

2026 Embodied Carbon Action Plan



Introduction

HOK is committed to decarbonization and transparency across our building portfolio. We are targeting operational carbon neutrality by 2030, carbon neutrality in refrigerants and landscaping by 2040, and the elimination of embodied carbon in structural systems by 2050. Our holistic approach emphasizes building performance, partnerships and comprehensive life cycle assessments (LCAs).

HOK has been a signatory firm since SE 2050's inception and has been developing yearly Embodied Carbon Action Plans to show progress, prepare for the following year and share lessons learned.

Pursuant to the firm's decarbonization commitments, HOK mandates LCAs for most new build projects. The LCA data gives a snapshot of how the buildings we design are performing; it also guides the selection of optimal structural systems and project specifications, driving the market towards products and materials that reduce embodied carbon in the built environment.

Since there are currently no industry-accepted benchmark values for structural embodied carbon intensities, HOK has developed a firmwide benchmark by conducting LCAs on several projects. This was crucial to establish an average value from which to target reductions. A structural LCA dashboard provides detailed data including global warming potential (GWP) ranges by market sector and project type.

Beginning in 2024, HOK set a target of 7% annual reduction in carbon intensity against this internal benchmark, working towards 50% reduction by 2030 and 100% reduction by 2050.

In 2026, we will continue to educate staff on approachable and pragmatic reduction strategies. While we will continue best practices for specifying low-carbon materials, we also plan to leverage LCAs as drivers of design optimization. To support this strategy, we plan to require multiple embodied carbon assessments to track changes as designs evolve.

HOK'S REDUCTION APPROACH



Reuse existing structures and materials where feasible



Evaluate carbon in structural system selection



Optimize selected system



Specify low carbon materials



Establish baseline and set reduction target (for new construction)



Run LCAs with test values to ensure reduction targets



Western State Hospital Admin Building
Lakewood, Washington

Education

Prioritizing embodied carbon reductions in structural systems requires a shift from typical practice. HOK's internal education program highlights the urgency of reduction efforts and provides guidance for structural engineers on how to achieve reduction targets on their projects. This program also targets HOK's architectural practice and other engineering disciplines.

PILLAR REQUIREMENTS

The HOK structural group will continue to give firmwide presentations including at least two encompassing an introduction to embodied carbon, the firm's progress towards SE 2050, reduction strategies and general industry-wide updates.

So far, these presentations have been given to groups across all offices and time zones. Groups include HOK's core boards, market-based interdisciplinary groups, individual disciplines including structural engineering, project architects and project managers.

In 2026, our education goals include:

- » Continue to provide trainings with updated trends and information relevant to embodied carbon reductions
- » Develop a higher-level training on reduction strategies so designers can better understand how their decisions affect emissions
- » Creating a "101" learning module to incorporate into the standard onboarding process for newly hired design professionals

LESSONS LEARNED

Education is ever-evolving. Over the past few years, HOK has given several internal presentations to educate staff of all tenure levels on the benefits of quantifying embodied carbon on all projects. As HOK continues to expand its staff and presence across the country, there are fundamental concepts and progress that need to be continuously shared. We are fine-tuning a cadence of trainings that is relevant and timely – but not overly repetitive.

In the future, while we will continue to educate on the value of quantification, we will emphasize the importance of real reductions and provide designers with actionable and effective strategies for their projects.

We have realized that continued progress towards SE 2050 will require more than business as usual. In 2026, we will be rolling out an updated policy requiring whole building projects greater than 20,000 sq. ft. to conduct a structural embodied carbon assessment at each major design phase to get a comparative LCA. This will help us to better track how design decisions impact emissions.



New Corporate Headquarters
Miami, Florida

Education, continued

RECOMMENDED ELECTIVES

Train all of your firm's structural engineers on the core concepts and skills required to measure, reduce, and report embodied carbon.

