

The Architect's Newspaper

May 2024

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What to do with plastic waste? The Good Plastic Company has an answer [page 8](#)

Building with raw earth, popular in Europe, is slower to catch on in the U.S. [page 10](#)

Michael Zaretsky and Marlon Blackwell remember Ohio architect Terry Boling [page 13](#)



AN treks across the country to see new and ongoing projects by WRNS Studio [page 18](#)

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WHAT IF THE WHOLE HOUSE WAS THE HILL?

Hill House, designed by Donaldson + Partners, is the result of an all-too-rare creative alignment between architect, client, and builder. [Read on page 22.](#)



JOE FLETCHER

The Latest on Silicosis

Engineered stone is often hailed as a wonder material. It's cheap, durable, recyclable, and attractive. But it's also killing people, according to medical researchers and public health officials around the world. They're linking a surge in severe cases of silicosis, a progressive and incurable lung disease, to the material's growing popularity. Silicosis is one of the oldest occupational diseases. But the "rock dust menace," as *The New York Times* described it in 1928, was mostly reined in in the U.S. after safety regulations like wet cutting, ventilation, and respirators were enacted. However, engineered stone, also known as quartz, has significantly higher concentrations of silica than natural stone—around 90 percent (granite is around 45 to 50 percent and marble is typically below 5 percent).

Because of this, Australia banned engineered stone, and regulators in California may do so too, if widespread noncompliance with emergency [continued on page 11](#)

Terra-Cotta Tradition

Christopher Payne visits Gladding, McBean. [Read on page 40.](#)



CHRISTOPHER PAYNE

City Limits

Anjolie Rao reviews a new book by Megan Kimble. [Read on page 80.](#)



LEONID FURMANOV

PATTERNS: SFV Placid

Victory Boulevard cuts a straight line through the suburban San Fernando Valley. It's a 20th-century time capsule: a wide swath of asphalt lined by lowrise retail, gas stations, and fast food outlets that sprung up after acres of orange groves were bulldozed. More recently, infill housing has sporadically plugged in the gaps between strip malls and midcentury apartment buildings, but as a place, the Valley's commercial corridor is bleak and sunbaked, even on a winter day.

Victory Wellness Center sits within this context, on a banal stretch in North Hollywood. Georgina Hultich and Marcelo Spina of Los Angeles-based PATTERNS transformed a vintage supermarket and "Valley Brutalist" office building (think thick, beige stucco and tinted glass) into a medical campus that is in dialogue with what passes for urbanism in these parts. With a few formal gestures—some slicing and carving out of the existing market structure—their design [continued on page 9](#)

AN FOCUS

Facades

Surficial case studies and products. [Read on page 33.](#)

