

2022–2023  
Climate Action Report

SOM





SOM Chicago Office  
Chicago, Illinois

**Committed to decarbonizing the built environment, SOM is advancing climate action through design, advocacy, and innovation.**

The Climate Action Group was formed to harness the collective expertise of SOM's interdisciplinary practice in order to develop and promote best practices for a resilient, carbon neutral built environment. By sharing knowledge to develop and implement high-impact and holistic strategies, we are advancing toward our targets for 100 percent of our work in design: net zero operational carbon by 2030, and net zero whole life carbon by 2040.

Last year, in our first Climate Action Report, we outlined the goals we have been working towards to reduce the carbon impact of both our design work and our own operations. We highlighted the people who are leading these efforts, and announced that we had become a carbon-neutral business through emissions reductions and offsets. In the year since, we've announced new firmwide leaders, initiatives, and projects that will push the envelope on sustainability.

Fundamental to our goal is the need to share our ideas across the industry to develop best practices, and we have continued to bring our work in dialogue with other practitioners and, importantly, policymakers at events around the world: at COP27, GreenBuild, and New York Climate Week, to name a few. We've sought to bring decarbonization to the fore through exhibitions—most recently with an installation of Bio-Block, a bio-based alternative to concrete, at the Chicago Architecture Biennial.

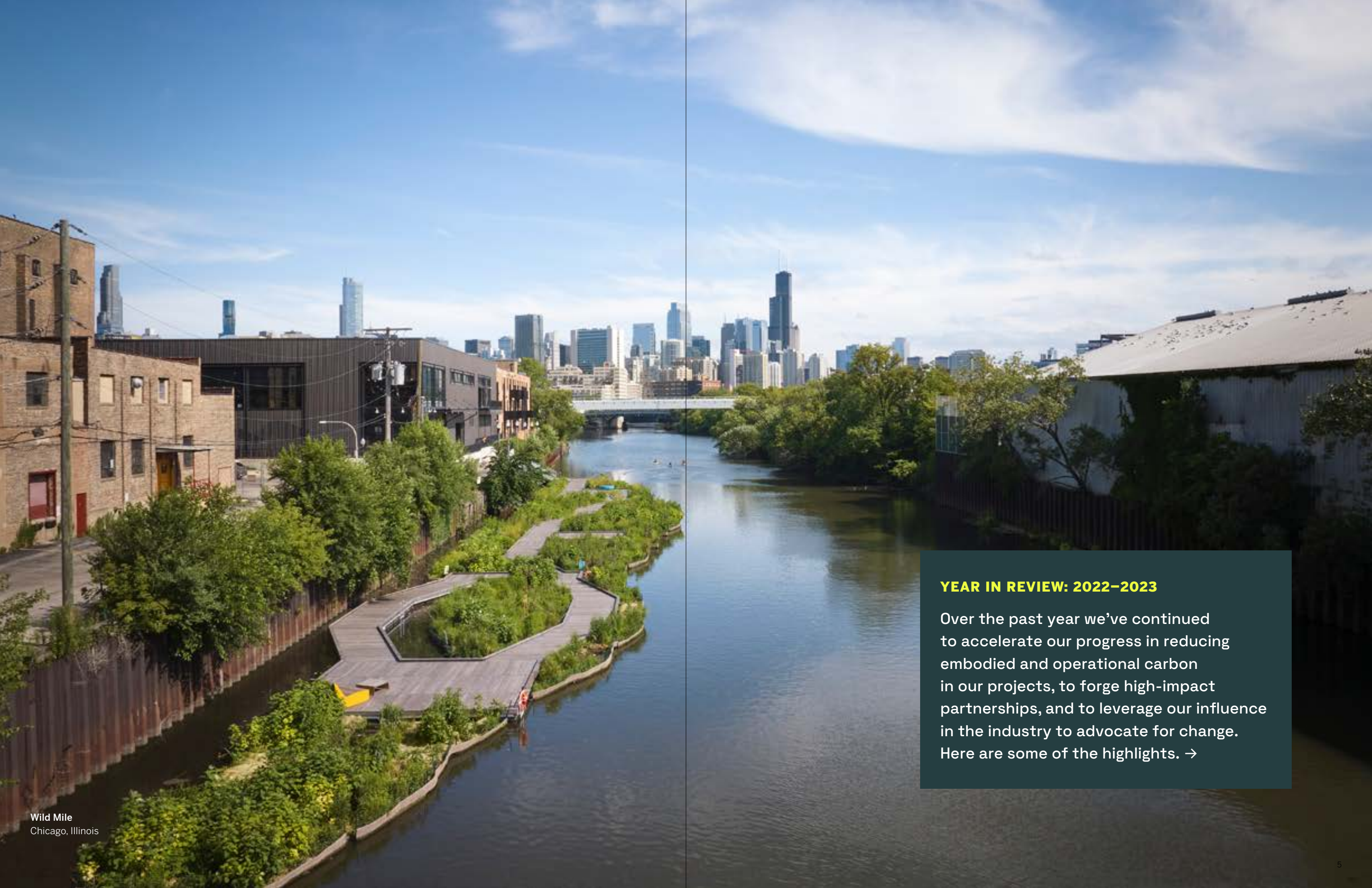
As we continue to see shifts and upheavals related to the Covid-19 pandemic—in the economy, culture, and a broad return to in-person work—this has been a crucial year to take stock of collective progress in our industry. Meaningful climate action starts with clearly defined targets; achieving these targets requires commitments and collaborations across the public and private sector. We are thrilled to have engaged in the Biden-Harris

Administration's effort to aggressively drive zero emissions goals for buildings nationwide. In dialogue with the White House Office of Domestic Climate Policy, together with the AIA and ASHRAE, SOM architects and engineers are helping to establish a national definition for a zero-emissions building—a step that we hope will underpin policy and accelerate change in the U.S. building industry.

In tandem with advocacy, we are developing holistic strategies to advance sustainability beyond our own work. As we continue to better understand the impact of operational and embodied carbon, we've become convinced that our industry needs better carbon instrumentation. This year, we launched a service to measure carbon emissions clearly and comprehensively over the lifetime of a project. Whole Life Carbon Accounting enables developers and building owners to make decisions based on clear data, and to translate carbon targets into measurable outcomes. We have also started to quantify the environmental impact of design choices and material selection based on the EN 15804:2012 standard, which is an important step forward in our mission to take a holistic approach to healthy building materials in our projects and across the industry.

With our 2030 and 2040 net zero benchmarks ever closer on the horizon, we must continue to accelerate our collective actions toward decarbonization. We hope this second report provides a moment to evaluate our progress, share tools and best practices with peers and collaborators, continue important conversations with our clients, and redouble our efforts.

—  
**SOM Climate  
Action Group**



**YEAR IN REVIEW: 2022–2023**

Over the past year we've continued to accelerate our progress in reducing embodied and operational carbon in our projects, to forge high-impact partnerships, and to leverage our influence in the industry to advocate for change. Here are some of the highlights. →

# Highlights from a Year of Climate Action



## Presenting Urban Sequoia at COP27

In November 2022, at COP27, the 2022 UN Climate Change Conference in Sharm El-Sheikh, Egypt, **SOM Design Partner Chris Cooper** presented **Urban Sequoia NOW**—a design for a building that will sequester carbon throughout its lifecycle. Urban Sequoia responds to an urgent need to rethink the design and construction of the built environment. “We recognize the need to alter the trajectory of climate change by going beyond net zero,” said Cooper.

[→ Learn More](#)

## Earth Day keynote at MoMA

In April 2023, Principal **Yasemin Kologlu** presented the annual **Ambasz Institute Earth Day Lecture** for New York’s Museum of Modern Art (MoMA). Drawing attention to how the built environment can become a solution to the climate crisis, Yasemin spoke about Urban Sequoia, SOM’s concept for carbon-absorbing buildings and cities.

[→ Learn More](#)



## Launching a new service

Our team of experienced carbon experts has developed **Whole Life Carbon Accounting**, a system for evaluating and measuring whole life carbon emissions clearly and comprehensively, from the very start of a project and throughout its life cycle. **This standalone service, launched in June 2023**, offers our clients a holistic view of a project’s environmental impact.

[→ Learn More](#)



## UC Merced wins ULI Award of Excellence

Our “living laboratory” design for the University of California, Merced 2020 Campus Expansion has won the prestigious Urban Land Institute’s (ULI) Americas Awards of Excellence 2023, recognized in the Low-Carbon Development category. Upon completion of the SOM-led expansion, **UC Merced became the first carbon neutral public research university in the United States**, and eleven of the project structures have since achieved LEED Platinum certification.

[→ Learn More](#)

## Shaping climate policy at the White House

Together with the American Institute of Architects (AIA) and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), we are thrilled to be engaged in the Biden-Harris Administration’s effort to aggressively drive zero emissions goals for buildings. Most recently, SOM Principal **Luke Leung** visited the **White House Office of Domestic Climate Policy** with the AIA team to discuss establishing a national definition for a zero-emissions building—a step that we hope will underpin high-impact climate policy and accelerate change in the U.S. building industry.

[→ Learn More](#)



## Time100 Climate list includes SOM sustainability leader

SOM Sustainability Director **Mina Hasman** has been included in **TIME100 Climate**, TIME’s inaugural list of 100 of the world’s most influential leaders driving climate action in business. To assemble the list, TIME’s editors and reporters fielded nominations and recommendations from industry leaders and partner organizations, then assessed the candidates on a variety of factors including recency of action, measurable results, and influence.

[→ Learn More](#)

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PRACTICE

# Our Net Zero Benchmarks

We continue to make progress in our pledge to reduce the carbon impact of both our business operations and our design work.

**2022**

SOM became a carbon-neutral business through emissions reductions and carbon offsets.

**2030**

By 2030, we are targeting net zero operational carbon for 100 percent of our active work.

**2040**

By 2040, we are targeting net zero whole life carbon for 100 percent of our active work.

**PRACTICE**

Through high-impact partnerships, we are committed to transforming the building industry



800 Fulton  
Chicago, Illinois

Decarbonizing the built environment requires radical change in the way that buildings are commissioned, designed and constructed. Achieving this goal requires deep collaboration: As we aim to deliver on these goals in our own work, we also continue to forge alliances with organizations and advocacy groups that are pushing for policy and providing resources to accelerate decarbonization.

**SOM has committed to:**

- WorldGBC**  
Net Zero Carbon Buildings Commitment
- AIA2030 Challenge**  
Net Zero Operational Carbon
- Building Health Alliance**
- Science Based Targets Initiative**  
Near-Term Targets
- United Nations Race to Zero Campaign**  
Business Ambition for 1.5 °C (Through the Science Based Targets Initiative)
- COP26 Communiqué**
- Architecture 2030 China Accord**
- Architects Declare UK**

**We plan to exceed by 2040:**

- SE 2050**  
Net Zero Embodied Carbon Structures by 2050
- WorldGBC Bringing Embodied Carbon Upfront**  
Net Zero Embodied Carbon by 2050
- WorldGBC Advancing Net Zero Built Environment**  
Sector Decarbonization by 2050
- MEP 2040**  
Net Zero Whole Life Carbon by 2040

**We are involved in shaping climate policy**

SOM has played a role in developing proposed and current legislation, citywide strategies, and industry standards. Over the past year we have contributed to the following initiatives:

- Resilient America Act;** Advisor
- California State Assembly Bill 2446;** Advisor
- ICC/ASHRAE Standard 240P;** Advisor
- MEP 2040 Standards;** Steering Committee Member
- White House Office of Domestic Climate Policy – National Definition of a Zero Emissions Building;** Advisor with AIA and ASHRAE
- Chicago Decarbonization Strategy;** Reviewer
- Low Embodied Carbon Concrete Leadership Act (LECCLA), signed into law in New York and New Jersey;** Advisor
- City of Yes – NYC for Carbon Neutrality;** Advisor
- NY Climate Forward Carbon Leadership and Community Protection Act;** Advisor
- The Carbon City Property Tax Abatement Act New York City;** Advisor
- RIBA Climate Literacy and Competency Requirements;** Advisor

PRACTICE

# SOM is a Carbon Neutral Business with Offsets



**After implementing a comprehensive range of strategies to reduce operational emissions across all of our offices, SOM purchased carbon offsets for the 6,108 metric tons of carbon attributed to our global business operations in 2022–23.**

In our ongoing work to reduce operational carbon emissions related to our business, this year brought both successes—with energy use reduced even further across our offices—and new challenges as we grapple with the reality of a post-Covid business environment with increased demands for business travel. While our travel-related emissions are at 40 percent of pre-pandemic levels, we recognize the need for strategies to cut back on our highest emissions category and we are implementing an action plan to do so.

Our strategy to cut emissions extends to every area of our business operations. Smart technology in our offices, such as smart lighting systems and automatic blinds, contributes to cutting energy use related to heating and cooling. We have reduced single-use materials and supplies and cut down on printing. And we have implemented rigorous waste reduction and recycling programs in each of our offices.