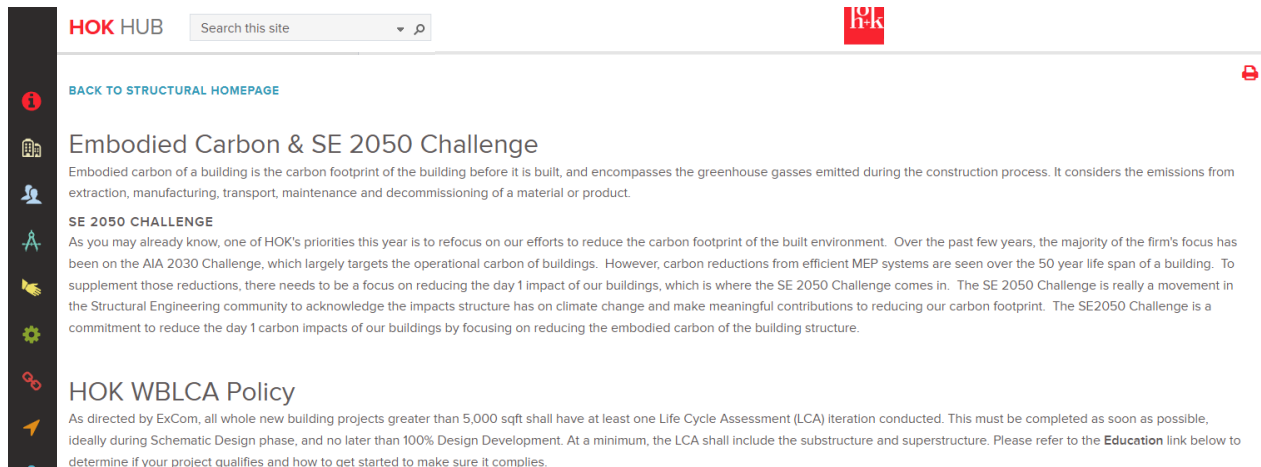
HOK has given multiple trainings teaching structural engineers why LCAs matter, how to conduct them and understand the results. We have developed an internal "how-to" guide and created a repository of video recordings from training sessions. These resources are available to all employees. The guide is ever evolving and will be updated as needed, with an annual comprehensive review and update at minimum.

HOK has a dedicated intranet section for embodied carbon and SE 2050. The education section has articles and videos covering foundational concepts. In 2026, we are looking to provide more focused trainings for a wider range of staff.

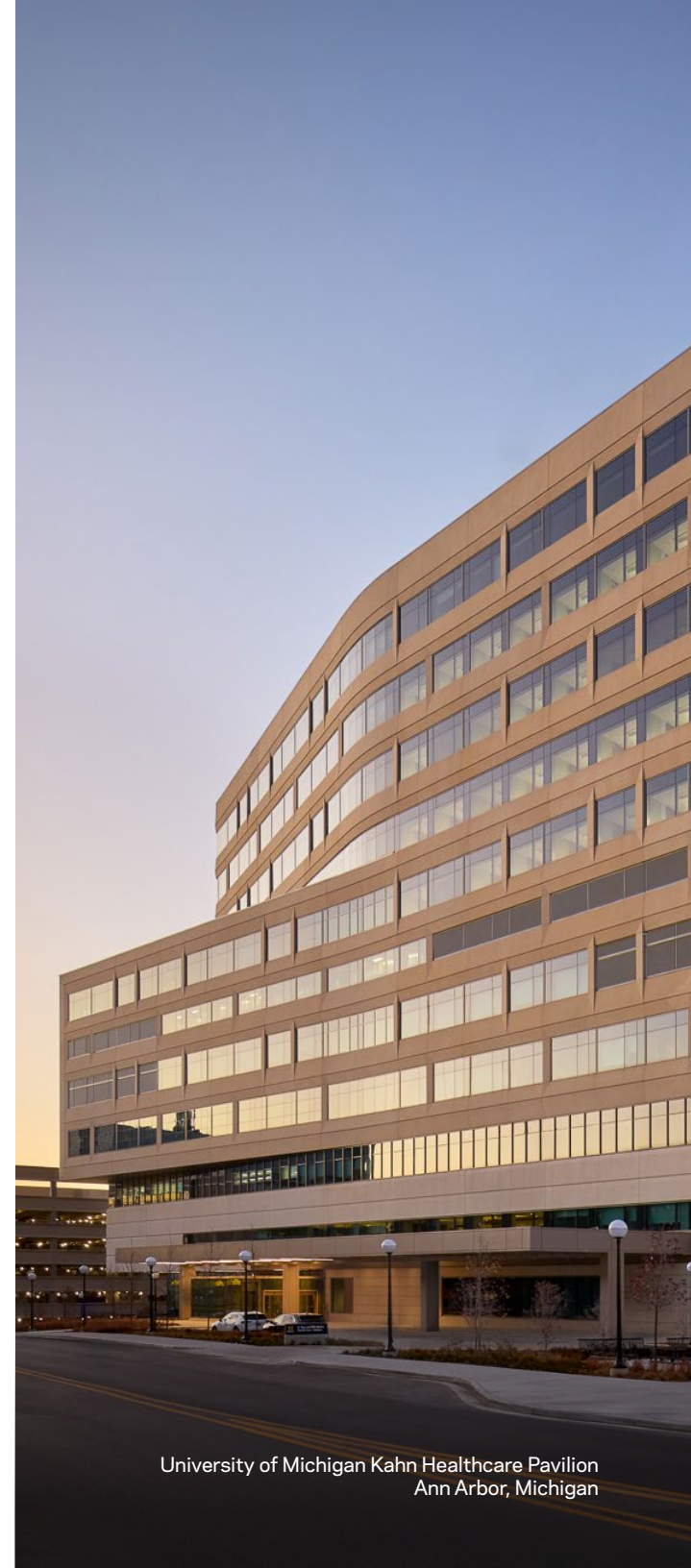
Engage with a Carbon Leadership Forum (CLF) regional hub