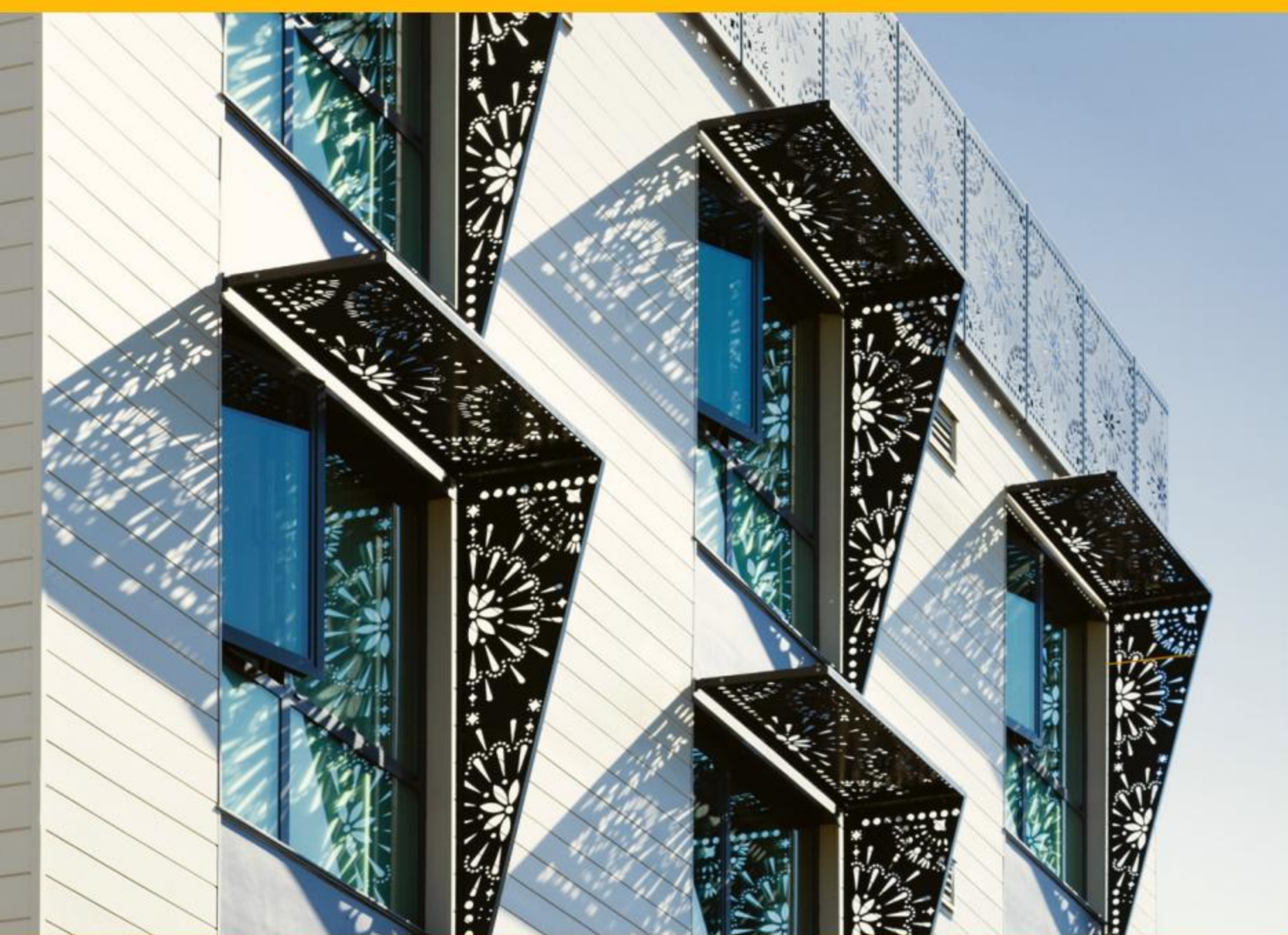