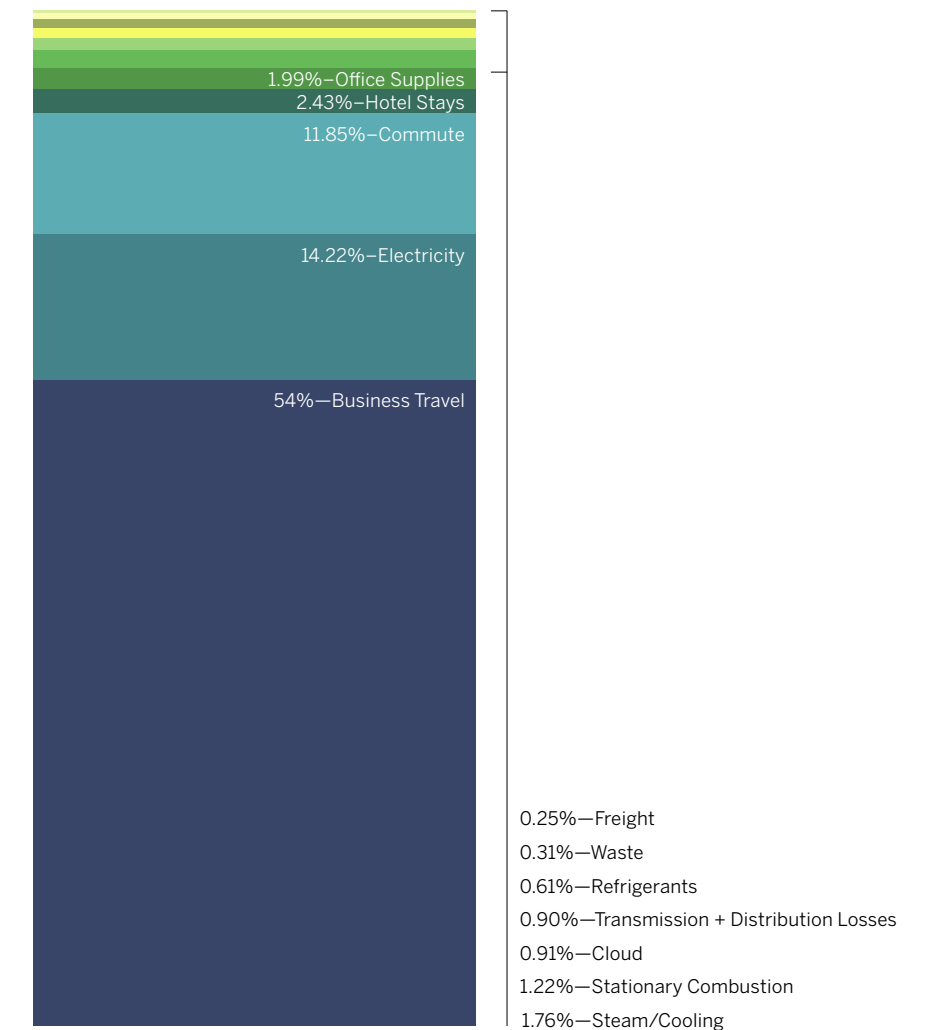
We remain committed to continuing to reduce our firm’s operational emissions, maintaining carbon neutrality through meaningful carbon offsets, and reporting our progress each year.

## Selecting Meaningful Offsets

SOM’s Climate Action Group conducts thorough assessments to choose carbon offsets that are meaningful and verifiable. This year we sourced offsets from two third-party-verified providers: Cool Effect and TerraPass. Committed to transparency, both of these companies work with each project to verify reductions according to leading carbon standards, including Verified Carbon Standard (VCS), Climate Action Reserve, Green-e, Gold Standard, CSA Group, American Carbon Registry, and the United Nations Clean Development Mechanism.

Working with these providers, we chose offsets that align with our values and sustainability commitments. The offsets purchased by SOM in 2023 include offsets for reforestation and forest management in Mexico, and offsets for hydrofluorocarbon (HFC) refrigerant reclamation.

## Emissions in Business Operations, June 2022–June 2023





**PRACTICE**

# Roadmap to Net Zero Operational Carbon



Manhattan Loft Gardens  
London, UK

In line with our pledge to meet the AIA 2030 Commitment, we are targeting net zero operational energy in all of our future projects by 2023.

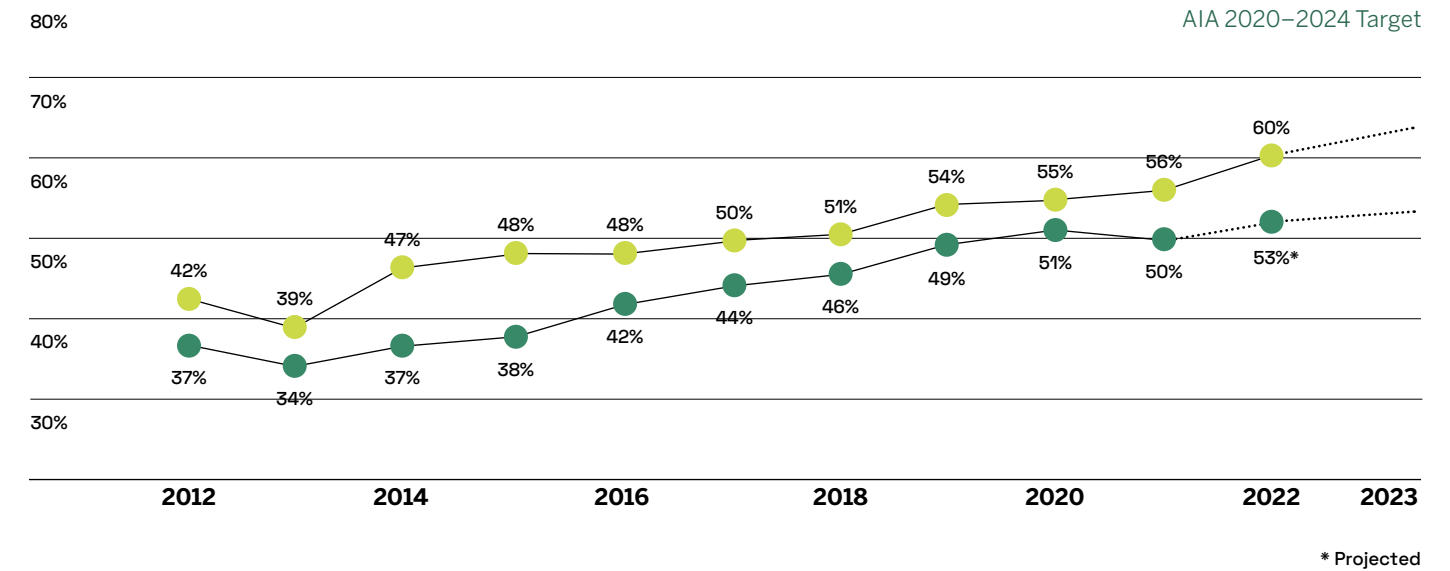
Consistently and accurately calculating the carbon impact of our design work is an essential step toward achieving our net zero goals. This year we launched the Carbon Loop Dashboard, an online platform that monitors and displays our progress in producing these calculations. As of July 2023, we have calculated operational carbon for 100 percent of our active design projects.

Monitoring this data in real time is just a starting point. With a series of upskilling initiatives across the firm, together with in-house design guides and tools, we are equipping all SOM staff with the knowledge and resources to deliver net-zero-carbon projects.

## Toward 2030 Net Zero Energy Goal

● AIA 2030 Commitment Average ● SOM

Average predicted performance of all SOM projects, 2012 to present



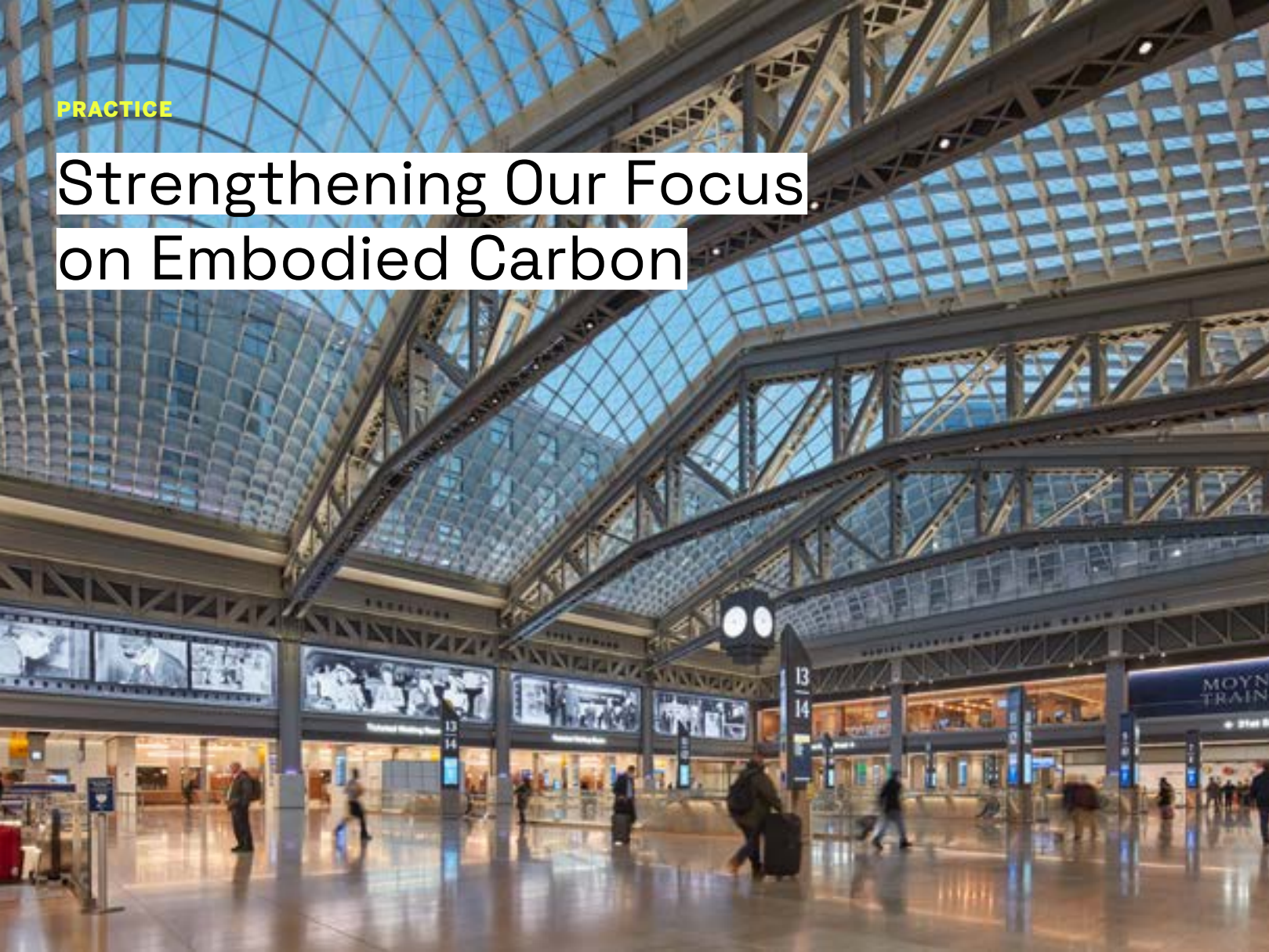
## Our Operational Carbon Target Ranges

Note: Operational Carbon targets are estimated as an average across the program type. Target ranges are continuously being revised for each project as more data becomes available.

Government + Civic	15–20 kBTU/ft <sup>2</sup> /year	Mixed-Use	20–25 kBTU/ft <sup>2</sup> /year
Commercial + Office	20–25 kBTU/ft <sup>2</sup> /year	Healthcare + Science	45–40 kBTU/ft <sup>2</sup> /year
Educational	15–20 kBTU/ft <sup>2</sup> /year	Aviation	55–60 kBTU/ft <sup>2</sup> /year
Residential	15–20 kBTU/ft <sup>2</sup> /year		

PRACTICE

# Strengthening Our Focus on Embodied Carbon



Professional organizations have called upon our industry to reach net zero whole life carbon by 2050. We've pledged to meet this goal by 2040.

As we have continued to make progress in reducing the operational emissions of the buildings we design, we have redoubled our focus on embodied carbon—the emissions associated with building materials and construction. Embodied carbon emissions in the building industry represent approximately 11 percent of all carbon emissions worldwide—which means that scalable solutions to reduce these emissions can have a profound impact.

This year, we launched an **Embodied Carbon Task Force** to take on this challenge from every angle. This interdisciplinary group is working across our geographies to develop best practices for design decisions in relation to construction materials and building systems, to

define a consistent methodology for calculating whole life cycle carbon, and to report progress toward 2030 and 2040 goals.

Having clear and accurate estimates of the carbon impact of a proposed design is a powerful advantage—it allows our design teams and our clients to make informed decisions when it matters the most. That's why we designed and developed **EC101, an embodied carbon calculator** designed to be used by all teams starting at the concept design and feasibility stages. Already, this tool is enabling our design teams and clients to make confident, data-driven decisions early in the design process to reduce embodied carbon impact.



↑ SOM's Rowan Georges, Ben Caldwell, and Francesca Oliveira presented their work on decarbonizing materials at the 2023 AIA National Conference.

As awareness about the impact of embodied carbon grows, we are finding more and more opportunities to apply our longstanding expertise in this area. Today, we are increasingly helping building owners evaluate their options to retrofit, upgrade, or reposition their outdated properties, rather than demolish and build new. Applying years of research and project experience, our **adaptive reuse practice** has helped our clients navigate the challenges of the post-pandemic commercial real

estate market. This year we developed feasibility studies on office-to-residential conversion in New York and commercial office retrofits in London, with the goal of extending the useful lifespan of the buildings we already have.

We are also contributing our expertise to **ECHO** (Embodied Carbon Harmonization and Optimization), an industrywide initiative to advance consistent carbon emissions measurement and reporting for the entire US in site work, architecture, structure, and MEP disciplines. Convened jointly by five leading nonprofit organizations, the ECHO Project is preparing to launch resources and digital tools to promote clarity, alignment, and collaborative action to advance decarbonization.

We know that the building materials we specify have a major impact on the embodied carbon footprint of our projects. This year we have continued to advance **D-Specs, a firmwide initiative to decarbonize and de-chemicalize our material specifications**, with hundreds of updates. Beyond our own projects, we continue to use SOM's global leadership position to make a broader impact in the construction industry by influencing manufacturers, clients, and contractors to consistently prioritize healthy and sustainable building materials and construction practices. One example of this outreach is our presentation at AIA's National Conference, where SOM teamed with manufacturers committed to decarbonization and presented our work.

## Our Global Whole Life Carbon Targets



PRACTICE

# Launching a New Service: Whole Life Carbon Accounting



Our team of carbon experts has developed a system for evaluating and measuring whole life carbon emissions clearly and comprehensively—from the very start of a project and throughout its life cycle. This standalone service gives our clients a holistic view of a project’s environmental impact.

## From targets to measurable outcomes

While the industry has for decades focused on reducing operational energy and related carbon emissions, whole life carbon is emerging as crucial in the way buildings are designed, constructed and renovated to go further in the pursuit of reducing the built environment’s overall carbon impact.

Progressive planning authorities now request embodied carbon data at the earliest stages of major projects and require this to be verified once buildings are constructed. Building policies and industry standards, which set requirements for energy performance levels, are becoming more ambitious through science-based targets. Investors are increasingly prioritizing environmentally-focused evaluations to inform their investment decisions.

Drawing on a global team with unparalleled expertise, SOM has launched Whole Life Carbon Accounting, a new service that empowers our clients in the real estate sector to meet their project’s predicted, operational energy and embodied carbon targets at construction completion and in-use.