HOK staff in our New York, Houston, and San Francisco offices participate in the CLF Community and are members of regional hubs. Jaclyn Lee, a structural engineer in San Francisco and a champion of the SE 2050 initiative, is actively engaged in external education programs provided through NCSEA, SEAOC, SE 2050, CLF and others.

One Click LCA is the primary tool that HOK uses to conduct LCAs and calculate embodied carbon. We encourage attendance of the tailored onboarding sessions included in our software license. On an annual basis, we plan to have at least one employee attend a presentation or demo of an LCA-based embodied carbon calculation tool. At least one employee will attend a presentation specifically on embodied carbon reduction efforts; this might cover LCA tools, reduction strategies or industry trends.



Screenshot from HOK's intranet showing embodied carbon and SE 2050 homepage



Reporting

Upon signing the SE 2050 Challenge, HOK enacted a policy requiring new projects to have a structural LCA. While firmwide GWP data allowed us to establish an average value from which to target carbon reductions, it did not support measuring or tracking those reductions.

An updated policy requiring multiple embodied carbon assessments throughout the phases of a project will support reductions by giving teams insight into how design decisions impact GWP. The intent is to better track GWP and the percent reductions by comparing a project specific baseline to the final design.

HOK will also be working to align the updated LCA policy's scope with the embodied carbon assessment tiers in ASCE's recently published *Prestandard for Assessing the Embodied Carbon of Structural Systems for Buildings*. The intent is to ensure consistency in the assessments and be able to better compare results between projects with similar scopes.

HOK'S LCA APPROACH

To conduct an LCA, we extract material quantities from Revit models through a hybrid method that uses the One Click LCA Revit plug-in and Revit schedules. Environmental Product Declarations (EPDs) that reflect regional industry-wide data are preferred when choosing baseline materials. EPDs that represent national industry-wide data are used when regional data is not available.

PILLAR REQUIREMENTS

Since 2021, HOK has submitted nearly 50 projects to SE 2050, representing work across 13 states and nine different primary building use types. We will continue to submit at least five projects annually.

All project LCA data and emissions data are fed into a user-friendly dashboard, available firmwide through HOK's intranet, that includes GWP ranges by market sector and project type. We currently have nearly 100 projects with GWP intensity data. As the dashboard dataset grows, it will help identify significant trends and variables affecting project emissions. Benchmark values will help design teams make appropriate design decisions and set informed reduction targets.

The evolving requirements of data reporting to various entities present a challenge for streamlined reporting. We intend to continue providing meaningful data while remaining focused on deep carbon reductions.

LESSONS LEARNED

We have learned that data collection, while valuable for benchmarking, does not necessarily translate to low-carbon design choices. As described earlier in this section, an updated and enhanced LCA policy will better align with the intent of reducing carbon.

RECOMMENDED ELECTIVES

For multi-office firms, describe how each office is measuring and reporting embodied carbon.