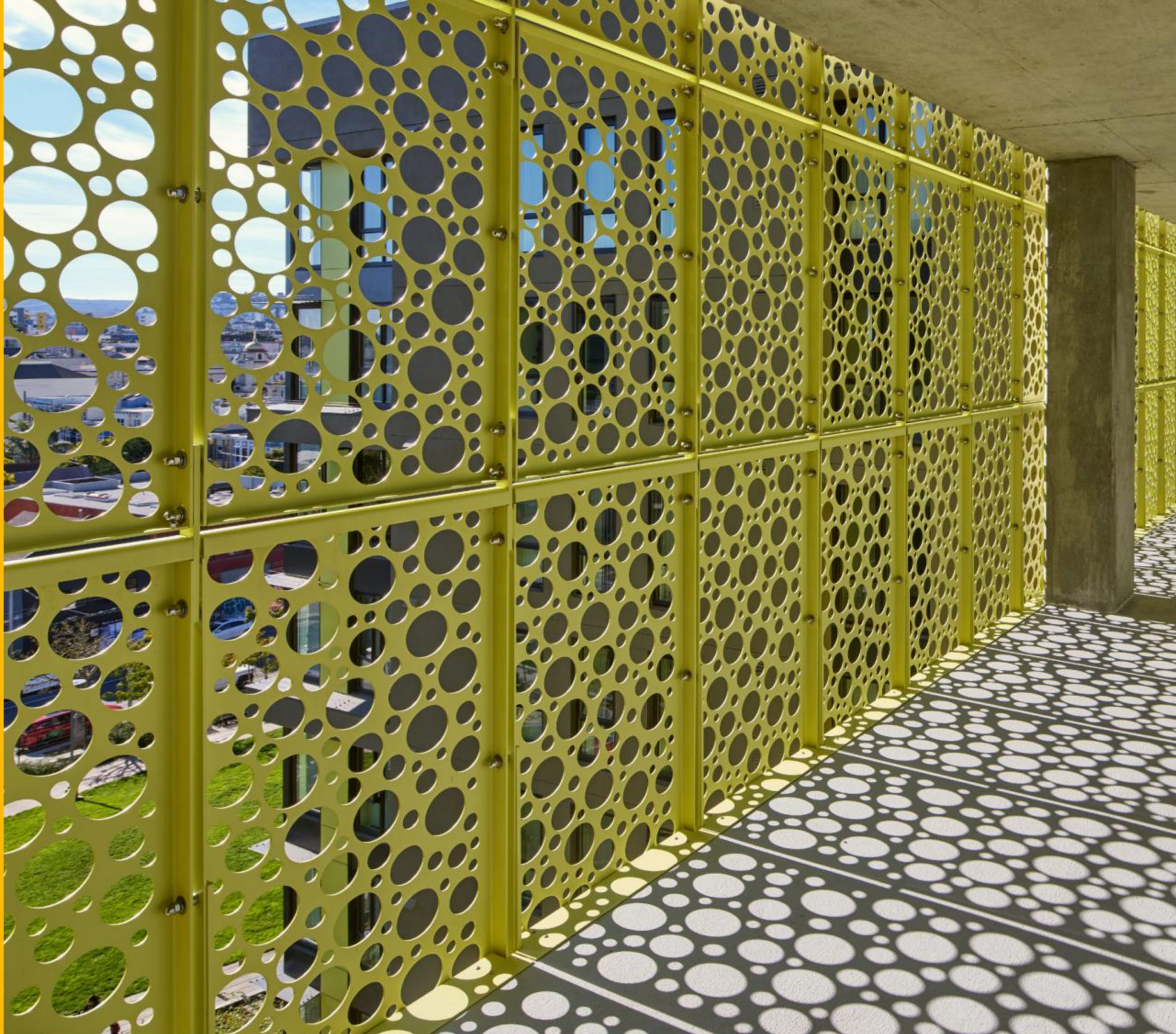