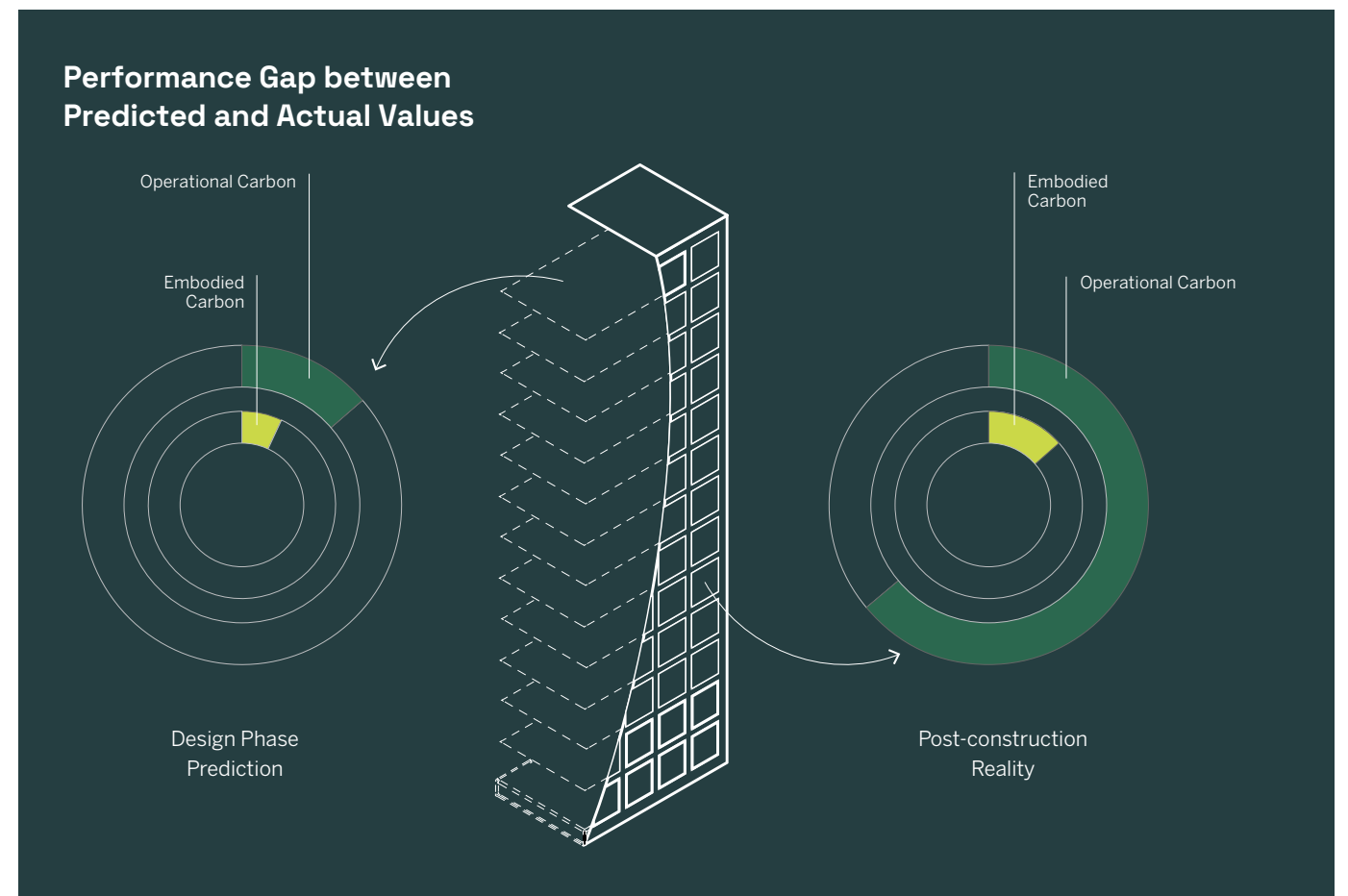
## Why a better model is needed

Though projects today carry out carbon assessments at the end of design stages, these are often performed in isolation by different parties and to different standards. This results in assessments that are not comparable and cannot effectively illustrate an asset’s true performance. As a project develops and design strategies evolve, the gaps between these assessments and a project’s real performance (when constructed) widen, leading to a performance gap of up to five times more energy use and/or carbon emissions between predicted and actual values which in the long-term affects an asset’s value and future viability.

Holistic whole life carbon assessments—including quantified operational and embodied carbon data from architecture, structures, building services and interior elements—are essential to understanding a building’s true carbon impact. Performing these assessments early in the design process and ensuring their continuity during construction are critical for enabling clients to make informed decisions when it matters the most.

By providing oversight and guidance from the start of a project’s design into post-project completion, our team of architects, engineers, and sustainability experts help to translate carbon targets into measurable performance outcomes.

Our service is available both for projects designed by SOM and for those led by other design firms. It can be applied to different scales of projects from a single building to an entire portfolio of assets.



**PRACTICE**

# Whole Life Carbon Accounting

## Our Approach

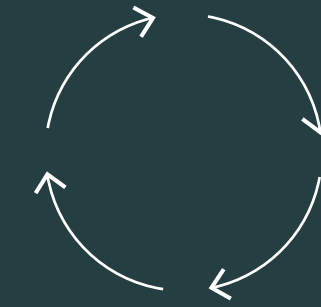
A single source of responsibility—the **Lead Carbon Role**—with access to four areas of carbon expertise looks after the analysis and measurement of operational and embodied carbon across every project stage to:

- Continuously apply quantified data
- Embed an iterative design process
- Provide a single source of responsibility



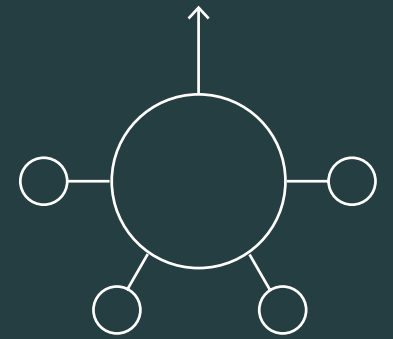
### Continuously Apply Quantified Data

By using specific detailed sets of data provided by architects, structural and MEP engineers at each stage of the design process, we achieve credible carbon accounting calculations.



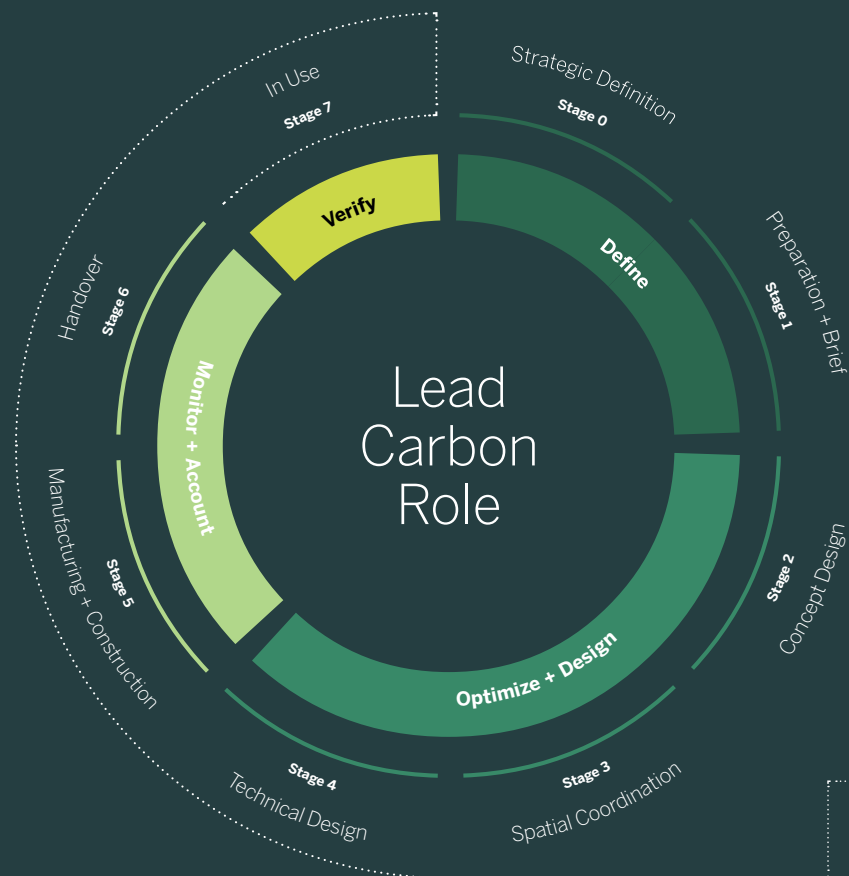
### Embed an Iterative Design Process

Through our iterative design process, we ensure adequate resources are allocated to continuously measure and assess a project's performance at every major milestone.



### Provide a Single Source of Responsibility

By implementing a single source of responsibility with carbon expertise at the beginning of the project and throughout its life, clear directives and knowledge are afforded to the project to influence its whole life carbon accounting performance into post-completion.



## Meaningful Results

SOM's Whole Life Carbon Accounting process has been used in the development of several projects internationally, including major renovations and new-build commercial buildings. In addition to minimizing carbon impact, our process benefits clients by:

- Reducing redundant efforts and costs in design and construction
- Increasing opportunities for consistent design and technical innovation
- Reducing the maintenance of buildings and ensuring they are climate-resilient for the future
- Future-proofing building assets to prevent premature renovation and/or obsolescence and adding long-term value
- Contributing to environmental reporting and meeting highest building sustainability ratings for corporate assessments and benchmarking

Want to learn more about our Whole Life Carbon Accounting service?

Get in touch: [wlca@som.com](mailto:wlca@som.com)

01 02 03

Practice

Projects

People

PROJECTS

# New York Climate Exchange

# 85%

REDUCTION IN GHG EMISSIONS  
OVER A 2005 BASELINE, EXCEEDING  
NYC TARGET TO REDUCE EMISSIONS  
BY 80 PERCENT BY 2050



In partnership with Stony Brook University, the leading public research institute in New York, SOM is creating a new, net-zero campus to address the climate crisis.

## A Living Laboratory for Sustainability Research

The New York Climate Exchange is the result of a bold initiative spearheaded by City of New York and The Trust for Governors Island—a vision to reimagine a treasured public space as a local and global hub for climate science. Working with anchor institution Stony Brook University, which will build the campus, SOM, MNLA, Buro Happold, and Langan Engineering are designing a living laboratory for sustainable research that will manifest the mission of The



Exchange in its architecture, landscape, and infrastructure.

The Exchange will convene leaders from a variety of academic institutions, industry partners, and nonprofits to collaborate on climate research and deliver actionable solutions for restoring the health of the planet. For New Yorkers, it will also serve as the city's main hub for green job training—preparing thousands of people for climate-focused professions every year.

**“Our design for this new campus embodies the stewardship necessary to solve the climate crisis by weaving sinuous mass timber pavilions through the rolling landscape of the park and reusing the historic building fabric of Governors Island.”**

**Colin Koop**  
Design Partner

The Exchange will create a compelling new public realm on Governors Island, a 172-acre island in the heart of New York Harbor. The project will add new outdoor public space, create 230,000 square feet of new buildings, and repurpose another 170,000 square feet of the island's historic architecture. The new buildings will weave sinuous mass timber pavilions, topped with photovoltaic arrays, through the island's rolling landscape.



Together, the old and new buildings will provide research labs, classrooms, exhibits, greenhouses, dormitories, community spaces, and areas designed to foster the exchange of ideas. New York City grew around its harbor, and The Exchange will reclaim this maritime history in a new way. The waterfront will become part of the curriculum as a restored ecosystem, and, with the new buildings, will put science and research on display—enabling New Yorkers and visitors from around the world to learn about the climate solutions being developed here.

The Exchange will accelerate progress toward a sustainable future, and its design is part of that story. The use of mass timber for the new architecture, together with the adaptive reuse of

existing buildings, will significantly reduce embodied carbon. The first level of each new building is situated above the floodplain to protect against sea level rise for the next century. The site will become one of the first in the country to achieve True Zero Waste certification, meet 100 percent of its non-potable water demand with rainwater and treated wastewater, and aims to run entirely on electricity generated on-site—even creating surplus energy that will flow back into the power grid. Together, these strategies will help The Exchange reach a milestone in sustainable design: each of its buildings, old and new, will be designed to meet Living Building Challenge standards, a goal that no building in New York City has yet achieved.

**“The New York Climate Exchange will be a hub for sustainable technologies including a geo-exchange system, a waterhub to treat onsite wastewater, and integrated renewable energy. We're excited about how these features will serve as a living lab for students, researchers, and visitors from around the world.”**

**Sigal Shemesh**  
Associate and Sustainability Lead

# Office Transformation Case Study: 1633 Broadway

75%

SAVINGS IN EMBODIED CARBON  
COMPARED TO NEW BUILD



Through an innovative approach to office-to-residential conversion, New York City can address its housing crisis and the climate crisis at once.

### Finding new solutions for residential conversion

Three years since the onset of the Covid-19 pandemic, New York City has defied the most dire predictions of urban decline, yet today the city faces new challenges. As the city continues to struggle with an acute housing shortage, 560,000 new residential units will need to be created by 2030 to accommodate a growing population and to make up for a shortfall of construction. At the same time, many commercial real estate owners are saddled with a surplus of vacant office space, as the rise of remote work has led companies to reduce their physical footprints. The effects are especially pronounced for older buildings, which lack up-to-date amenities or may require extensive renovations to meet current market demands.

City leaders have recommended the conversion of underused office spaces

to much-needed housing, a concept that has been slow to gather steam for a variety of economic, pragmatic, policy, and design reasons. 1633 Broadway, an aging Midtown office tower completed in 1971, is emblematic of the challenges and opportunities for office-to-residential conversion. Our design proposes a new model for residential development in New York—an innovative approach to adaptive reuse that will help to build a more vibrant, equitable, and sustainable city.

### From monolith to diverse vertical village

Like many large mid-century office buildings, 1633 Broadway has vast floor plates with more than 50-foot lease depths, characteristics that make it difficult to convert to residential use. The first step in our design scheme is to selectively remove floor area to reconfigure the floor plates. By strategically carving



invested in the building's construction. This approach also reduces construction time as compared to ground-up construction. Our concept is an inherently sustainable solution to meet the city's housing needs, and one that can be financially viable for owners and developers as well, thanks to an innovative programming model that creates uncommon value for residential offerings that serve a range of income levels.