We are working to achieve consistency with material mapping of industry-wide EPDs so that we can accurately compare results to appropriate benchmarks. We are developing a process to perform assessments that align with the ASCE *Prestandard for Assessing the Embodied Carbon of Structural Systems for Buildings*.

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.

While a larger dataset is needed to create categorical benchmarks, the structural LCA dashboard described earlier in this section has helped us better understand changes to firmwide averages, realistic GWP baseline ranges and reasonable target reductions.



Reduction Strategies

Identifying strategies that can effectively and efficiently reduce the embodied carbon content of building structures is critical in our efforts to mitigate climate change. Many strategies can and should be implemented today, while others can be considered in the future.

HOK is exploring all avenues to reduce embodied carbon on projects. We actively engage with clients and architects early on in projects to highlight our reduction strategy and plan a path towards reduction targets.

PILLAR REQUIREMENTS

Having found an internal embodied carbon benchmark of 295 kgCO₂e/m², HOK is now measuring all future reductions from this embodied carbon benchmark. Our goal is to reach a 50% reduction by 2030 by means of a 7% annual reduction starting in 2024. The reduction percentage is currently targeted based on the project's expected construction start date.

Our strategy splits reductions into two categories and focuses on each separately: low-carbon structural material specification and engineering design optimization. In 2026, HOK will focus on the latter to drive deep reductions through efficient and thoughtful designs that minimize structural materials.

We also plan to finalize our low embodied material specifications for masonry and timber, improve the process of cataloging and tracking design decisions, and form material working groups to evaluate emerging technologies.

LESSONS LEARNED

Over the past year, we selected a few projects to closely monitor the effects of design decisions on embodied carbon. At the start of the project, we identified possible strategies that were design specific and phases during which the strategies could be studied. We focused on strategies that were realistic and could be implemented in a timely manner.

Through this effort, we have realized that the process is not as streamlined as we had envisioned. Mid-design changes to project scale, scope, programming and timeline can make it difficult to identify the opportune moments to conduct carbon assessments. Early phase studies often provide incomplete information, while later assessments may have limited ability to alter design schemes that are already well underway. We aim to better balance conducting studies early enough to be impactful but far enough along in design to accurately represent the project as it will be built.

HOK has developed a simple worksheet that structural teams can use to determine feasible reduction strategies at the start of any project. It prompts teams to identify the phase during which a strategy will be studied and who will champion the effort. The worksheet also helps document and organize the strategies and studies that can occur throughout the design process. An excerpt of potential strategies from the worksheet's Early Design Decisions section is shown at right.

EMBODIED CARBON REDUCTION WORKSHEET: EARLY DESIGN DECISIONS	
STRATEGY	DETAILS
Site location and substructure	Limit basement size and depth
Ground floor advantage	Locate heavy or vibration-sensitive program at grade
Floor bay studies	Study bay size impacts, maintain regular spacing
Parametric design	Use HOK parametric tools to study carbon impacts
Smart material selection	Consider wood or hybrid material systems
Floor systems	Consider beams composite with floor and hybrid systems
Coordination	Avoid overdesign or gymnastics, minimize field clashes
Offsite construction	Consider prefabrication or modular construction to reduce waste
Non-structural materials	Ask architect to minimize non-structural concrete
Foundation system selection	Request multiple foundation schemes from geotechnical engineer, consider embodied carbon in system selection

Reduction Strategies, *continued*

RECOMMENDED ELECTIVES

Calculate your firm's average benchmark for embodied carbon.

HOK's embodied carbon benchmark for structure only (sub and superstructure) is 295 kgCO₂e/m². This was determined from 50 projects of various structural systems, project locations, and markets.

HOK is still tracking future updates to this benchmark and will work towards future revisions. The two priorities identified are:

- 1. Breaking out building use specific benchmarks:**
Similar to how AIA 2030 treats predicted energy use intensity (pEUI), we acknowledge that different building uses have inherently higher or lower embodied carbon intensities. We currently do not have statistically significant data for all building uses.
- 2. Gathering other disciplines' data:**
As a multidisciplinary firm, we have the opportunity to collate internal data from additional disciplines. We will leverage our updated sustainability policy, which includes directives for the MEP engineering and facade engineering groups, to create a more complete picture of embodied carbon on our projects. HOK's structural engineering group is providing guidance on these efforts based on involvement in SE 2050.