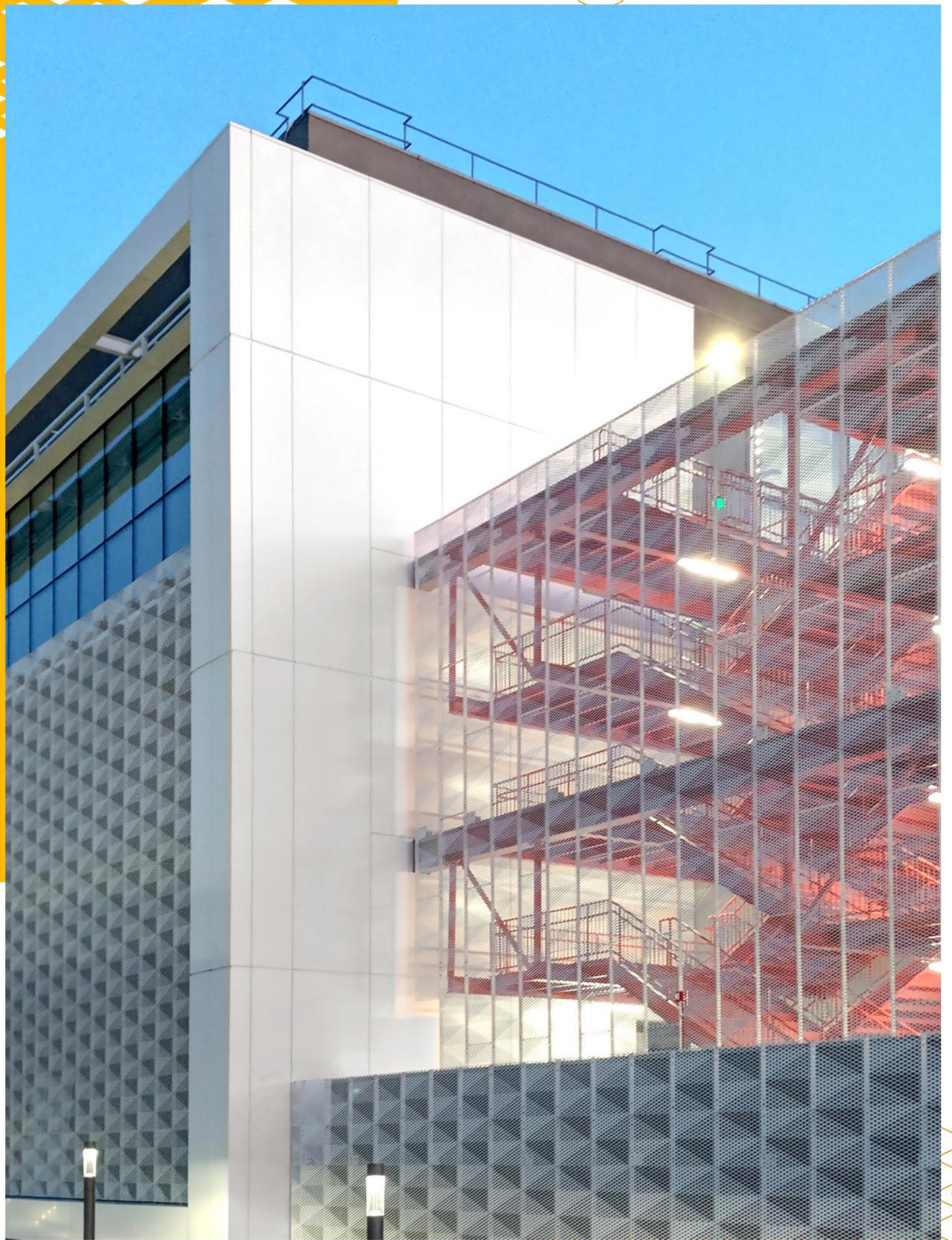
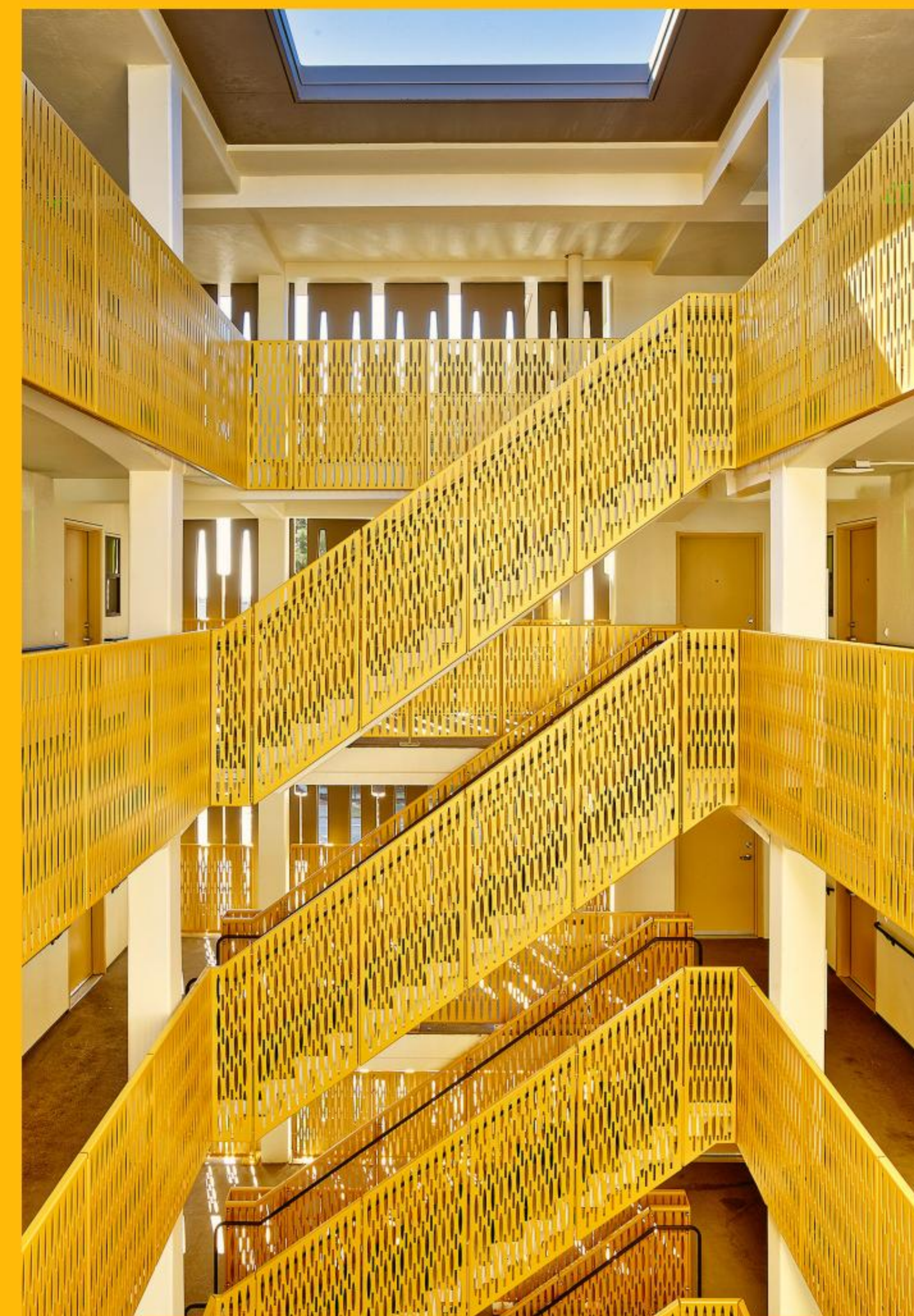
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In Formation