**“By seizing the potential of vacant office space—and, crucially, making this type of conversion financially viable for owners and developers—this concept can become a model for addressing the city’s housing needs, the global climate crisis and reinvigorating business districts to become vibrant and amenity-rich neighborhoods.”**

**Frank Mahan**  
Design Principal

away vertical portions of the monolithic building volume, we create floor sizes suited to appropriate residential layouts. Cutting away also maximizes perimeter, and therefore access to natural light. We can then recapture the removed floor area by adding it to the top and the base of the building. This strategy achieves multiple benefits at once: creating a distinctive profile on the skyline, filling in a podium level to house a range of amenities and programs, and producing a staggered roofscape to accommodate a series of garden terraces.

By repurposing the original structure, we save 50 percent of the embodied carbon

Seizing the potential of vacant office space—and, crucially, making this type of conversion financially viable and attractive for owners and developers—this concept can become a model for reinvigorating business districts to become vibrant and amenity-rich neighborhoods.

PROJECTS

# University of Illinois Urbana-Champaign—Campus Instructional Facility



A flexible new center for learning and technology designed in tandem with students and teachers, the Campus Instructional Facility (CIF) is on track to achieve net zero operational carbon.

## Flexibility for new modes of learning

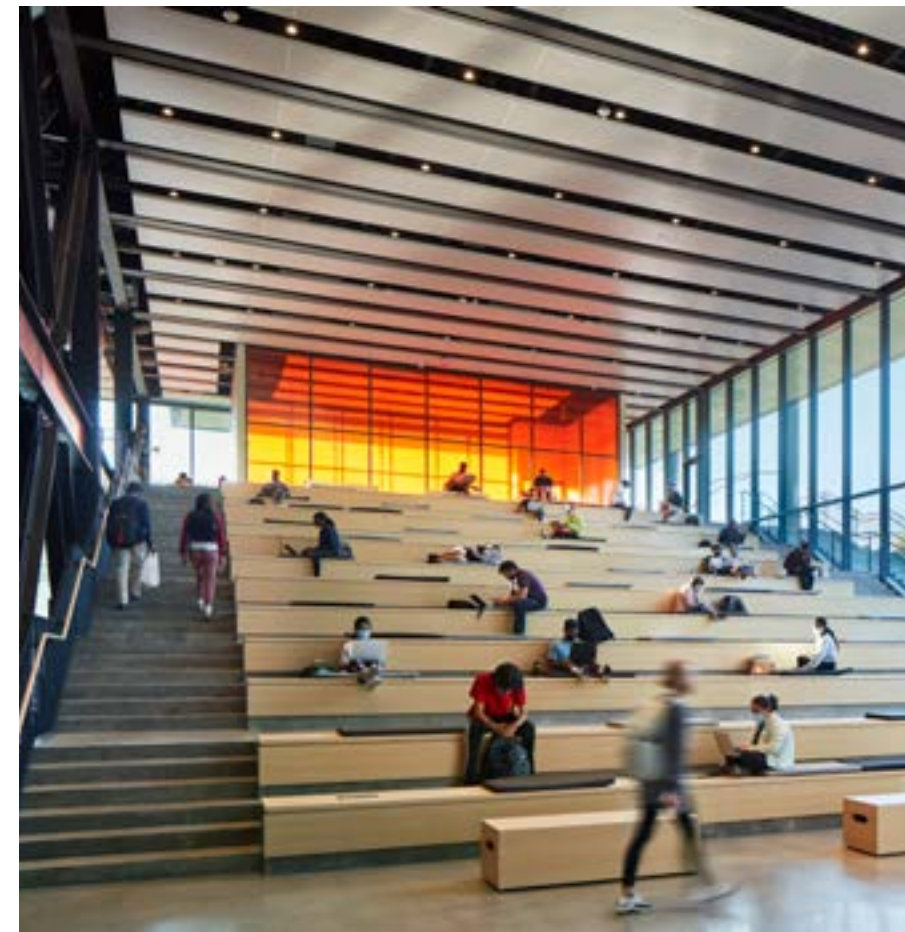
CIF is a new center for learning designed to meet the changing needs of students and faculty at the University of Illinois at Urbana-Champaign (UIUC). The building celebrates the university’s mission to cultivate research and discovery and includes flexible classrooms and reconfigurable spaces designed to evolve as needs change. Structure and architecture are carefully integrated, with exposed structural steel elements supporting the building’s architectural massing throughout, seamlessly integrating radiant cooling and heating. Research for structural optimization, fireproofing and MEP were done in collaboration with UIUC engineering students and faculty, and the building itself is now part of the engineering school curriculum.

## The most sustainable addition to the UIUC campus

The Campus Instructional Facility is on track to achieve net zero operational carbon in its first year—a milestone in the university’s pledge to reach carbon neutrality across its campus by 2050. Targeting LEED Platinum and LEED Zero Energy certifications, the building is also anticipated to perform 54 percent above the ASHRAE standard and 82 percent above the Commercial Building Energy Consumption Survey standard.

**“This all-electric building was voted by the student body as the “project with the greatest impact” on the campus. On track to achieve net zero operational energy, the building serves as a learning tool by showcasing engineering integration.”**

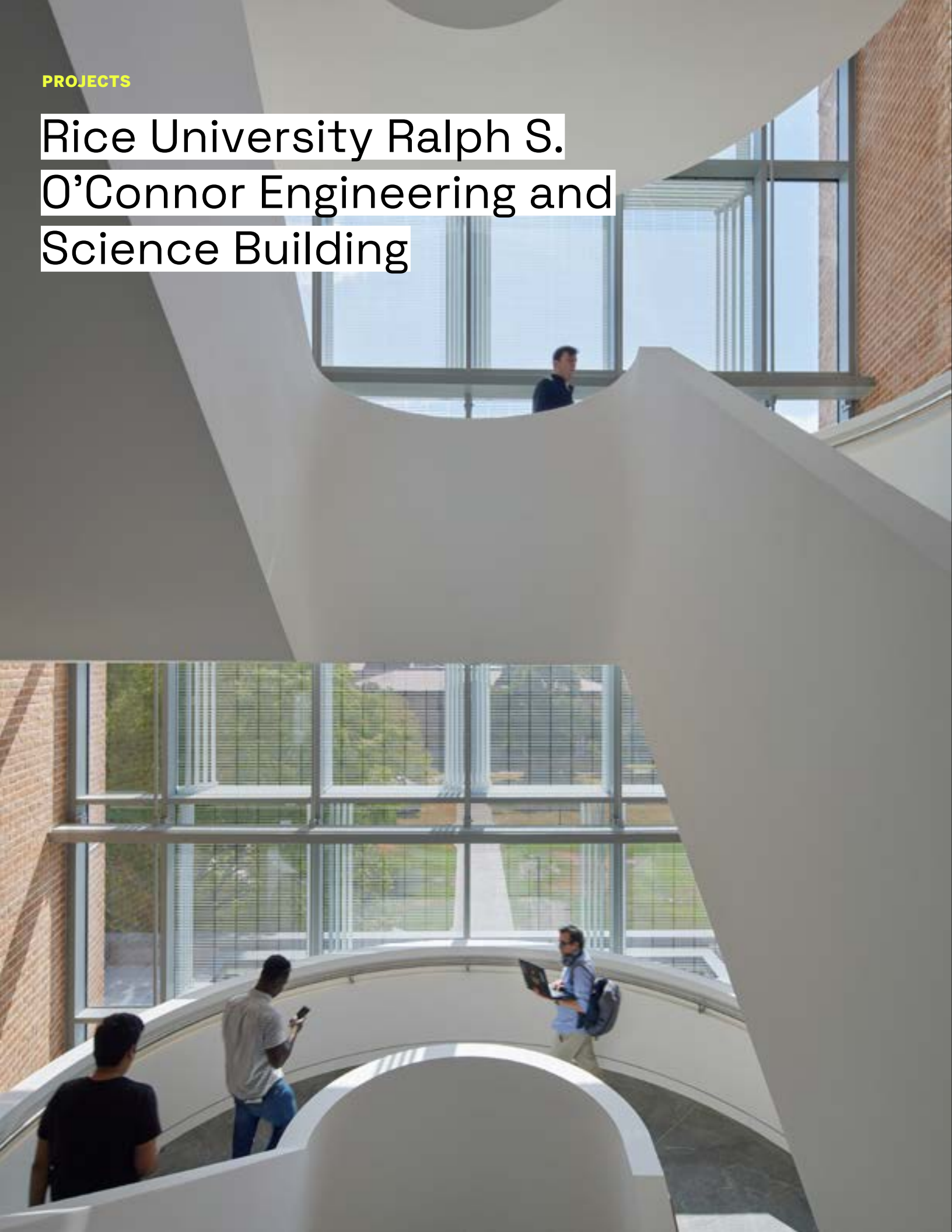
**Luke Leung**  
Principal + Practice Leader  
Sustainable Engineering Studio



The team continues to monitor embodied carbon and whole-life carbon post occupancy. To reduce maintenance and utility costs, net zero operational carbon is targeted through a reduced window wall ratio, radiant systems, low-VOC materials, electrochromic glazing on the east/west facades for shading, ground source heat exchange partially funded by a grant from the university’s Student Sustainability Fund, and a photovoltaic allocation from the UIUC Solar Farm. The building is all electric, aligning with UIUC’s decarbonization plans.

PROJECTS

# Rice University Ralph S. O'Connor Engineering and Science Building



**This new center for interdisciplinary collaboration at Rice University demonstrates the impact of low-carbon design principles. Through a rigorous application of passive and active strategies, it achieves a 50 percent reduction in energy use compared to a typical research space.**

### **A high-performance facility, built for collaboration**

At 250,000 square feet, the new engineering and science building is the largest research facility in Rice University's historic core campus. It provides technology-rich facilities that embody the University's goal to stay at the forefront of scientific discovery and to recruit the country's best scientific and engineering minds. The new facility includes state-of-the-art laboratories, classrooms, offices, a cafe, and interactive gathering spaces. A multi-purpose event space with an outdoor terrace at the top level offers views of the campus and the Houston skyline.

To extend the campus into the building, a five-story central atrium creates a hub of activity, where seminar rooms, break areas, and informal gathering spaces are grouped together. A transparent glass facade showcases this activity to the campus. The design team developed a building program that fosters collaboration in four research areas: advanced materials, quantum science and computing, urban research and innovation, and the energy transition.

To promote interaction across all floors, the building features a series of stepped double-height collaboration areas. Intimate conference rooms and break areas with warm materials provide ample opportunities for informal learning and connection.

### **Design tailored to its environment**

Passive and active design strategies reduce the building's carbon footprint and promote a healthy environment. The design reduces energy demand by maximizing daylight while limiting solar heat gain through a solar-responsive enclosure. The building is composed of a series of angled pilasters and vertical brick fins that strategically allow an appropriate amount of daylight to enter the perimeter offices and penetrate further into the lab fronts. In addition, a series of skylights above the arcade redirects and softens the strong Texas sun. Thanks to these passive design strategies and an energy efficient HVAC and lighting system, the laboratories use 50 percent less energy than a comparable research space.

# The Point

70%

**OF THE DEMOLITION DEBRIS FROM UTAH STATE PRISON HAS BEEN RECYCLED, CLEARING THE WAY FOR A NEW, SUSTAINABLE COMMUNITY**



**This unique development in Utah is set to become America’s first “15-minute city.” SOM developed the Framework Plan that will serve as the backbone for a 21st-century sustainable community.**

The Point will create an innovation community that is grounded in the specific character of the Wasatch Front, Utah’s most important urban region. A 15-minute city—the foundation of this framework plan—is an urban planning concept wherein most daily needs can be met within a 15-minute walk from the project’s center. Planned on a 600-acre site nestled between Utah’s two most populous counties and largest labor sheds, The Point is the future home for approximately 15,000 residents. The Point will be a community for everyone—a place that is connected to the region’s history, while advancing a 21st-century model of urban design.

### **A transit-centered community**

More than just a new residential district, The Point seeks to attract businesses and talent to create an innovation hub for Utah. Development, community facilities, and day-to-day amenities are concentrated in a central area called the Hub District, around the BRT stations, and in the neighborhood and district cores to reinforce transit-oriented development over time. Ninety-five percent of all development is within a five-minute walk of the mixed-use neighborhood cores.



**“The Point is being built on the principles of walkable, transit-oriented urbanism. It will become a place where residents can meet all their daily needs within a 15-minute walk.”**

**Peter Kindel**  
Lead Designer

The Framework Plan for The Point reduces the need for individual car use by offering several convenient transit alternatives. Mobility modes will include Bus Rapid Transit (BRT), a “Circulator” transit loop, a pedestrian priority zone, and a comprehensive network of bike and pedestrian routes. The 80-acre pedestrian priority zone encompasses the Hub District while balancing automobile access by creating a road system that provides multiple connections with major access roads and a permeable system throughout. These strategies will encourage residents and visitors to be less dependent on cars—reducing environmental impact while promoting health and well-being.

### **Interconnected open spaces**

The Point provides more than 142 acres of public open space—approximately one-quarter of the site. Interconnected parks and greenways will provide opportunities for recreation, leisure, and connectivity. The signature open space feature is the River to Range Greenway, which connects the Jordan River in the west to the Wasatch Range in the east. The Central Park creates a recreational and civic heart of the community. Every development parcel is connected to the open space network, enhancing quality of life for residents and boosting the project’s economic value.

# Sultan Haitham City



**A first-of-its-kind development in the Middle East, this ambitious smart city development combines a technology-driven approach to transit-oriented design with planning principles that respond to the local ecology and climate.**

Sultan Haitham City is a new mixed-use smart city in Muscat, Oman. Located on the outskirts of the capital, the new city will provide residents with a characterful and vibrant urban environment across 14.8 million square meters. With over 20,000 new homes of different scales and types as well as a university, school, health facilities and mosques, the city will accommodate approximately 100,000 residents once complete. Construction is set to start next year through a phased approach. The final phase is scheduled for completion in 2045.

### Redefining smart cities

While “smart cities” are often perceived as distant visions of the future, Sultan Haitham City implements technologies and strategies that are deployable today and relevant to a climate with extreme temperatures and humidity. Combined with sound planning principles, like passive design strategies to optimize street shading and encourage natural



cooling breezes throughout the city, the urban design raises the bar for sustainable urban development in the Middle East.

**“SOM’s approach to this smart city introduces a new model for sustainable development in the Middle East. By providing access to a variety of public amenities and inclusive spaces all within walking distance, Sultan Haitham City secures an ambitious and inclusive future for Oman.”**

**Thomas Behr**  
Managing Partner for  
Europe and the Middle East

The city’s design also incorporates advanced transportation management systems that better utilize public resources. These systems use real-time traffic data from cameras and speed sensors which are integrated and processed and result in actions like traffic rerouting or variable messages to improve traffic flow and public transportation efficiency. The city is also designed to accommodate micro-mobility—including electric scooters and bicycles—to provide residents with a variety of sustainable transportation options. By rejecting the typical car-centric way in which cities in the Middle East are



often designed and, instead, prioritizing sustainable modes of transportation, the new city promotes walking and reduces dependency on cars.

