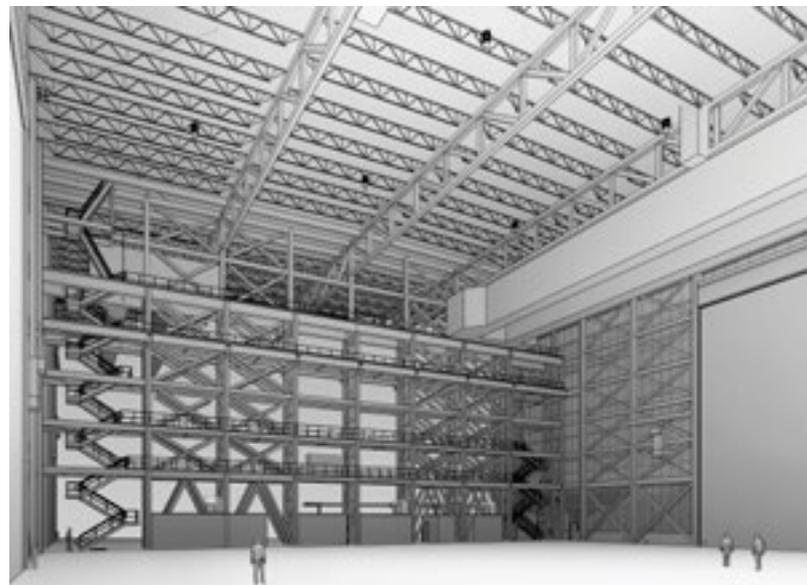
# Reporting Plan



Transparent and accurate reporting is fundamental to our commitment to embodied carbon reduction. Our reporting plan outlines how we will measure, track, and report embodied carbon data, ensuring accountability and facilitating informed decision-making throughout our projects.

17 Market West  
Philadelphia, PA, US

Our reporting plan encompasses a comprehensive scope of embodied carbon data, covering all structural materials used in our projects.



Rhodes Building 57, Philadelphia, PA, US

We utilize a robust methodology to calculate embodied carbon for structural materials. This methodology encompasses Life Cycle Assessment (LCA) principles and considers the environmental impacts associated with material extraction and manufacturing. When calculating embodied carbon or specifying materials on our projects, we employ a systematic approach to finding, selecting or requesting Environmental Product Declaration (EPD) data. Our methodology prioritizes EPDs from reputable sources and ensures that data quality and reliability are thoroughly vetted.

To support accurate quantity takeoffs, we leverage digital tools such as Revit to extract structural material quantities at various stages of design. In addition to EPDs, we are actively familiarizing our structural staff with the SE 2050 ECOM tool to enable efficient estimation of embodied carbon based on material quantities. This allows for quicker assessments during early design stages while maintaining alignment with industry reporting standards.

In addition to the internally developed Carbon Calculator, we utilize industry-leading LCA software, such as One Click LCA and Beacon, to quantify embodied carbon in our projects accurately. The scope of our LCA encompasses relevant life-cycle stages, including A1-A3 (cradle-to-gate), A1-A5 (cradle-to-grave), or other specified boundaries as required by project goals and objectives.

We employ standardized procedures for calculating material quantities at various project stages, ensuring consistency and accuracy in our reporting. Whether at the conceptual design phase or during construction administration, our reporting methodology accounts for material usage throughout the project lifecycle.

Our reporting plan encompasses a comprehensive scope of embodied carbon data, covering all structural materials used in our projects. We strive to capture data from a representative sample of projects across our portfolio, providing insights into trends and performance metrics at both the project and firm levels. In 2025, we significantly expanded our reporting efforts, increasing the number of submitted projects from 2 to 30. This substantial growth reflects our commitment to advancing embodied carbon reporting, both for internal benchmarking and to contribute meaningfully to the broader SE 2050 database.

With this expanded dataset, we are now positioned to analyze trends across project types, material usage, and design approaches. These insights will inform future decision making and support the development of targeted strategies to further reduce embodied carbon in the buildings we design.

# Advocacy Plan



Our commitment is to advocate for policies, practices, and initiatives that promote embodied carbon reduction and sustainability in the built environment. Our advocacy plan outlines strategies to engage with clients, industry partners, governmental organizations, and the public to advance our shared goals of environmental stewardship and climate resilience.



We leverage our experience, partnerships, and influence to advocate for policies and practices that prioritize environmental stewardship and contribute to a more resilient and sustainable future.

We actively communicate the value of the SE 2050 Commitment to our clients, highlighting how our participation in the program aligns with their sustainability objectives and contributes to positive environmental outcomes. By showcasing the benefits of embodied carbon reduction, we foster collaboration and alignment with clients who share our commitment to sustainability.

We publicly declare our firm as a member of the SE 2050 Commitment, reinforcing our dedication to reducing embodied carbon and promoting transparency in our sustainability efforts. We showcase our commitment on our website, social media platforms, and other relevant channels to demonstrate leadership and inspire others to join us in this important initiative.

We engage with structural material suppliers in our regions to communicate the importance of Environmental Product Declarations (EPDs) and low-carbon material options. By advocating for greater transparency and sustainability in the supply chain, we drive market demand for environmentally responsible materials and encourage suppliers to prioritize embodied carbon reduction.

Through these advocacy initiatives, we demonstrate our commitment to driving positive change and advancing sustainability in the built environment. We leverage our experience, partnerships, and influence to advocate for policies and practices that prioritize environmental stewardship and contribute to a more resilient and sustainable future.