Welcome, dear reader, to *AN*'s annual Facades issue. This effort, which follows an especially rousing Facades+ New York conference, aims to deliver a set of inspiring case studies and a bevy of products for your review, starting on page 33.

In particular, the overall issue takes up the traffic of materials as its core concern. Witness KPF's reskinning of 660 Fifth Avenue (page 56) or an interview with Daniel Marshall, who founded Re-Assembly to research how to reuse architectural glass (page 66). Also check out the photographs from Christopher Payne's series about Gladding, McBean, a terra-cotta manufacturer in California, along with text by Elizabeth Snowden about her recent visit (page 40).

This theme extends to a trio of features that reveal how contemporary architects are closely involved in construction. A pair of houses on opposite ends of the cost spectrum explore concrete, CLT, and cork: I vouch for Donaldson + Partners's Hill House in Santa Barbara, California, as a masterclass of curvy, voided concrete expression (page 22), while David Heymann writes about a home by Cross Cabin in Austin that minimizes the use of oil-based building products (page 26). Then, follow Adrienne Economos Miller's visit to Assembly House 150 in Buffalo, New York, which demonstrates how artist-architect-educator Dennis Maher is educating new generations of craftspeople (page 28).

Farther back in the issue, Anjulie Rao reviews Megan Kimble's *City Limits*, which chronicles Texan battles over freeway expansion (page 80). For fun, Jason Sayer responds to Charles Holland's new book about how we enjoy architecture (page 82).

It's a similar tune up front: Diana Budds reports on the silicosis crisis (page 11); Oscar Fock files on the rise of raw earth (page 10); William Richards visits an in-progress mass timber building in Paris by Studio Gang for the University of Chicago (page 14); two residential renovations are assessed by Inga Saffron in Philadelphia and *AN*'s design editor, Kelly Pau, in Brooklyn (pages 16 and 17); and *AN*'s news editor Dan Roche gets the story of the Good Plastic Company (page 8), among other timely articles.

The primacy of material was a major theme during recent events I attended. At last month's Salone del Mobile in Milan, Jeanne Gang sat in a green-carpeted arena designed by Formafantasma to discuss her new book, *The Art of Architectural Grafting*, published by Park Books. For Gang, grafting represents an architect's ability

to intervene in existing buildings, an idea that is both historical and urgently needed to help reduce the carbon impact of the construction industry. "I'm not interested in designing stuff for Mars, because the emergency is here," she said.

The night before, a panel convened in a high-ceilinged apartment to discuss *Louis I. Kahn: The Last Notebook*, a facsimile edition and supporting volume published by Lars Müller Publishers. Present were Sue Ann Kahn, Kahn's daughter; Gregory Kahn Melitonov, Kahn's grandson; Marco Sammiceli, director of the Triennale's Museo del Design Italiano; and moderator Deyan Sudjic. (Mark Masiello, founder and CEO of Form Portfolios, also spoke to tease an upcoming collection of Kahn's furniture.) The notebook, reproduced with the original ink stains across its cover, is half empty; it preserves the unfilled pages alongside the scrawled sketches, notes, names, and phone numbers. The release, a longtime project for Sue Ann, gives an intimate look into the architect's inner life.

Earlier in April, I witnessed *Unfinished Business*, a tribute to historian and architect Jean-Louis Cohen at the Canadian Centre for Architecture (CCA) in Montreal. Seated around a large table, Cohen's former students and collaborators—Samia Henni, Anooradha Iyer Siddiqi, Vanessa Grossman, Paul Bouet, Claire Zimmerman, and Christina Crawford—shared ongoing projects and remembrances, while Sylvia Lavin provided responses and read a message from Frank Gehry. A presentation from Cohen's daughter, Mathilde (pictured above), about his "unfinished autotopobiography" was particularly moving. (She also shared a rare photo of Cohen with hair.) His archive, numbered AP210 and donated to the CCA in 2019, was a key concern: CCA's Martien de Vletter and Jillian Forsyth shared the current thinking about its organization and the additional paper and digital resources from the recent era of Cohen's prolific scholarship. The event was an emotional reminder of how a lifetime of thought—materialized as boxes of papers, digital folder structures, gigabytes of travel photography, and countless emails—can be converted into an accessible repository to be shared.

We are all works in progress, each a temple of our own incompleteness. I often think of the poem "blessing the boats" by Lucille Clifton. Its closing lines provide a welcome benediction: "may you in your innocence / sail through this to that." **Jack Murphy**

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Corrections

The cover illustration of the March/April issue omitted mention of HILLWORKS as an Emerging Voices winner.