### Promoting ecological resilience

Making buildings and public spaces resilient to natural disasters and climate change is a key driver of the new city’s design. Leveraging our experience in designing environmentally sustainable development, our urban planning team

recognized the natural water flows on the site presented a very serious risk of flooding, but could also form an opportunity to harness and capture water, the region’s most precious resource. The 7.5-kilometer-long dry river—known as a wadi—will be transformed into a naturalized park system, designed to contain the water of the most severe predictable flood event. The design makes the new city and the wider area more resilient to increasingly heavy storm events in the future. The park also provides direct links to four green pedestrian spines that traverse the city’s nineteen neighborhoods and provide access to open spaces and amenities all within walking distance.

**“Our team used analytics to develop the masterplan in response to the local microclimate. Wind studies informed the site design: urban canyons have been carved with a northeast orientation to channel the predominant breeze. Solar analyses and outdoor comfort plots informed street proportions, massing setbacks, and landscape strategy.”**

**Herman Calleja**  
Associate and Sustainability Lead

PROJECTS

# High Line–Moynihan Connector



Built with sustainably sourced timber, this extension to New York City’s High Line creates a continuous walkway to the transit hub at Moynihan Train Hall.

## A walkable, green pathway

The High Line – Moynihan Connector is part of a long-standing vision to create safe and enjoyable pedestrian access, connect people to transit, and seamlessly link public open spaces and other community assets on the West Side of Manhattan.

Designed by SOM and Field Operations, the Connector is composed of two bridges running above the street grid. The Connector forms the final link in a chain of pedestrian pathways from Penn Station to Hudson Yards and the High Line to the West Village. The seamless, fully accessible Connector takes the form of an elevated, 600-foot linear park that creates an episodic urban journey from the contemporary spaces of Midtown West to the verdant gardens and historic structure of the High Line.

## Creating the two bridges

The 260-foot-long Timber Bridge, a glulam truss made from sustainably sourced wood, offers an inviting space protected from the traffic emerging from the Lincoln Tunnel. This structural solution requires minimal connections to the ground, allowing the existing roads to remain undisturbed and maximizing the use of renewable materials.

The Woodland Bridge, a 340-foot-long diagonal path lined with trees, introduces the immersive landscape of the High Line. Deep and continuous soil beds built into the structure support large trees characteristic of an Eastern Deciduous Forest that will grow into a lush landscape for birds and native pollinators, provide shade, and shield pedestrians from the traffic below. This container is supported on architecturally exposed weathered columns and angled bracket arms that vary dynamically to reflect the different soil depths along the diagonal pathway.

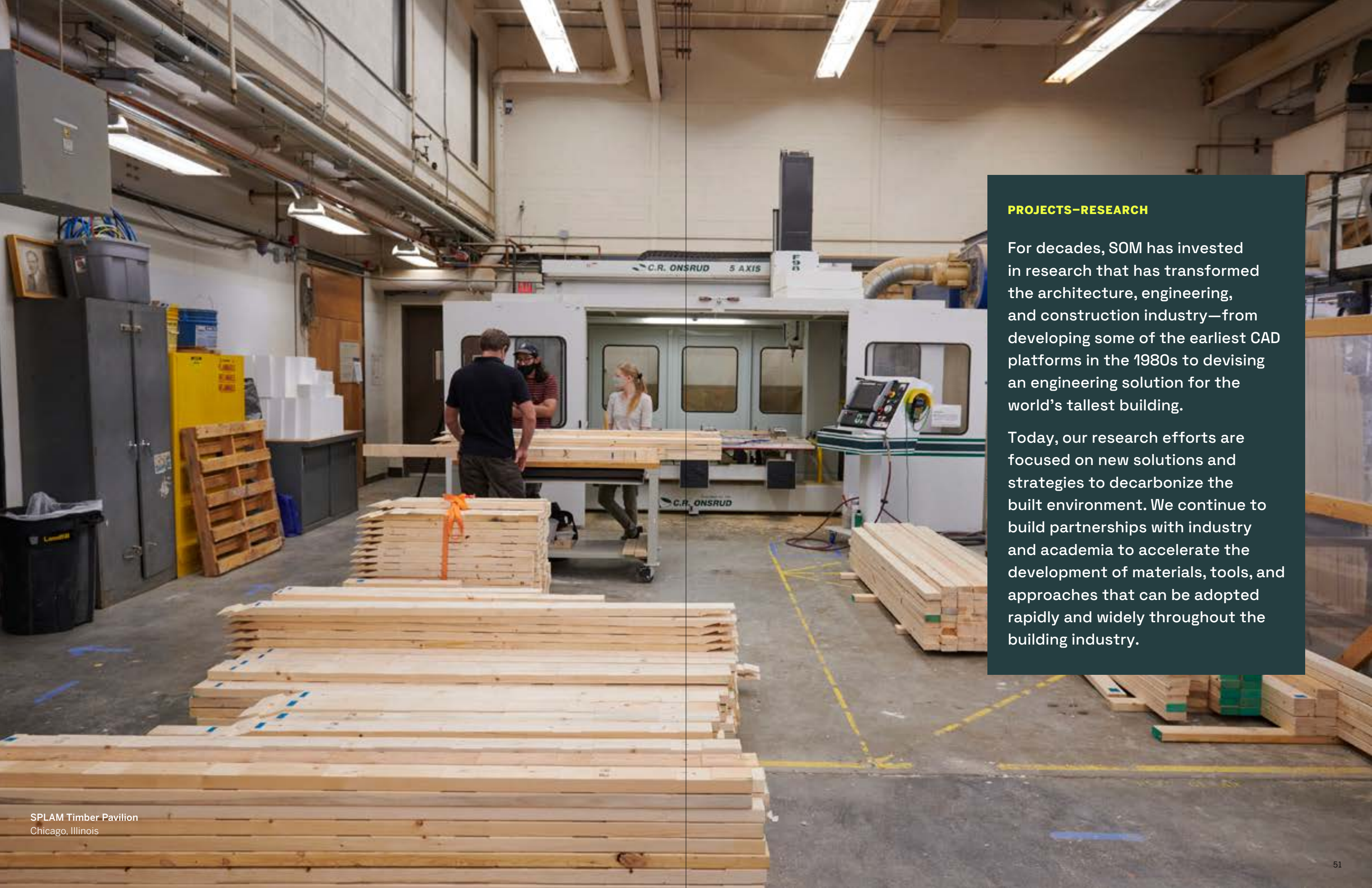




PROJECTS-RESEARCH

Our design and research teams are generating ideas that may change how we build.





### PROJECTS—RESEARCH

For decades, SOM has invested in research that has transformed the architecture, engineering, and construction industry—from developing some of the earliest CAD platforms in the 1980s to devising an engineering solution for the world’s tallest building.

Today, our research efforts are focused on new solutions and strategies to decarbonize the built environment. We continue to build partnerships with industry and academia to accelerate the development of materials, tools, and approaches that can be adopted rapidly and widely throughout the building industry.

SPLAM Timber Pavilion  
Chicago, Illinois

# Urban Sequoia NOW



Expanding upon the concept first introduced at COP26, SOM has continued to refine Urban Sequoia—a radical reimagination of the architecture and construction of buildings and cities—to create a design that is buildable today.

At COP27, the 2022 UN Climate Change Conference, SOM presented Urban Sequoia NOW—a design, readily constructible today, for a building that will sequester carbon throughout its lifecycle. Urban Sequoia responds to an urgent need to rethink the design and construction of the built environment. “We recognize the need to alter the trajectory of climate change by going beyond net zero,” said SOM Partner Chris Cooper. “We need to take carbon out of the atmosphere through the built environment, and we have developed a design to do just that.”

Urban Sequoia brings together different strands of sustainable design thinking, the latest innovations, and emerging technologies and applies them at the scale of a building. By holistically optimizing building design, minimizing materials, and integrating biomaterials, advanced biomass, and carbon capture technologies, Urban Sequoia achieves substantially more carbon reductions than what has been possible by applying these techniques separately.

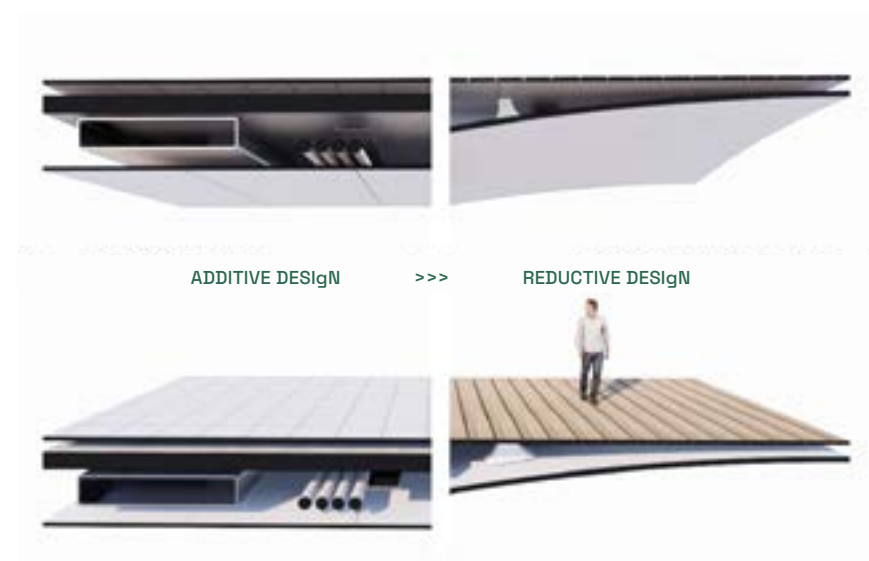
“The power of this idea is how achievable it is. Our proposal brings together new design ideas with nature-based solutions, emerging and current carbon absorption technologies and integrates them in ways not done before in the built environment.”

Yasemin Kologlu  
Design Principal

The design for Urban Sequoia NOW brings SOM’s 2021 high-rise prototype from a visionary concept to a buildable reality. The building would reduce upfront embodied carbon by 70 percent—from construction alone—when compared to that of a typical high-rise. In the first five years of the tower’s life, it would reach a 100 percent reduction in whole life carbon, achieving net zero. Over an extended, 100-year lifespan, an Urban Sequoia building would absorb more



## A New Way of Building



## Modular Shell System



than 300 percent of the amount of carbon emitted in its construction and operations.

Urban Sequoia NOW is a modular approach applicable to many building types at many scales and locations. Each building type uses carbon-sequestering

materials, like timber and bio-concrete, to reduce embodied carbon emissions, and technologies such as energy-generating solar glass to lower operational carbon emissions. The goal is to regenerate the environment in the world’s densest places, where carbon emissions are highest, and to do so with a design that has the flexibility to be adapted over time.

“Our team explored how building system components can be optimized and consolidated to serve multiple purposes—thereby reducing material use and minimizing embodied and operational carbon. Innovations like bio-materials and carbon capture are integrated to go beyond net zero carbon.”

Nicholas Chan  
Mechanical Engineer,  
Sustainable Engineering

SOM is actively looking for partners—in real estate, philanthropy, manufacturing, and academia—to join us in creating the next generation of carbon-absorbing buildings and cities.

If interested in collaborating, please get in touch: [urbansequoia@som.com](mailto:urbansequoia@som.com)

# Square Mile Carbon Study



Analyzing six common urban and suburban development patterns, this study offers a holistic assessment of carbon impact per capita—yielding insights that can inform sustainable development strategies nationwide.

The Square Mile Carbon Study examines carbon emissions at regional scale. Our team of urban planners analyzed six different one-square-mile parcels of land in the San Francisco Bay Area, each of which represents a typical development pattern—from the high-density, mixed-use downtown core to the single-use suburbs on the periphery. The goal was to understand which development and land use patterns are most efficient when you take a holistic view of carbon impact per capita—including transportation, embodied carbon, and operational carbon. This tool allows our urban planning team to evaluate the tradeoff between different types of development in terms of density, mix of uses, open space, and urban form.

As designers, we know intuitively that mixed-use buildings and districts are more efficient than single-use districts because they create opportunities for different kinds of people and professions to flourish simultaneously. They provide a lifestyle that's less dependent on cars, and they allow buildings with different uses to share energy and infrastructure, which contributes to carbon efficiency at scale. The Square Mile Carbon Study provides the data to validate these intuitions. Taking a holistic view of carbon impact, it shows that every type of mixed-use district—from mid-density to high-density—has a significantly lower carbon impact per capita than a single-use district.

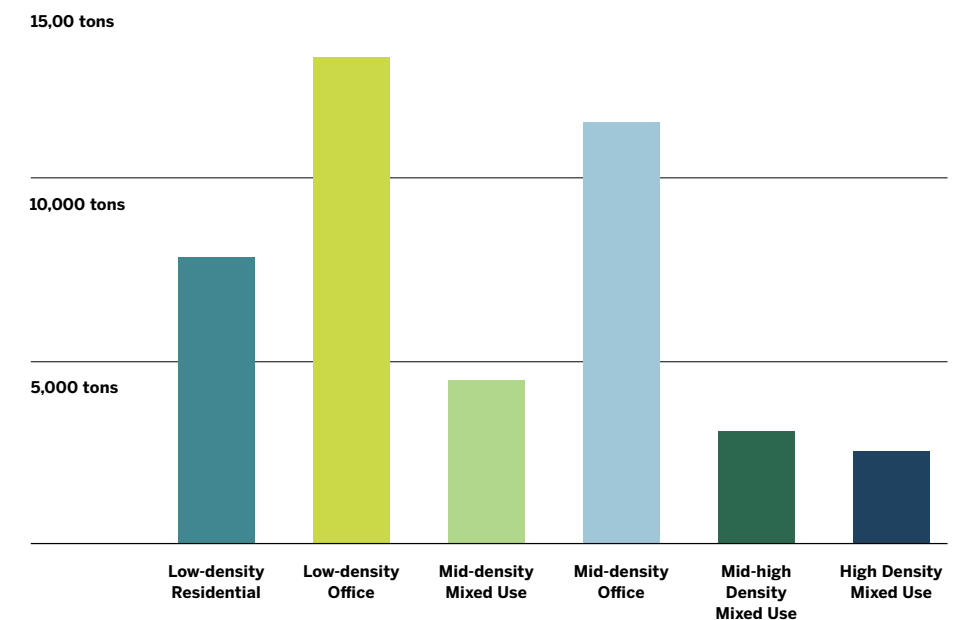
“With this study, we want to reach the people who make decisions regarding our cities—urban designers and planners, policy makers, developers, and communities.”