Update your specifications to incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements.

HOK has incorporated embodied carbon limits into our master specifications and template general notes sheets that are adjusted on a project-by-project basis. We split this language between the specifications and general notes to emphasize their importance and ensure they receive contractor attention. Along with the performance criteria, the carbon requirements occur in the concrete mix design schedule and in the steel material table.

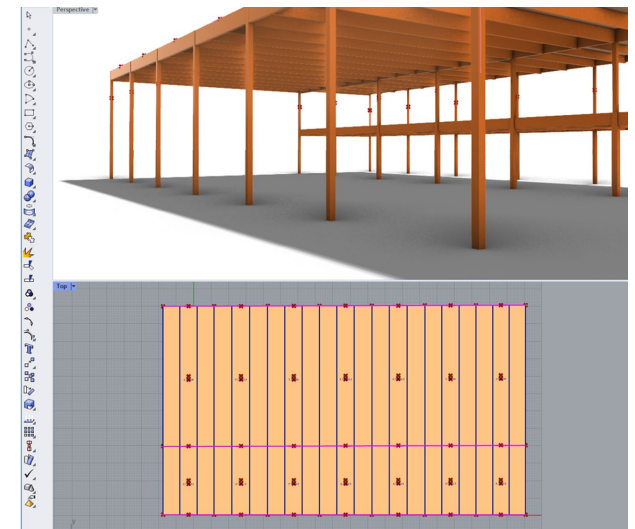
Under the submittal requirements subsection of our specifications, we list requirements for material tracking and information needed to run whole building life cycle assessments (WBLCA) such as EPD requirements and a bill of materials. In the products subsection, we reference the maximum embodied carbon criteria on our general notes and provide alternate compliance paths.

We also recognize that the reality of material procurement is different for each major structural material. HOK has developed guidelines and a strategy to specify low embodied carbon materials for cast-in-place concrete and structural steel. We are actively working on a hybrid approach towards reinforced masonry with a trial run this year. We are also in the process of developing specifications for mass timber products.

Propose other embodied carbon reduction strategies and describe their value.

HOK has developed a planning and visualization tool for mass timber structures that enables designers without engineering backgrounds to independently perform high level studies for this low-carbon structural system during early design.

This tool integrates with architectural workflows to provide immediate feedback on structural sizing for CLT floors, glulam beams, and glulam columns based on basic building inputs. This levels the playing field between mass timber and traditional structural systems, allowing the project teams to make budget conscious decisions. Members are sized based on input geometry, occupancy, and construction type.



HOK's mass timber tool allows all backend design and loading assumptions to be tailored for individual projects.

Advocacy

Continual advocacy and thought leadership of embodied carbon measurement and reduction is an integral part of driving proactive change within the industry. It is important to share case studies, successes and lessons learned with the design community, clients and the broader public.

HOK's strategy for advocacy and thought leadership involves sharing our findings with local project teams and clients, including public agencies, public forums through Carbon Leadership Forum (CLF) and SE 2050, and contributing public feedback to proposed policies, codes and green building rating systems.

We are committed to change beyond voluntary thresholds, recognizing that buildings that will open in 2030 and beyond are already being designed today.

PILLAR REQUIREMENTS

HOK has met the initial requirement of publicly announcing our commitment to SE2050 since we joined in 2020. We have worked with material production companies to better understand the supply chain and its effects on reducing embodied carbon emissions.

In 2025, HOK gave presentations at the SE 2050 Summit, the Net Zero Conference and Greenbuild. For 2026, we have submitted abstracts on decarbonization topics to several conferences.

LESSONS LEARNED

Participation in industry events like conferences continues to prove crucial for staying apprised of best practices. We have also learned that there are very few unique challenges: our peer firms are encountering and working through many of the same issues that we are.

RECOMMENDED ELECTIVES

Give an external presentation on embodied carbon that demonstrates a project success.

HOK gave a presentation at the Net Zero Conference covering the decarbonization of airports.

Propose alternative methods for advocacy and describe their value.