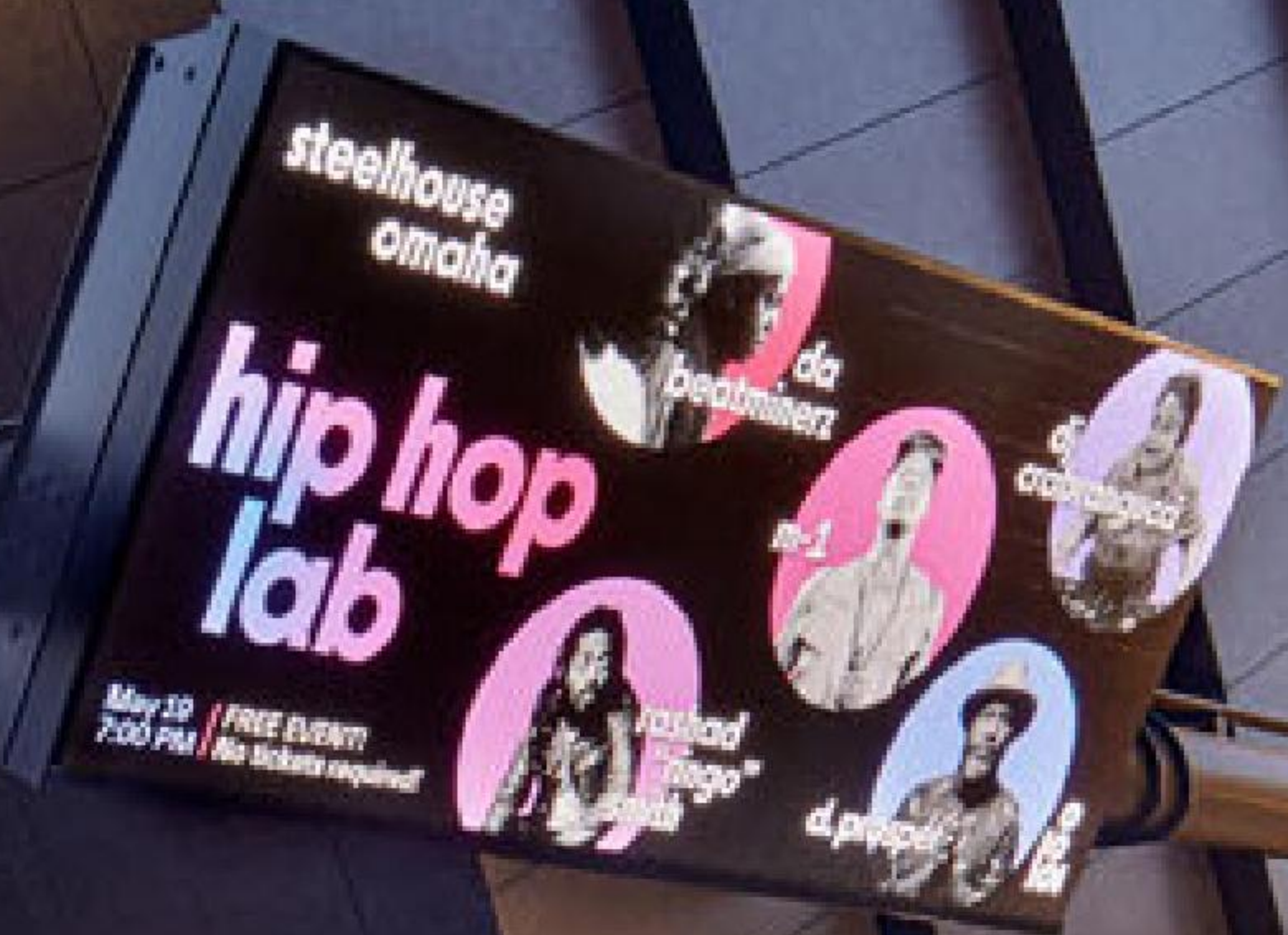
A previous feature mistakenly listed the name of its subject as the Paul J. Schupf Center. The building is actually named the Paul J. Schupf Art Center.

A previous feature printed only the name of Susan T. Rodriguez as designer of the Paul J. Schupf Art Center, when it was the collective work of Rodriguez's firm, Susan T. Rodriguez Architecture and Design.

project: Steelhouse Omaha
architect: Ennead Architects
finish: Brooklyn Steel
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In Arizona, Johnston Marklee unveils Ray Phoenix—Dasha Zhukova’s third “arts-inspired” housing venture

In Phoenix’s Roosevelt Row Arts District, Johnston Marklee is designing multifamily housing with Ray, a real estate company founded by Dasha Zhukova. Ray Phoenix is the third major real estate project undertaken by Dasha Zhukova since she founded Ray in 2019: In Philadelphia, Leong Leong’s Ray Philly recently opened, and later this year, Ray’s first New York project, Ray Harlem, will open on Fifth Avenue at 125th Street. **Dan Jonas Roche**

Chris Pratt demolishes Craig Ellwood’s Zimmerman House for new mansion

The Hollywood actor Chris Pratt, alongside wife Katherine Schwarzenegger, bought Craig Ellwood’s Zimmerman House in Brentwood, California, in January 2023. Since the \$12.5 million purchase, the actor and his wife (the eldest child of Arnold Schwarzenegger) have razed Ellwood’s midcentury residence to make room for a new home that will be designed by architect Ken Ungar. **Moses Jeanfrancois**