Ellen Lou  
Urban Design +  
Planning Principal

## Carbon Footprint per Service Population



## Carbon Emissions per Capita (Service Population) San Francisco Bay Area, 2022



# Rebuild or Retrofit? A Case Study for Commercial Property Owners



Commercial property owners face complex decisions for how to renew and upgrade aging buildings to meet net zero targets.

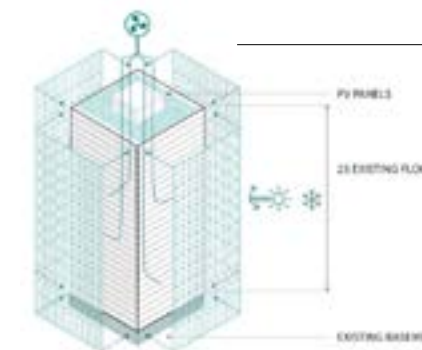
Taking a representative 50-year-old building as a case study, our London-based team envisioned the cost and whole life carbon impact of four redevelopment scenarios—from demolition and new construction to intensive retrofit and overbuild.

How can we extend the lifespan of an existing building with minimal intervention? We took this challenge as a starting point for a case study exploring a full range of scenarios that owners of commercial real estate face in today's regulatory environment and market conditions. We quantified the cost and whole life carbon impact of four distinct options:

1. A deep retrofit
2. A deep retrofit with additional floors
3. A full refurbishment with significant overbuild
4. Demolition and redevelopment

In our design studies for the retrofit and overbuild scenarios, we worked focused on key principles to reduce carbon impact: demolish as little as possible; create amenity spaces and provide comfort; maximize development potential by adding floor area without touching the existing structure and foundations. Our analysis demonstrates how, with strategic retrofits, owners can transform buildings to meet contemporary market and performance standards, and that this approach can have a significantly lower upfront carbon impact than demolition and rebuilding.

## Varying Degrees of Intervention in an Existing Asset

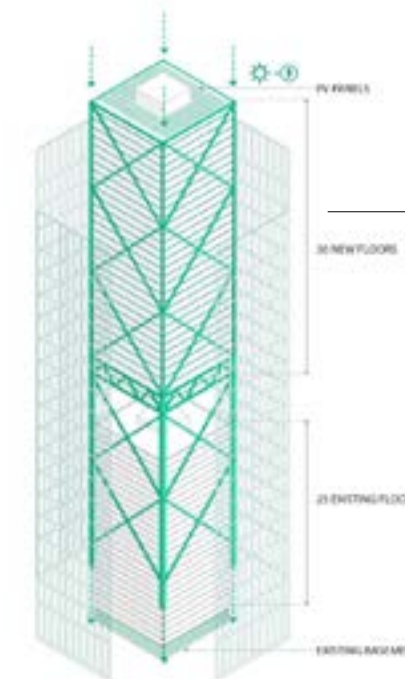
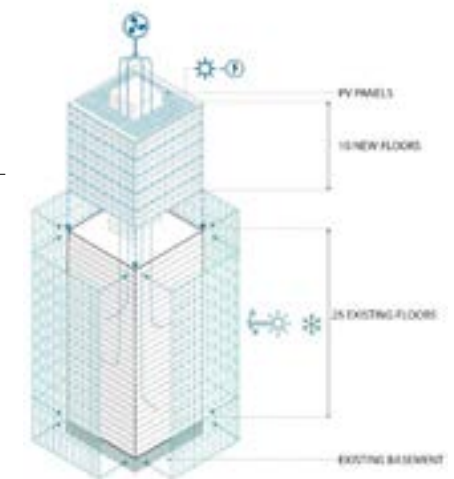


**Scenario 1**  
Deep Retrofit

Minimizing Intervention  
+ Overall Impact

**Scenario 2**  
Deep Retrofit with Additional Floors

Maximizing Structural Capacity  
+ Increasing Floor Area

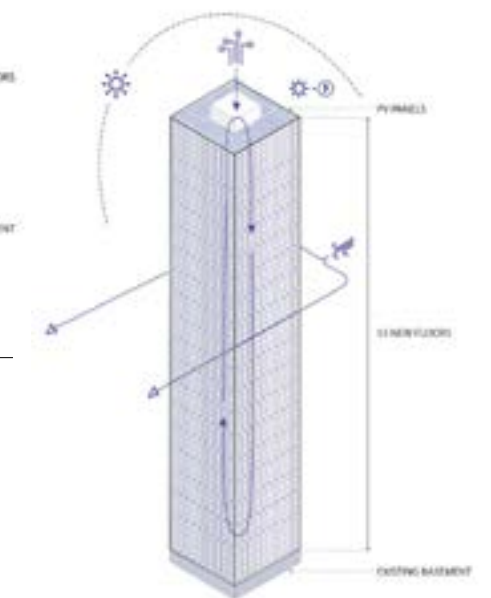


**Scenario 3**  
Overbuild with Significant Floor Area Increase

Introducing New Amenities  
+ Increasing Floor Area

**Scenario 4**  
Demolition + Newbuild

Increasing Daylight Access +  
Enabling Greater Adaptability



# Bio-Concrete



As part of an ongoing partnership to turn the built environment into a climate solution, SOM and Prometheus Materials have developed an algae-based construction material that absorbs carbon—forming the basis for carbon-negative buildings.

### Towards a carbon-negative architecture

SOM is determined to develop new methods and materials in the pursuit of creating zero-carbon and carbon-negative buildings. Prometheus Materials, a start-up company spun out of a research program at the University of Colorado Boulder, has teamed up with SOM to explore and establish applications for this new generation of bio-based materials that could turn the construction industry into a positive force in the fight against climate change.

Bio-concrete, developed with Prometheus, applies solutions found in nature. The algae-based building material uses two natural mechanisms to sequester and store CO2 in material form: photosynthesis (the absorption and storage of CO2 during the growth of the algae) and carbonate mineralization (CO2 reacting with a metal to create a mineral during the curing process). Applied to a concept like SOM's Urban Sequoia—in which buildings function as trees in a whole-life carbon cycle, capturing CO2, purifying the air, and regenerating the environment—the carbon captured through bio-concrete can be put to use in industrial applications, forming the basis of a new carbon-removal economy.



← Prometheus Materials CEO Loren Burnett and SOM Principal Yasemin Kologlu with a full-scale mockup of a bio-concrete wall

### New design possibilities

The research team is developing bio-concrete—and other biogenic construction materials—to be market-ready and meet performance standards of architects and engineers. Bio-concrete can be developed to take on different colors and textures, and much like traditional concrete, it can be modeled into many shapes. As the development of this new biogenic building material has progressed, the team is achieving compressive strengths similar to that of traditional concrete. Additionally, this new material appears to have improved tensile properties and fracture resistance—opening up possibilities for new design approaches and forms that harness its unique qualities.

Recently, at the 2023 Chicago Architecture Biennial, SOM and Prometheus unveiled Bio-Block™ Spiral, an installation that demonstrates the potential of this building material.



# Renewable Materials Research



Our in-house research team continues to explore new technologies and applications for low-carbon building materials. We are connecting with researchers and manufacturers outside of SOM, and finding opportunities to co-develop products and apply them in building projects.

## Mass Timber

For more than a decade, SOM has developed methods to reduce the carbon impact of buildings by using timber as an alternative to concrete. We have focused on the development of new methods in composite timber-concrete construction, which uses mass timber as a structural material to reduce the embodied carbon footprint of buildings by 60 to 75 percent compared to a conventional concrete and steel structure. Our concept for a timber-concrete composite system is perfectly suited to the 2021 International Building Code, which opens the way for taller timber buildings. What's more, our team has designed a timber-concrete connector system that enables easy connections between the two materials and will allow for more widespread use of timber in construction.

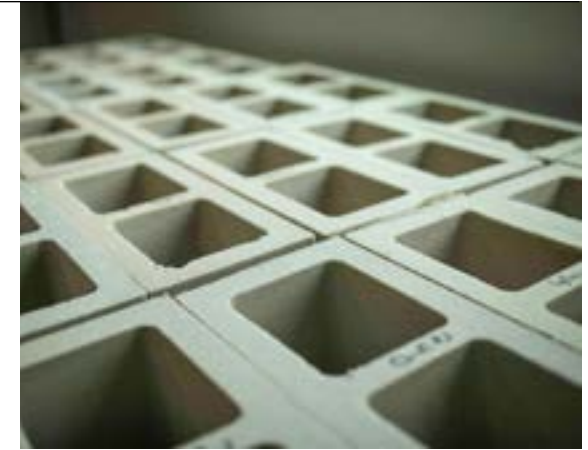
This year saw the topping out of the new **County Office Building 3** in Redwood City, California, a project that demonstrates the potential of mass timber to radically reduce a building's carbon impact. Leveraging craftsmanship, engineering knowledge, and our own research, our design team lowered the volume of timber in the building, reduced the piece count, and pared down the number of steel components. While a typical mass timber structure has 65 to 75 percent less embodied carbon than a conventional steel structure, COB3's structural timber design reduced structural embodied carbon by 85 percent.

## Bio-Concrete

Biomaterials represent one of the most promising areas of research for solutions to decarbonize the built environment. SOM has established an ongoing partnership with Prometheus Materials to explore and establish applications for bio-concrete (as detailed in the Research section of this report).

Bio-Block™ Spiral, an installation at the 2023 Chicago Architecture Biennial, demonstrates the incredible potential of this building material. Constructed out of Bio-Blocks—an algae-based concrete alternative developed in partnership with Prometheus Materials—the installation offers a model for carbon-neutral construction.

Bio-Block Spiral demonstrates a change-making collaboration across construction, fabrication, and design industries as a precursor for a healthier world. Composed of algae-based bio-concrete, the zero-carbon Blocks could significantly reduce global CO2 emissions if deployed as an alternative to Concrete Masonry Units, one of the most prevalent building materials. To underscore the viability of this replacement, the installation was assembled using conventional masonry techniques.



## Low-Carbon Concrete



A team of SOM engineers has been exploring a range of low-carbon alternatives to conventional concrete, including ground glass pozzolan, a high-strength concrete that is produced using recycled glass. After surveying the potential application of this sustainable material in 2020, our engineering team made the recommendation to incorporate ground glass pozzolan in specifications for our projects around the world.

We are now collaborating with Sioneer, a company whose mission is to not only create a new, more sustainable approach to glass recycling, but to manufacture a consistent, high-quality pozzolan that will be used in high performance structural applications. SOM is supporting Sioneer's development of Centurion, a ground glass pozzolan replacement for conventional cement. We are exploring the product's structural performance and market viability together. As Sioneer prepares to open its first fabrication facility, we are excited at the possibilities to apply this new building material in our building projects.

## Bamboo

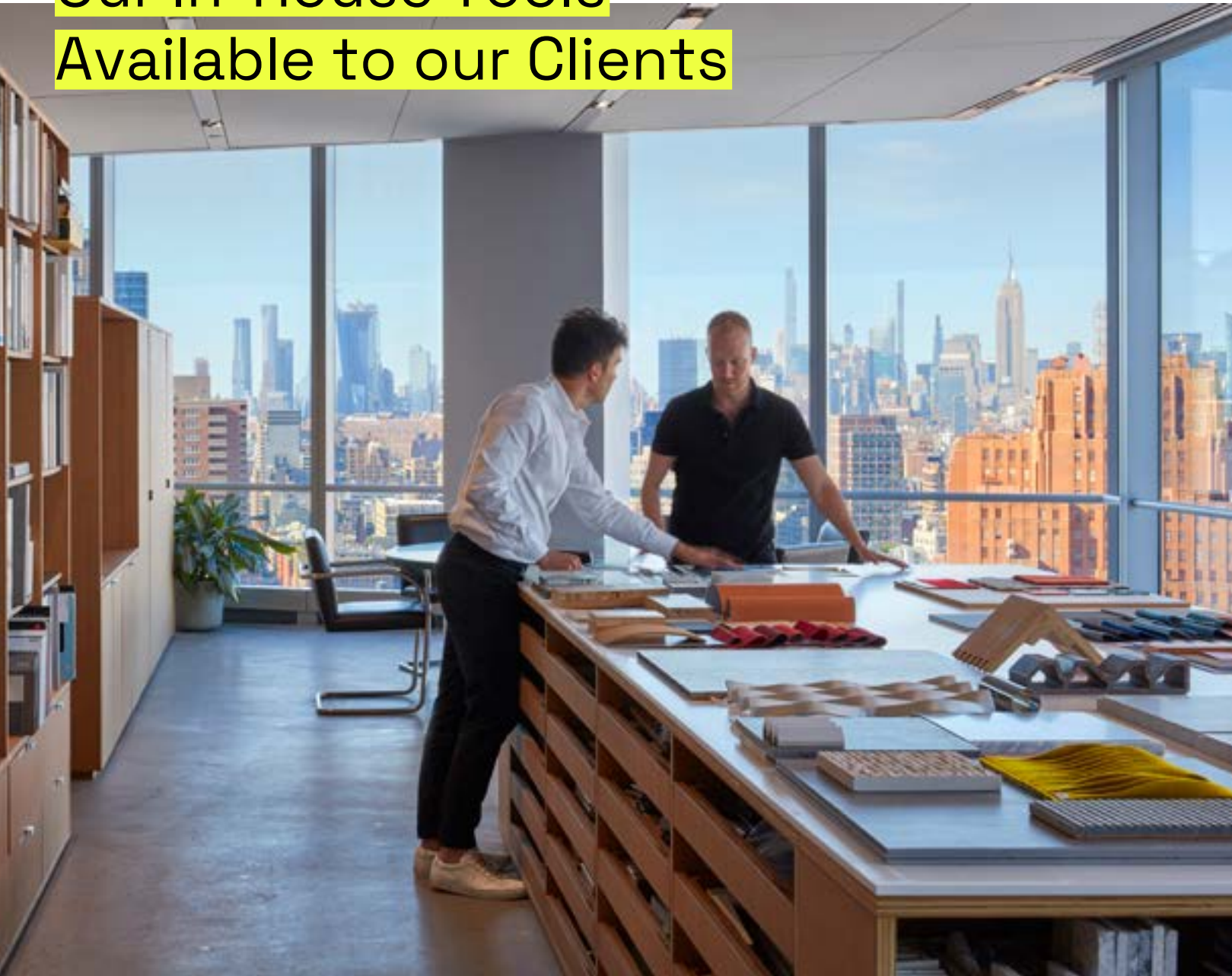
Bamboo has gained attention as a sustainable building material—it is fast-growing, strong, and flexible, qualities which make it an ideal renewable resource for use in construction. Our engineering teams have been advancing in-house research on ways to use bamboo in our projects, and we are forming partnerships with like-minded companies and manufacturers.



