

SE2050 Embodied Carbon Action Plan

2026

schlaich bergemann partner

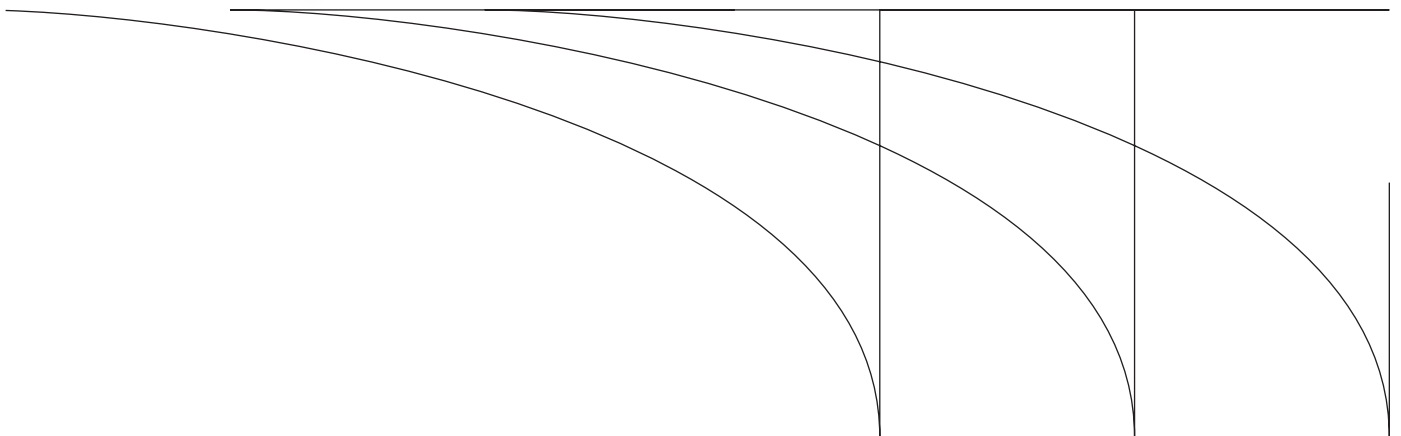


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1. Introduction

schlaich bergemann partner (sbp) in North America is proud to be a part of SE 2050. We look forward to continuing to better understand and further reduce the embodied carbon emissions of our projects to net zero by 2050. We've got some work to do!

Our internal cross-office international sustainability team has been focused on embodied carbon since 2019, led by our Stuttgart and New York offices. sbp in North America is based in New York with 15-20 staff, with a smaller presence in Los Angeles. The two offices work as an integrated unit. Currently our reporting covers our work from the New York office only. We look forward to reporting independently from both offices when appropriate in future years.

1.1 Embodied Carbon Champion



Dan Bergsagel, CEng MICE MASCE LEED AP
Sustainability Lead
148 Madison Avenue, 15th floor
New York NY 10016

<d.bergsagel@sbp.de>
tel +1 646-710-3977
<https://www.linkedin.com/in/dan-bergsagel/>

2. Education

sbp provides training, resources and support to our structural engineering team through the inter-office sustainability team, led by our New York office.

The sustainability team is structured around three groups:

- Office representation: a minimum of one engineer from each major office acts as the sustainability point-person. All the offices meet monthly to discuss projects, questions and updates from different global regions.
- Material representation: three engineers act as point-person for timber, steel and concrete embodied carbon material questions. The material team update internal resources, prepare trainings, and respond to project-specific questions.
- Operational reporting: one staff member from each major office is responsible for collecting office operation information on energy usage, commuting, business travel, etc. for aggregation into our internal annual report and operation review.