Phase two of the Rothko Chapel’s campus expansion plan by ARO and Nelson Byrd Woltz breaks ground in Houston

Rothko lovers: Take note. Shovels broke ground in Houston this week on phase two of the Opening Spaces campus plan, a \$42 million, multiyear restoration and expansion of the world-famous Rothko Chapel. The renovation is led by New York-based Architecture Research Office (ARO), together with Nelson Byrd Woltz Landscape Architects and the construction company Linbeck Group. **DJR**

Demolition of Mary Miss’s land art installation at Des Moines Art Center is paused, following lawsuit by the artist

In Iowa, plans to demolish a land art installation from 1996 by artist Mary Miss at the Des Moines Art Center have been stopped, at least for the time being. A temporary restraining order was announced on April 8, the same day demolition of *Greenwood Pond: Double Site* was slated to begin. In order to stop the dismantling of the art piece, including its built elements and ecological landscape, Miss filed a lawsuit in federal court on April 4. **KK**



An international competition launches for Helsinki’s New Museum of Architecture and Design

A forthcoming museum of art and architecture in Helsinki launched an international open competition to find a design team to transform a vacant waterfront site into a cultural gathering space in the city’s South Harbor. Planned to open in 2030, the New Museum of Architecture and Design will focus on “democratizing the tools of design,” redefining Helsinki as a cultural destination. **María José Gutiérrez Chávez**

The Vessel to reopen in Hudson Yards, replete with new safety nets for suicide prevention

Love it or hate it, Vessel by Thomas Heatherwick will reopen to the public soon in Hudson Yards, New York, albeit with new protective nets designed to prevent visitors from jumping off. The new design forebodingly recalls the suicide nets attached to buildings at Foxconn—Apple’s notorious factory complex in Shenzhen, China. **DJR**

Universal Hall, a well-known building in Skopje, North Macedonia, partially destroyed by fire

Universal Hall, a monumental 1965 cultural venue designed by Vladimir Jaroslav, Ljubomir Stankov, and K. Stankova-Mutafova, caught fire in Skopje, North Macedonia, on April 9. Repairs were happening on the midcentury building’s signature dome when a massive fire broke out, destroying its roof. Nobody was injured, but the catastrophe has caught the attention of architects and preservationists. **DJR**

Demolition request for Al Beadle’s White Gates residence in Phoenix is withdrawn

Al Beadle’s 1957 White Gates residence was in danger of demolition in Phoenix, Arizona. Its midcentury style was part of a new wave of fun-in-the-sun lifestyle advertised at the time to those looking to move out West. Its white exterior works well with the lush green vegetation Arizona’s desert landscape has to offer. In March, the residence received a permit for its demolition and, after much uproar from the architecture and Arizonan community, the permit application has now been withdrawn. **MJ**

FCBStudios releases vision for Liverpool’s International Slavery Museum and Maritime Museum renovation

Feilden Clegg Bradley Studios (FCBStudios) has released renderings of its design for Liverpool’s International Slavery Museum and Maritime Museum renovation. Last January, *AN* reported that National Museums Liverpool officials replaced Adjaye Associates with FCBStudios for the \$74 million project. **DJR**

Renowned rebellious Italian designer and architect Gaetano Pesce dies at 84

A leader of Italy’s Radical Design Movement, architect, designer, and urban planner Gaetano Pesce passed away on April 3 at the age of 84. On April 4, the news was confirmed via an Instagram post from his studio, which cited health-related issues, especially in this past year. **Kelly Pau**



Portland Art Museum announces major expansion project by Vinci Hamp and Hennebery Eddy Architects

The Portland Art Museum, completed in 1932 by Pietro Belluschi, is set to undergo a massive expansion. Vinci Hamp Architects, a Chicago office, will collaborate with the local studio Hennebery Eddy Architects on the \$111 million project. **DJR**

Eduardo Souto de Moura unveils new office building in Miami Beach

New York-based developers Sumaida + Khurana recently announced the design for an office building in Miami Beach, Florida, by Pritzker Prize-winning Portuguese architect Eduardo Souto de Moura. When built, it will be the architect’s first completed project in North America. **DJR**

Albert Frey and A. Lawrence Kocher’s Aluminaire House opens as permanent exhibit in Palm Springs

Albert Frey and A. Lawrence Kocher’s Aluminaire House has finally been reassembled and installed in Palm Springs, California. After a two-year fundraising campaign and an assembly period that took several months, the all-metal housing prototype appears to be quite at home at the Palm Springs Art Museum. **Kristine Klein**



Johnston Marklee and SWA complete transformative renovation for the Hilbert Museum that draws from its collection

When the 20th century began, California was a landscape of rolling hills. Westward expansion changed this. The Hilbert Museum of California Art at Chapman University houses a collection of art from this seminal period in the state’s history within a recent expansion by Johnston Marklee and SWA. **Kristine Klein**