**PROJECTS-TOOLS**

To accelerate our progress toward net zero carbon in our design work, we've developed a series of tools and resources used by every team across our global firm.

# Our In-House Tools Available to our Clients

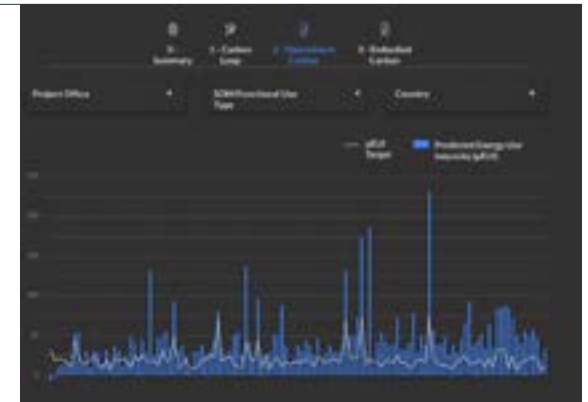


Building skills and capacity across our global teams requires constant education and engagement with specialists within and beyond our firm.

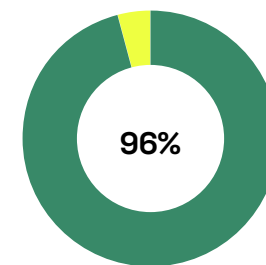
As always, cross-disciplinary dialogue is at the center of our design process. Every design team across our firm has access to unparalleled resources and a global network of colleagues who advise on finding and implementing the most effective decarbonization strategies for each project.

## Carbon Loop Dashboard

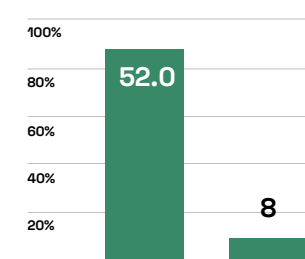
Consistently and accurately calculating the carbon impact of our design work is an essential step toward achieving our net zero goals. This year we launched the **Carbon Loop Dashboard**, a platform that allows us to monitor and display our progress in producing these calculations. As of July 2023, we have calculated operational carbon for 100 percent of our active design projects, and we have calculated embodied carbon for 66 percent of our active design projects. We are committed to calculating the whole life carbon impact for 100 percent of our active work.



## Embodied Carbon Task Force, EC101 Tool and EA Tool



% Projects Modeled for Upfront Embodied Carbon



% of Projects by Tool

Having clear and accurate estimates of the carbon impact of a proposed design is a powerful advantage—it allows our design teams and our clients to make informed decisions when it matters the most. This year we launched our Embodied Carbon Task Force, a collective of carbon experts from all disciplines, organized in discipline-specific subcommittees, focused on advancing our knowledge of whole life carbon and on assessing the impact of design choices throughout a building’s life.

The Task Force designed and developed **EC101, an embodied carbon calculator** designed to be used by all teams starting at the concept design and feasibility stages.

Starting from an extensive data collection effort on all our projects, our Structural Engineering team developed the **Environmental Analysis Tool (EA Tool)**, an application that estimates the whole-life carbon emissions of various building types with consideration of initial construction, operation, service life, repair after hazardous events, and deconstruction.

These tools are enabling our design teams and clients to make confident, data-driven decisions early in the design process to reduce embodied carbon impact.

## SOM Design Guides

This year, we updated and published four design guidebooks that serve as an essential reference for SOM project teams across the globe: Active Design Guide, Passive Design Guide, Materials Design Guide, and Net Zero Design Guide. Used during the conceptual and design stages of every project we undertake, these guides outline strategies and evaluation criteria for reducing carbon impact.



01

02

03

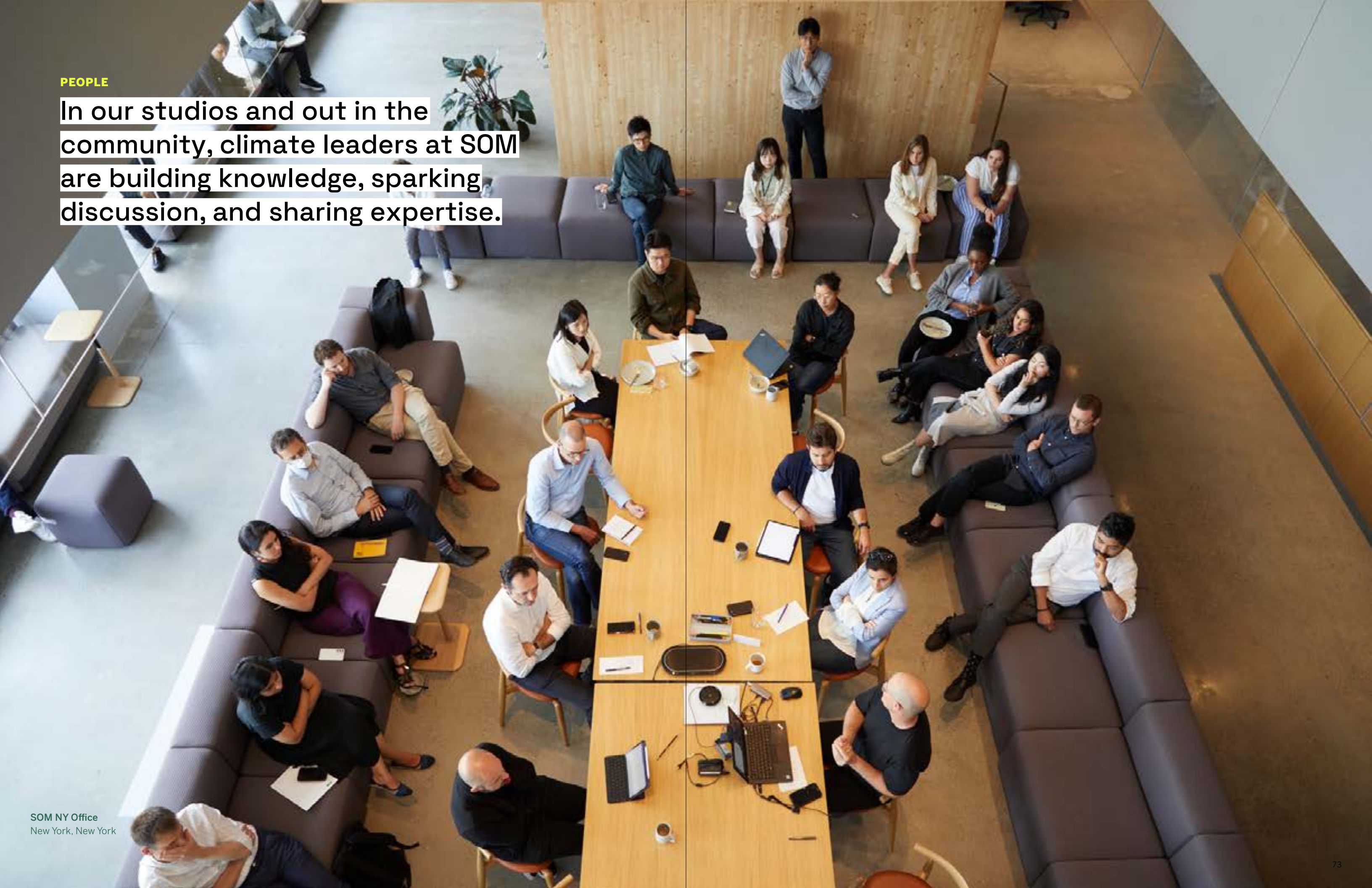
Practice

Projects

People

**PEOPLE**

**In our studios and out in the community, climate leaders at SOM are building knowledge, sparking discussion, and sharing expertise.**



PEOPLE

# Meet our Sustainable Engineering Studio



**SOM's Sustainable Engineering Studio is a global and interdisciplinary group of sustainability leaders and experts committed to fighting climate change through design solutions, while enhancing the health, performance and environmental footprint of the built environment.**

A holistic sustainability and environmental approach is the foundation of our fully integrated design process across all disciplines.

Our studio includes environmental engineers, MEP/FP engineers, sustainability specialists, computational fluid dynamics experts, and performance analysts. This integration allows the team to investigate, identify and implement the most efficient solutions while assessing their impact holistically. Our team works with advanced tools and simulation engines and in collaboration with all design disciplines to explore new frontiers in sustainability.

Our team makes use of the following processes and tools to test for the feasibility and effectiveness of each proposed solution:

- Dynamic urban scale energy and operational carbon modeling
- Urban comfort studies
- Whole life carbon assessment modeling
- Parametric simulations
- Whole building energy simulations
- Computational fluid dynamics (CFD) simulations
- Facade performance and thermal modeling
- MEP engineering
- Water and waste balance calculations
- Renewable energy assessment

## Firmwide SES Leaders

In each of our offices, Sustainable Engineering Studio leaders bring insight to local project teams while sharing knowledge across our global firm.

SF	CH	NY	LON	SH	HK
Shona O'Dea Mohammad Salamati	Luke Leung Marzia Sedino Ishac Koussa Mike Filar Natalia Quintanilla Nicholas Chan Kristina Lundeen Erisa Randazzo Paul Gangloff Elizabeth Saliba Margaret Hamielec Hailey Washington	Sigal Shemesh Ching Che Huang Deva Shree Saini Daye Um	Mina Hasman James Woodall Herman Calleja Mirko Farnetani	George Sun Ze Li	Stefano Tronci

## Sustainability Leaders on the Move

As we continue to bolster our global team of sustainability experts, we made several key hires and strategic promotions this year.

**Stefano Tronci** joined SOM as Associate Principal and Asia Pacific Sustainability Lead in October 2023, based in Hong Kong. **Shona O'Dea** joined SOM as Senior Associate Principal and Sustainability Director in May 2023, based in San Francisco.

PEOPLE

# Our Climate Leaders in the Spotlight

## Bringing Sustainability Expertise to Greenbuild

At the 2023 Greenbuild International Conference in Washington, D.C., three climate and sustainability leaders from SOM spoke on topics in sustainability, resiliency, and wellness. **Luke Leung** presented "Introducing ASHRAE's Whole Life Carbon Design Guide for Building Systems"; **Yasemin Kologlu** presented "Unlocking Adoption of Sustainable Building Practices"; and **Shona O'Dea** spoke on "Sensors and Workplace Strategy: Leveraging Technology to Elevate the Workplace Experience."



## Sigal Shemesh Shares Insight on Passive House Design

**Sigal Shemesh**, SOM Associate and Sustainability Lead, spoke at the Passive Low Energy Architecture (PLEA) in Santiago, Chile, in November 2022 on the importance of indoor environmental quality in Passive House residential buildings. She also presented at the Society of Facade Engineering Conference in New York City in April 2023 on design optimization to reduce embodied and operational carbon.



## Ellen Lou Presents Strategies for Equitable Community Development at APA National Planning Conference

In April 2023, American Planning Association's 2023 National Planning Conference included the session "Strategies for Equitable Community Development." SOM Urban Design and Planning Principal **Ellen Lou** spoke about ways to strengthen social infrastructure and improve health and livability in marginalized neighborhoods.

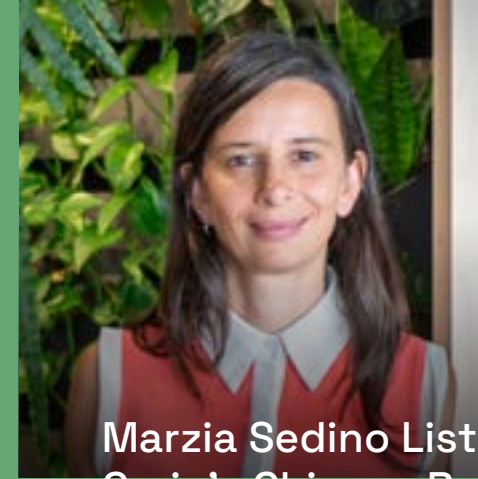
[→ Learn More](#)



## Yasemin Kologlu Named Crain's New York Notable Leader in Sustainability

Principal **Yasemin Kologlu** was selected to the 2023 Crain's New York Business Notable Leaders in Sustainability list. Honored among 50 leaders from across the industry in New York City, Yasemin was recognized for her role in leading SOM's efforts to transform the building industry's response to the climate crisis, through projects including Urban Sequoia.

[→ Learn More](#)



## Marzia Sedino Listed in Crain's Chicago Business Notable Women in STEM

Selected as one of 100 influential women working in STEM professions, **Marzia Sedino** has been recognized for her role in advancing climate action and sustainability in the built environment. A leader of SOM's sustainability practice, Marzia collaborates with environmental and MEP engineers, facade consultants, fluid dynamics specialists, performance analysts and ecologists to minimize the carbon footprint and environmental impact of the built environment at all scales.

[→ Learn More](#)

## Interview in Architect Magazine: Land Use and Carbon Ecosystems

Architecture 2030 fellow Kira Gould spoke with SOM's **Yasemin Kologlu** and **Ellen Lou** about the firm's Urban Sequoia and Square Mile Carbon Study projects. They discuss how teams at SOM are measuring carbon impact in the context of building uses, density, transportation, and open space—an approach that should influence climate policy and the city and regional level.

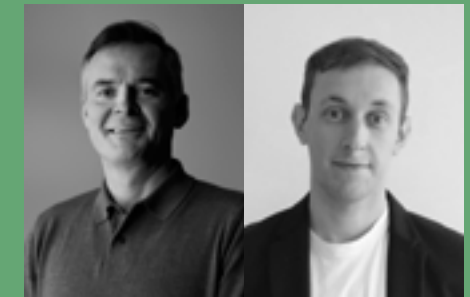
[→ Learn More](#)



## Kent Jackson and James Woodall Join Green Urbanist Podcast

The Green Urbanist, a podcast which explores how architects and urban designers can fight climate change, aired a conversation with SOM Design Partner **Kent Jackson** and Sustainability Lead **James Woodall**. They discussed SOM's target for all projects to reach whole life net zero carbon by 2040 and the firm's ambitions to promote regenerative design.