sbp sustainability representatives

2. Education

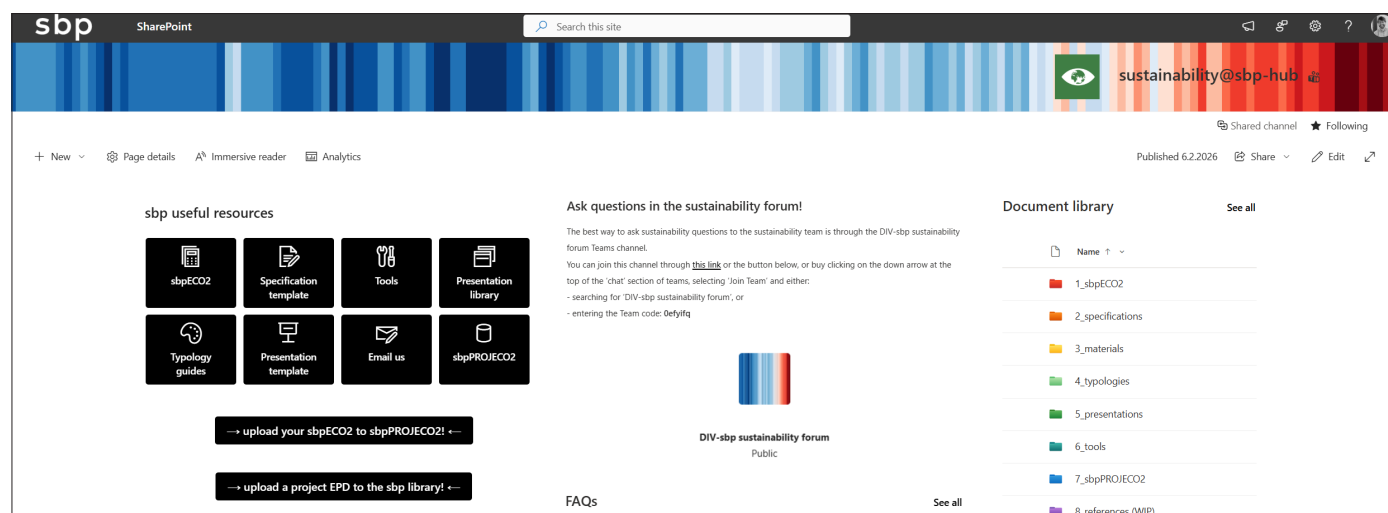
The sustainability team provides:

- **Monthly all-office presentations** on general sustainability topics. In 2025-26 these included topics such as: a project case study looking at the embodied carbon impact of different roofing materials on stadia, and the emissions associated with the steel supply chain in India.
- **Quarterly in-depth training sessions** on specific topics. In 2025-26 these included revisions to our in-house embodied carbon calculation tool, and standards for reused structural elements.
- **Annual new staff onboarding sessions**, including an introduction to embodied carbon and the role of the structural engineer in sustainability on projects.
- **Annual all-office presentation** updating on sustainability team strategy, priorities and showcasing recent developments in tools and projects.
- **On-demand recorded training webinars** on how to use our in-house embodied carbon calculation spreadsheet and specification templates.
- **Up-to-date intranet sustainability page** with quick links to internal resources and calculators, past presentations, external resources, and relevant news updates.

		J	F	M	A	M	J	J	A	S	O	N	D
Monthly office representative meetings	offices	■	■	■	■	■	■	■	■	■	■	■	■
Monthly material representative meetings	materials	■	■	■	■	■	■	■	■	■	■	■	■
Quarterly round table meetings	roundtables			■			■			■			■
Monthly all-office presentations	teepause	■	■	■	■	■	■	■	■	■	■	■	■
Monthly NYC and LA office presentations	tea break	■	■	■	■	■	■	■	■	■	■	■	■
Quarterly in-depth training	academy			■			■			■			■
Annual all-office update	INFO										■		
Annual new staff onboarding	onboarding				■								
New staff on-arrival embodied carbon task	sbpECO2 task		■		■		■		■		■		■
On-demand training and presentation recordings	recordings	■	■	■	■	■	■	■	■	■	■	■	■
Up-to-date sustainability intranet page	intranet	■	■	■	■	■	■	■	■	■	■	■	■

sbp education schedule

2. Education



sbp intranet sustainability page

Two new education mechanisms have been added in 2025-26:

- **Quarterly round table meetings** that bring the three sustainability teams (offices, materials, operations) together to discuss overall strategy. These round table meetings are also an opportunity for other interested engineers across the offices to join a meeting and stay abreast of developments and plans.
- **On-arrival new staff embodied carbon tasks** where all new interns and engineers across sbp's offices are asked to learn how to use our internal embodied carbon calculator by calculating the embodied carbon of a completed sbp project that is not yet in our database. This new tasks is exciting as it achieves three important targets:
 - Ensuring that all new staff are familiar with the embodied carbon tools and calculation methodology
 - Connecting new staff with the sustainability team early
 - Building our internal embodied carbon database across historic projects, locations and typologies.