HOK provided data to CLF for their California-specific study and their benchmark v2.0 study, both of which have since been published. HOK continues to contribute data to industry organizations like the California Air Resource Board (CARB) to help make sense of building emissions and benchmark data.

HOK is part of a subcommittee of the ACI 323 Low Carbon Concrete code that will outline embodied carbon assessments as it relates to low carbon concrete.



In October 2025, a multidisciplinary group including HOK engineers and sustainable design specialists presented on airport decarbonization at the Net Zero Conference.



HOK was acknowledged in SE 2050's first annual Recognition Program Awards, winning Best in Reporting. HOK engineers then participated in a Greenbuild panel discussion with other Recognition Program award winners.

Comprehensive Decarbonization

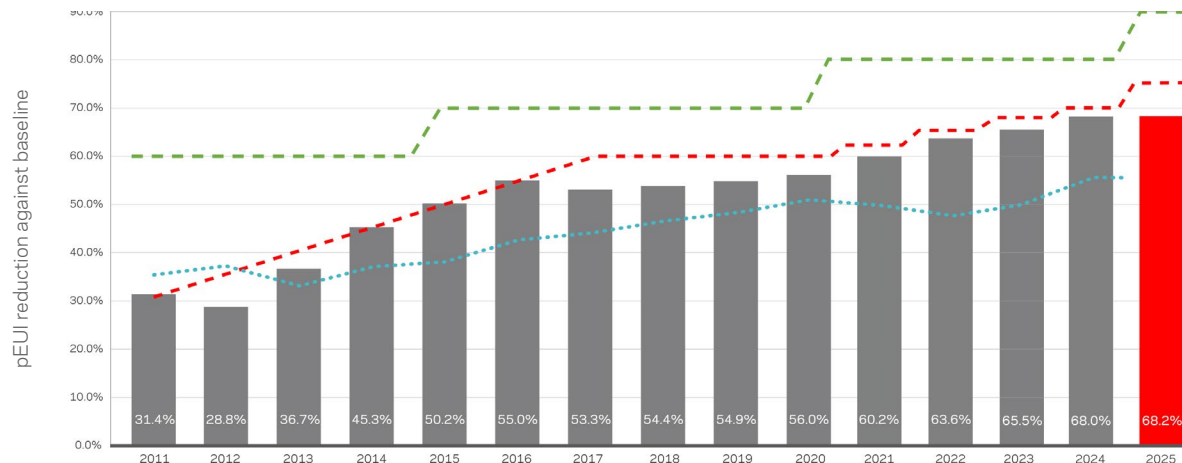
As an interdisciplinary design firm, HOK has a holistic approach to achieving low-carbon design outcomes across all markets. In addition to SE 2050, we are a signatory firm to several other industry initiatives.

HOK was one of the first design firms to sign on to the **AIA 2030** commitment, which targets carbon neutrality for all new buildings, developments and major renovations by 2030. We are contributing embodied carbon data as this challenge expands from its original focus on energy use intensity and operational carbon.

More recently, HOK has joined the **MEP 2040** Challenge, an effort to eliminate embodied carbon in mechanical, electrical and plumbing (MEP) building systems; and **ASLA 2040**, which is aiming for zero carbon emissions and increased carbon sequestration in landscape architecture projects.

As a signatory to the **AIA Materials Pledge**, HOK adheres to an aspirational definition of sustainable materials that prioritize human health, climate health, ecosystem health, and social health and equity. HOK also proudly stands as a founding member and sponsor of the Health Product Declaration Collaborative, setting industry standards for disclosing the content and health implications of building products.

HOK has been tracking sustainable materials on all interiors projects firmwide since 2020 through an internal initiative. This project has grown to encompass embodied carbon, green chemistry, sustainable sourcing, circularity, manufacturer social responsibility, and bio-based components.



HOK tracked performance
 HOK target
 AIA target
 AIA average

AIA 2030: In 2025, HOK achieved a 68.2% reduction in predicted energy use intensity (pEUI) for whole building projects, well above the AIA average.



MEP 2040: In 2025, we published our first company plan.



Metropolis Magazine Planet Positive award:
In recognizing HOK as the 2025 Firm of the Year, the judges noted HOK's progress in reducing energy consumption across its design portfolio, lowering embodied carbon in structural systems and leading the interior design profession in sustainability.