[→ Learn More](#)



## SOM Hosts Climate Toolkit Workshop

In March 2023, interior designers and manufacturers gathered in SOM's New York office to review and enhance Metropolis Magazine's Climate Toolkit for Interior Design, a resource the magazine created as a resource for practitioners building low-carbon spaces. **Yasemin Kologlu**, **Charles Harris**, **Jackie Moran**, and **Sigal Shemesh** shared their insights on sustainable strategies on topics ranging from material use to creating flexible, long-lasting interiors.



## How Urban Planners Design for Walkability: Lessons from One Utah Community

Urban designer **Peter Kindel** presents the framework plan for The Point as a case study in designing walkable communities. The article was published by the World Economic Forum's Center for Urban Transformation, a global platform for practical solutions that increase resilience and future-readiness in cities.

[→ Learn More](#)



PEOPLE

# In the Press



## Chicago Architect Magazine Reports on How Design Firms are Confronting Climate Change

In the Fall 2023 issue of Chicago Architect magazine, **Marzia Sedino**, Senior Associate Principal and Sustainability Leader, describes how the firm's integrated team of architects, engineers, and sustainability experts works to embed environmental principles at the heart of every project. By aligning sustainability priorities with client concerns, Marzia says, the team has been able to achieve bigger benefits than either the design team or the client had imagined.

[→ Learn More](#)

## Designing a Safer Office: The New York Times Features SOM's Air Quality System

How safe is your office air? In a recent The New York Times article by Emily Anthes, SOM showcased its commitment to employee health and safety, going beyond the traditional workspace mindset. "As architects, they viewed the office not just as their own workplace, but also as a laboratory," writes Anthes.

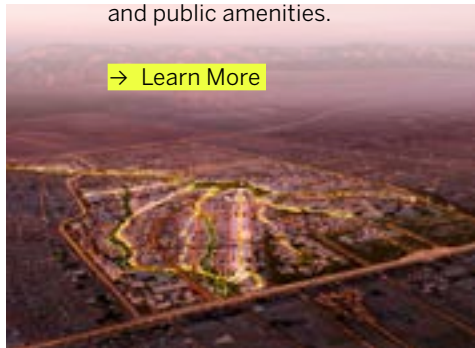
[→ Learn More](#)



## CNN Style Reveals SOM's Design for Oman's First-Ever Smart City

In August 2023, CNN Style reported on SOM's design of Sultan Haitham City. **Bernhard Rettig**, SOM Senior Associate Principal, describes how "smart infrastructure [will be used to] monitor environmental factors such as air quality and water management." The city provides a new model for sustainable development in the Middle East, with a mix of housing types within walking distance of parks and public amenities.

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## Civic Structure Opts for Timber and Reaps Rewards

Engineering News-Record published a deep dive into the design and delivery of San Mateo County Office Building 3 (COB3), the first LEED Platinum timber civic building in the United States. The article by ENR's Tim Newcomb explores the decision-making that allowed COB3 to achieve net zero energy, reduce embodied carbon, and maintain a cost-conscious public budget. The story includes perspectives from SOM's **Eric Long**, Truebeck Construction's Mark Whiley, and San Mateo County Project Development Unit's Adam Ely.

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## Architectural Record Features the City of San Francisco's LEED Platinum Offices

The magazine's March 2023 "Civic Architecture" issue features the LEED Platinum certified **49 South Van Ness**. This SOM-designed building manifests the city of San Francisco's efforts to streamline and modernize its workplaces and services. "With its high-performance attributes, its worker-centric features, and its contributions to the broader urban environment, the citizens of San Francisco clearly got their money's worth, and more," writes Joann Gonchar.

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## With its Carbon Neutral Campus, UC Merced Sets the Example

In a survey of sustainable university campus architecture, Architectural Record describes how SOM's master plan for a major expansion at UC Merced allowed the university to achieve its carbon neutrality goals ahead of schedule. In the article, Design Partner **Michael Duncan** describes the design team's strategies to achieve high-performance, energy-efficient development on a tight budget.

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## Planning Magazine Features SOM's "20-Minute Suburb" Design Concept

In the January 2023 issue of Planning Magazine, a publication of the American Planning Association (APA), SOM's City Design Practice introduces "the 15-minute city's cousin": the 20-minute suburb. Led by Principal **Ellen Lou**, the San Francisco-based team has developed the concept that combines zoning reform, increased density, sustainable transportation, and regional connectivity as an alternative to car-centric sprawl, fostering more livable, walkable, and human-focused suburban neighborhoods.

[→ Learn More](#)



## SOM Discusses Bio-Concrete in Architectural Record

In the article "Decarbonizing Concrete—The Ubiquitous Material Gets a Climate Friendly Makeover," Joann Gonchar highlights various strategies for reducing concrete's environmental impact. Among the industry professionals featured, Managing Partner **Brant Coletta** and Design Principal **Yasemin Kologlu** discuss our ongoing partnership with Prometheus Materials to turn the built environment into a climate solution.

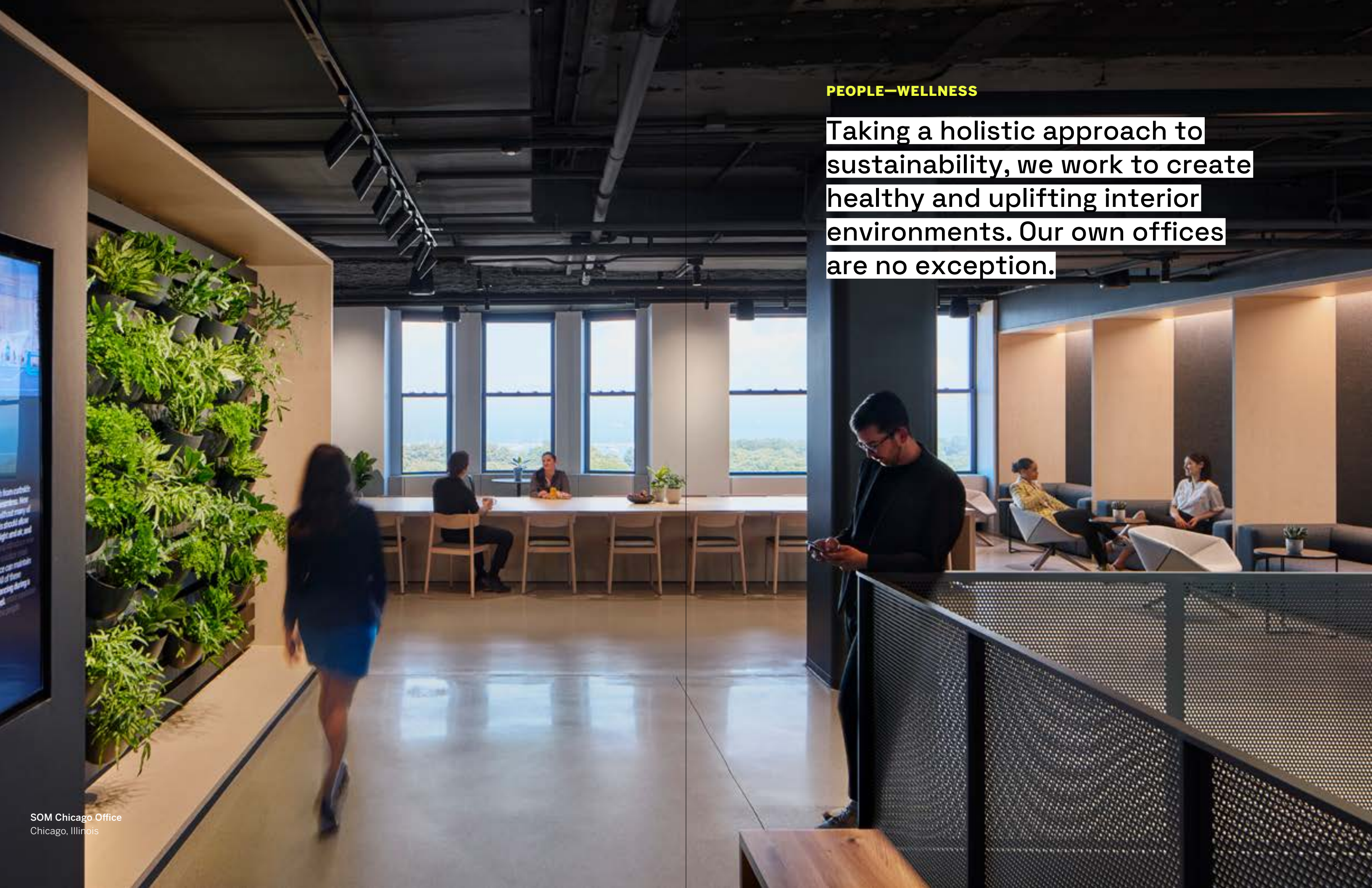
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**PEOPLE—WELLNESS**

Taking a holistic approach to sustainability, we work to create healthy and uplifting interior environments. Our own offices are no exception.



# Keeping Wellbeing at the Forefront



**Our broad definition of sustainability encompasses the human experience—and we’ve shaped our own workplaces around the world to provide healthy and uplifting spaces.**

In recent years, SOM has undertaken major renovations of most of its major offices. In designing our own workspaces, we have taken the opportunity to explore and demonstrate what a healthy work environment can be.

Our offices prioritize sustainability and wellbeing through a responsible approach to materials and resources—reflecting our design philosophy of “radical reduction.” With a focus on material science, SOM created a rigorous set of criteria for selecting a sustainable material palette. In our New York office, for instance, we selected carbon-absorbing materials such as cork and white oak, while using the existing concrete floor slabs with no additional finishes.

Each of our workspaces features abundant natural light, enhancing both environmental performance and wellbeing. To reduce noise in open areas, fabric-wrapped acoustic panel ceilings absorb sound across our open studio spaces. All of these strategies contribute to a workplace where health and wellbeing come first.

## Air Quality Monitoring

Our offices are designed with an awareness that indoor air quality has a profound effect on health and wellbeing. We have incorporated high-efficiency particulate air filters that dramatically enhance air quality. Our system tracks particulate matter, volatile organic compounds, and carbon dioxide. While we started implementing these systems prior to 2020, the pandemic accentuated the importance of indoor air quality and ventilation. Our sensors are able to track CO2 levels and adjust ventilation when needed, maintaining optimal indoor air quality throughout the workday.

In June 2023, heavily polluted outdoor air from Canadian wildfires put our filtration and monitoring systems to the test. A real-time display in our New York office verified “very good” indoor air quality, putting our staff at ease, even against the dramatic backdrop of orange skies. The ventilation system filtered smoky air, trapped pollutants, and kept indoor particulate matter levels low.

## WELL and LEED Certifications

As we continue to improve our office environments, we are pursuing certifications to verify the environmental and quality of life benefits that they bring. All of our offices are certified by LEED—the industry’s most widely used green building rating system—at the Gold or Platinum level, or are targeting certification.

In addition, we have adopted the WELL Building Standard as a framework for measuring and certifying features of our offices that support human health and wellbeing. Already our New York, Chicago, and Los Angeles offices are WELL Certified, and we are currently pursuing certification for all of our offices worldwide. The WELL Building Standard aligns with our firm’s holistic approach to health in the built environment.



# Designing a Better Workplace



## Daylight Hour, Every Day

**4,914**  
kilowatt-hours saved  
across SOM offices

For several years SOM has participated in Daylight Hour, an annual campaign to raise awareness about energy efficiency in office spaces. On one day each year, participants from all over the world commit to turning off the lights for one hour. The cumulative impact is substantial: the 2023 global Daylight Hour campaign saved 217,555 kilowatt-hours of electricity.

We asked ourselves, why limit Daylight Hour to just one day a year? At SOM we have now adopted Daylight Hour as a daily practice. In every office, from noon to 1pm, we turn the lights off and rely on natural daylight. As a result, in 2023 we saved 4,914 kilowatt hours across all our offices worldwide, equivalent to the carbon sequestered by 4.2 acres of U.S. forests in one year. It's an everyday reminder that small actions can make a big difference when adopted at a global scale.

## We Value Comfort

User experience in our New York office ranks in the **top 5%** of workplaces worldwide.

Our design teams have comprehensively reshaped many of our own workspaces around the world—a process informed by deep engagement to better understand employees needs, desires, and preferences in the workplace. Our new office in New York exemplifies the impact of this transformation.

We worked with Leesman, the world's largest workplace experience database, to conduct a comprehensive survey to benchmark performance and user satisfaction. Assessing a range of factors including productivity, physical features, and service features, the survey ranked our New York office in the top 5 percent of workplaces worldwide.

**74.8 Leesman+**  
Top 5% Workplaces

**64.2 Leesman Benchmark**  
Worldwide Average

Leesman Score  
Overall index of workplace experience, scale of 0–100; 70 or above indicates “high performance” workplaces





## Driving change, today and into the future.

As 2023 draws to a close, we are energized by our projects on the boards and the work that lies ahead. Sustainability has always been at the center of SOM's ethos, and its definition has evolved significantly over our 87 years in practice. Today, we are better equipped than ever—with more sophisticated design tools, a clear system for whole life carbon analysis, and a commitment that is increasingly shared among our clients across the public and private sectors—to make a positive impact through our design and engineering work. As we continue to build partnerships with innovative companies and government leaders, we are optimistic that if we work together, we can meet the building industry's 2040 decarbonization goals.

This month we are excited to return to the United Nations Climate Change Conference, an opportunity to connect with climate leaders from around the world. Our presence at COP28 in Dubai includes a pavilion that demonstrates design principles for a circular economy—which we hope will be a starting point for new conversations and partnerships. Building on our work with the AIA and the White House Office of Domestic Climate Policy, we are eager to help craft policies that will enable architects and engineers to decarbonize at the local, national, and international level.

Looking at our own progress, we continue to evaluate and adopt rigorous standards for measuring the environmental impact of our work and our operations. We are thrilled to announce that SOM has adopted the near-term targets of the Science Based Targets Initiative (SBTi). As we work with SBTi to validate our firm's climate targets, we look forward to reporting back on our progress in a robust, transparent, and consistent manner.

While we are encouraged by this momentum, we acknowledge that faster and more radical transformation is needed across the building industry worldwide in order to avert the most damaging effects of climate change. Decarbonization will take not only designers, but also clients and policymakers setting ambitious goals and acting together. As we continue to learn, to innovate, and to push for broader and more decisive action, we urge you to join us in this effort.

—  
**SOM Climate  
Action Group**