In North America in particular, our ECC provides custom internal training on using our internal embodied carbon calculation tool, and supports the teams with carbon impact factor information, interpretation and drawing conclusions for project next steps. This is now supported by:

- **Monthly NY and LA office presentations** on sustainability topics specific to North America, such as local material specification information or cross-project similarities and opportunities.

2. Education

2.1 Electives

	Elective options (min. 1, recommended 4)	Description / Reference
✓	Have one representative of your firm (any employee) attend quarterly external education programs (e.g. webinar, workshop) provided by SE 2050, Carbon Leadership Forum (CLF), or other embodied carbon resources	ECC participates in monthly SEI Sustainability Committee meetings and quarterly IStructE Sustainability Panel meetings
✓	Share the SE 2050 library of resources with technical staff	Links published on sustainability intranet
	Share embodied carbon reduction strategies with your firm as outlined in Top 10 Carbon Reducing Actions for Structural Engineers document produced by SE 2050	
	Nominate a minimum of (1) employee per office to participate in a CLF Community Hub	
	Provide narrative outlining plans for minimum (2) firm-wide presentations per year on the topic of embodied carbon	
	Present the document, "How to measure and report embodied carbon" to all technical staff	
	Attend a presentation or demo of an LCA-based tool used to calculate embodied carbon	
✓	Initiate an embodied carbon interest group within your firm and provide a narrative of their goals	Goals of the sustainability team to promote and support embodied carbon calculations for all projects at each design stage
✓	Provide a narrative of how the Embodied Carbon Reduction Champion will engage embodied carbon reduction at each office (intended for multi-office firms)	ECC reviews all new projects that enter all regional offices and engages the local office representative to start a conversation with the project leaders about embodied carbon calculations and reductions
	Other actions	

3. Advocacy

sbp in North America are involved in a range of industry movements that support further development in embodied carbon:

- **SEI Sustainability Committee:** sbp's ECC is a member of the Structural Engineering Institute's Sustainability Committee and Steering Committee and chairs the Circular Economy Working Group (CE WG). The CE WG continues to add to their case study database (hosted on the SE 2050 website).
- **Cornell University Circular Construction Lab:** sbp has an ongoing research partnership with the Circular Construction Lab exploring material reuse with the goal of reducing the embodied carbon impact of new construction. This partnership continues to foster participation in industry presentations and conferences and supporting industry and academia publications.
- **IStructE Sustainability Panel:** sbp's ECC is also a member of the IStructE Sustainability Panel, acting as a liaison and information conduit between the USA and UK on structural engineering sustainability.
- **Infra2050 (Bridges WG):** sbp supported the development of an industry-wide embodied carbon bridge case study database as part of the Infra2050 initiative, and continues to be involved as an advisor.



Material testing at Cornell's Circular Construction Lab

3. Advocacy

3.1 Electives

	Elective options (min. 0, recommended 2)	Description / Reference
✓	Share your commitment to SE 2050 on your company website	Included on our 'sustainable design' page
✓	Give an external presentation on embodied carbon that demonstrates a project success or lessons learned (CLF local hub!)	Presentations at NCSEA and IABSE conferences on the embodied carbon potential of reuse of bridges and stadia
✓	Discuss with the Owner / Client the option of requiring that some of the structural materials come with facility-specific or product-specific EPDs	EPD requirements are included in our default specifications, and discussed with our client and design team at the start of the tender document preparation process.
	Share education opportunities with clients	
✓	Provide a narrative of how you have encouraged industry and policy change incentivizing availability of low-carbon and carbon sequestration materials	ECC is a co-founder and member of RECLAIM NYC, promoting the adoption of policy change in NYC for reused materials and deconstruction
	Start an embodied carbon community of practice or mentorship program in your office	
	Mentor a firm new to the embodied carbon space	
	Other actions	

4. Reduction

sbp works across a number of project typologies in different international regions. This makes tracking and comparing project embodied carbon challenging. We have implemented a set of internal guides for project typologies that follow a reduction strategy, similar to other general systems (such as the IStructE SCORS system). We target a 50% reduction in embodied carbon for estimated A-C emissions by 2030 from a 2020 baseline across our average projects.