# Lessons Learned

680 Swedesford  
Repositioning  
Wayne, PA, US

The progression from 2024 to 2025 represents a significant shift in NORR's approach to embodied carbon reduction. In 2024, our efforts were intentionally concentrated on a limited number of projects, allowing us to pilot methodologies and develop a foundational understanding of embodied carbon strategies. 2025 marked a transition toward scaling and mainstreaming these practices across a wider range of projects.

Broader adoption across project teams is essential. This broader engagement has begun shifting design thinking, rather than treating embodied carbon as a specialized exercise.

#### **Lessons Learned and Program Evolution**

The progression from 2024 to 2025 represents a significant shift in NORR’s approach to embodied carbon reduction—from focused application on select, high-visibility projects to broader integration across the majority of our structural portfolio.

In 2024, our efforts were intentionally concentrated on a limited number of projects. This approach allowed us to pilot methodologies, test internal workflows, and develop a foundational understanding of embodied carbon assessment and reduction strategies. These targeted applications provided valuable insights into the practical implications of low-carbon design, particularly in relation to structural systems, material selection, and coordination with project stakeholders.

Building on this foundation, 2025 marked a transition toward scaling and mainstreaming these practices across a wider range of projects. Rather than focusing solely on exemplar projects, embodied carbon considerations were increasingly incorporated into standard design workflows. This expansion required a corresponding increase in internal capacity, resulting in a stronger emphasis on education, team engagement, and consistency of application across our offices in Canada and the United States.

#### **Expanded Education and Team Engagement**

A key lesson from 2024 was that meaningful reduction in embodied carbon cannot be achieved through isolated expertise alone. Broader adoption across project teams is essential.

In response, 2025 saw a significant expansion in education and engagement initiatives:

- Training efforts were extended beyond core sustainability leads to include a wider group of structural engineers across multiple studios
- Recurring workshops and knowledge-sharing sessions were used to reinforce fundamental concepts and practical application
- Greater alignment was achieved between regional teams, supporting consistency in approach and decision-making

This broader engagement has shifted embodied carbon reduction considerations into our design-thinking process, as opposed to treating them as a specialized or supplementary exercise.

#### **Advancements in Reporting and Data Consistency**

As embodied carbon analysis was applied more widely in 2025, the need for consistent and reliable reporting methodologies became more apparent.

Compared to 2024, reporting in 2025 was:

- More comprehensive, covering a larger and more representative sample of projects
- Better structured, with improved alignment between project stages and reporting outputs
- More consistent in terms of assumptions, system boundaries, and data sources

This progression has improved the reliability of our internal benchmarking and strengthened our ability to compare outcomes across projects. It also supports more meaningful discussions with clients and collaborators by providing clearer and more transparent data.



Moving forward, our focus will be on further integrating embodied carbon considerations into standard design practice across all projects.

#### **Lessons Related to In-House Tools and Workflows**

The broader implementation of embodied carbon analysis in 2025 highlighted both the value and limitations of existing tools.

Key observations include:

- In-house tools and standardized workflows significantly improve efficiency and consistency when applied early in design
- Integration of tools into existing design processes is critical; standalone or parallel workflows tend to limit adoption
- There remains a need for continued refinement of internal tools to better align with project-specific conditions and varying levels of design development

These lessons are informing the ongoing evolution of our internal resources, with a focus on usability, adaptability, and integration with standard project delivery processes.

#### **Client Communication and Engagement**

As embodied carbon considerations became more embedded in our work, the importance of clear and effective client communication became increasingly evident.

Through expanded application in 2025, we observed that:

- Early engagement with clients leads to more meaningful incorporation of embodied carbon targets
- Clear presentation of comparative design options enhances decision-making and supports acceptance of low-carbon solutions
- Alignment between client objectives, architectural intent, and structural strategies is essential to achieving measurable reductions

These insights reinforce the importance of positioning embodied carbon not only as a technical metric, but as a design and value-driven consideration that informs project outcomes.

#### **Looking Forward**

The transition from targeted implementation in 2024 to broader adoption in 2025 represents an important step in the maturation of NORR's embodied carbon program.

Moving forward, our focus will be on:

- Further integrating embodied carbon considerations into standard design practice across all projects
- Continuing to refine tools, workflows, and reporting methodologies
- Strengthening collaboration across disciplines and with external stakeholders
- Building on the lessons learned to achieve measurable and sustained reductions in embodied carbon

This evolution reflects our commitment to not only meeting the objectives of the SE 2050 Commitment Program, but to embedding low-carbon design as a fundamental component of our structural engineering practice.

# Final Remarks

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This report represents our fourth annual Embodied Carbon Action Plan as inspired by the SE 2050 Commitment Program as well as our dedication to environmental stewardship.

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The framework presented in this report outlines the company's vision, goals, strategies and immediate tasks to implement the means to create a reduction in embodied carbon through structural design. Action items are divided into education & knowledge sharing, embodied carbon reduction, reporting, and advocacy subtasks which will form the structure for our embodied carbon response for the next 26 years and beyond. This Action Plan will enable us to emerge as a front runner in sustainable structural

engineering practice through internal embodied carbon education, advanced carbon-conscious design procedures, superior sustainability coordination with clients and a uniquely inspired employee environment. Together, these components will develop continually in the future and ultimately contribute to achieving net zero structural engineering practices by 2050. We are committed to reducing embodied carbon in our projects and incorporating this important metric across all of our actions.

**NORR**

Integrated Thinking.  
Inspired Design.