4.1 Strategy

Due to the variation in typologies and geographies, we are continuing to improve the confidence which we set benchmarks for embodied carbon and assess an average performance. Our proposed internal strategy will track estimated embodied carbon emissions by design stage, scope, typology and geography for new projects, and prepare a plan to expand our database of current and completed work. We hope to use this to develop more refined benchmarks for sbp's specific project types.

sbp updated our specification template to incorporate embodied carbon reduction information for steel, concrete and wood products based on a suite of project-type and location-specific options. This has helped support the wider office in successfully proposing tailored specifications for project teams.



The environmental impact of a structure has become an indispensable design driver in our daily work

4. Reduction

4.2 Electives

	Elective options (min. 1, recommended 4)	Description / Reference
	Incorporate data visualization into your ECAP. How are you looking at data to make informed design decisions and communicate design options to your client?	
	Provide a project case study in your ECAP that captures a reduction of embodied carbon or some lessons learnt	
✓	Create a project-specific embodied carbon reduction plan	ECC developed a detailed specification plan for a regional project with an engaged client
✓	Complete a system embodied carbon design comparison study during the project concept phase	Default approach for all suitable projects in North America
✓	Calculate your firm average benchmark for embodied carbon	Preliminary firm benchmarks have been calculated. These will be revised once additional internal data gathering is complete (TBC Q1 2027)
✓	Update your specifications and incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements	Specification revisions incorporating wood completed Q1 2026
	Collaborate with your concrete supplier to reduce embodied carbon in a mix design	
	Work with a contractor during material procurement to meet an embodied carbon performance criteria on at least 1 project	
	Have an Environmental Produce Declaration (EPD) created as a result of a project	
✓	Incorporate biogenic materials on at least one project annually	In 2025-26 we have increasingly found opportunities for incorporating mass timber as part of timber concrete composite bridge proposals and long-span roofs
✓	Provide a narrative of how circular economy has been used on your projects. Incorporate reuse or design for deconstruction into at least 1 project	Our work on the Montreal Olympic Stadium roof deconstruction and reuse project continues the opportunity to incorporate reuse
	Quantify construction waste reduction on a project and the impact to embodied carbon	
	Integrate embodied carbon mitigation strategies in your General Notes	
	Other actions	

5. Reporting

At sbp we measure and report embodied carbon data on projects using our in-house embodied carbon calculation spreadsheet. Data is reviewed on an A1-A5 basis, as well as an A-C (+D +biogenic) basis. These calculations are initiated by both the individual project team and through the solicitation of the sustainability team. Our goal is for all structural engineers to be comfortable leading the completion of these calculations for their projects. Until this point, the sustainability team members are available to provide direct project support.

As part of their design workflow, all sbp project teams are requested to submit their completed calculations to the sustainability team for aggregation in our developing internal database. This has been supplemented by the inclusion of an embodied carbon onboarding task for all new interns and engineers.

In 2025-26 sbp:

- Expanded the regions that our tool provides default material values for (welcome Australia!)
- Added more custom material values to our more specific product database. We were notably excited to have EPDs for open spiral strand and full locked cable available from first-movers in the structural steel cables industry Redaelli!

5.1 Database Submissions

sbp has submitted two projects to the database this year:

- Small pavilion within an education campus
- Large cultural building

5.2 Tracking

	2024	2025	2026	2027	2028
North American offices reporting	—	—	NY		
Projects reporting	—	—	2		

5 Reporting

5.3 Electives

	Elective options (min. 0, recommended 1)	Description / Reference
	Submit all projects to the SE 2050 Data-base	
	Meet your target average embodied carbon reduction from the previous year	
✓	Report a greater percentage of projects than the preceding year	Infinite increase in reporting compared to zero in 2025! Yay!
	For a project submitted to the database, ask the Architect or Owner if the project has a carbon budget or if there are established project sustainability goals at the project kickoff meeting	
	Other actions	

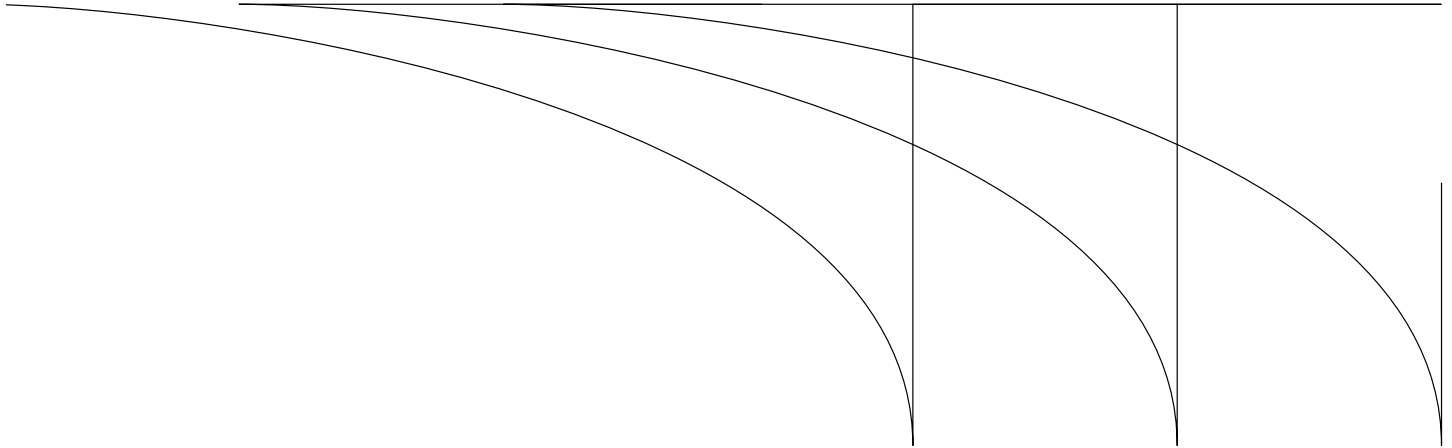
6. Lessons Learned

Education

Our ability to connect with engineers on sustainability topics relies on active communication and participation. In contrast, passive guides and resources are often easily forgotten and require sustainability team representatives to prompt the wider office to use them. We are working to improve this through more informal active communication channels (such as a Teams channel for sustainability questions) that will hopefully lower barriers to accessing information and, by seeing these discussions in a public forum, normalize the asking of sustainability questions in general.

Reduction

In 2025-26 we implemented a simplified 'package-and-send' process for engineers to share completed embodied carbon calculations easily and remove perceived barriers to sharing this data. This has been effective, however there are some differences in submission quantity from groups across the office linked to the involvement of local sustainability team representatives. A solution to this that we plan to pursue may be to ensure that representatives have more uniform coverage across office locations and across project typologies and team sizes.



Schwabstraße 43
70197 Stuttgart
Phone +49 711 6 48 71-0
stuttgart@sbp.de

Brunnenstraße 110c
13355 Berlin
Phone +49 30 8 14 52 83-0
berlin@sbp.de

148 Madison Avenue, 15th floor
New York, NY 10016
Phone +1 212 255 3682
newyork@sbp.de

Rua Afonso Braz 473 cjs.113-114
CEP 04511-011 São Paulo
Phone +55 11 2691 0874
saopaulo@sbp.de

10 Baoqing Road
Room 606, Building #2
Shanghai 200031
Phone +86 21 5423 1251
shanghai@sbp.de

25, rue du Général Foy
75008 Paris
Phone +33 1 44 82 07 95
paris@sbp.de

Calle Alfonso XII
44 Entreplanta
28014 Madrid
Phone +34 661 49 84 44
madrid@sbp.de

1325 Palmetto Street #227
Los Angeles, CA 90013
Phone +1 213 394 7170
losangeles@sbp.de

DIOM Flex – Office No. 6
Al-Zallal Complex
Al Imam Abdulaziz Ibn
Mohammad Ibn Saud St,
Al Bujairi, Diriyah 13712, Riyadh
Phone +49 151258 67131
riyadh@sbp.de