Diller Scofidio + Renfro unveils expansion for The Broad in downtown Los Angeles

Joanne Heyler, founding director of The Broad, announced recently that Diller Scofidio + Renfro was tapped to help expand the museum. The firm completed the downtown Los Angeles art museum with its distinctive “honeycomb-like” facade in 2015. **DJR**

Frank Lloyd Wright Foundation taps Sasaki to lead a comprehensive plan for Taliesin West

The Frank Lloyd Wright Foundation recently announced that Sasaki will lead a comprehensive plan for Taliesin West, Frank Lloyd Wright’s retreat in Arizona’s Sonoran Desert. **DJR**

Richard Serra, an artist who shaped space with steel, dies at 85

Richard Serra died on Tuesday, March 26, at his Long Island home in Orient, New York, at age 85. News of the canonical sculptor’s passing was confirmed to *The New York Times* by Serra’s lawyer, John Silberman, who said the cause was pneumonia. **DJR**

Baltimore’s Francis Scott Key Bridge collapses after it’s struck by a container ship

Over 11 million vehicles cross Baltimore’s Francis Scott Key Bridge annually. Spanning over 1.6 miles, the bridge connects the outer harbor and the Patapsco River. Around 1:30 a.m. on March 26, the bridge collapsed in a quick horror when a large container ship collided with a supporting pillar. **Moses Jeanfrancois**

Diamond Schmitt reveals New Brunswick Museum design

Diamond Schmitt Architects, together with EXP, is expanding the New Brunswick Museum’s footprint with a new facility in the city’s urban center, not far from the Saint John River. The New Brunswick Museum in Saint John, Canada, is the country’s oldest continuously operating museum. **DJR**

Taller Frida Escobedo, DXA Studio, and Workstead unveil Bergen in Boerum Hill

Bergen in Boerum Hill, Brooklyn, is Taller Frida Escobedo’s second residential project in the Big Apple. The 7-story, 209,000-square-foot building will complement its tree-lined street with a sharply angled, rhythmic facade. **DJR**

Margarete Schütte-Lihotzky has her first (posthumous) retrospective in the U.S.

“If I had known that everyone was always talking about it, I would have never made this damn kitchen!” At the Austrian Cultural Forum in New York, a new exhibition, *Margarete Schütte-Lihotzky: Pioneering Architect, Visionary Activist*, captures the full spectrum of the late architect’s contributions to design and society at large. **DJR**



New York architect Jeffrey Beers dies at 67

Jeffrey Beers, founder and CEO of Jeffrey Beers International, died on March 18 after a long battle with cancer, age 67. Beers is remembered for designing several of New York’s most vibrant restaurants, hotels, resorts, and residences. **DJR**

Popular New York print shop Casa Magazines is bought by Iconic Magazines

Iconic Magazines has purchased independent print-media shop Casa Magazines. And while I hadn’t heard of Iconic business owner Hemal Sheth before, I do know the owner of Casa Magazines: Mohammed Ahmed, the “king of print,” who on his birthday announced he is ready to retire at age 73. **Emily Conklin**

Read more news at [archpaper.com](https://www.archpaper.com).

Making Plastic Good

The Good Plastic Company turns plastic waste into a range of surfaces. What's next? Expansion in the U.S.

When Dr. William Chizhovsky founded the Good Plastic Company in 2018, his goal was to produce the world's most sustainable surface materials. Chizhovsky, born in Ukraine, earned his master's degree in management from Harvard and then a PhD from Kyiv National Economic University. His background was in IT management, and he had no prior experience in material sciences, but he noticed that "there's so much greenwashing these days," Chizhovsky told AN. "Our goal from the beginning was to have real impact."

The Good Plastic Company's goal is addressing the 400 million tons of plastic waste that are generated annually worldwide, a phenomenon with disastrous environmental consequences. Today, the company has 76 employees and over 400 clients, including Nike, Adidas, IKEA, McDonald's, Karl Lagerfeld, Jimmy Fairly, Coach, LUSH, Hyundai, Soho House, Samsung, and BMW. Its business model is simple: Convert plastic waste into decorative materials that high-end brands will want to use in their stores.

Today, the Good Plastic Company has one factory in the Netherlands and more recently opened another in Chizhovsky's home country: In 2021, after Russia's full-scale invasion began, Chizhovsky started a new operation at the Bila Tserkva Industrial Park. In both its locations, gigatons of plastic from Germany, France, and other countries are recycled into beautiful, functional items. Detritus like used computer keyboards and bottles that otherwise would have ended up in a landfill or the Pacific Ocean get repurposed for art installations, kitchen countertops, and outdoor lighting, to name a few resulting products.

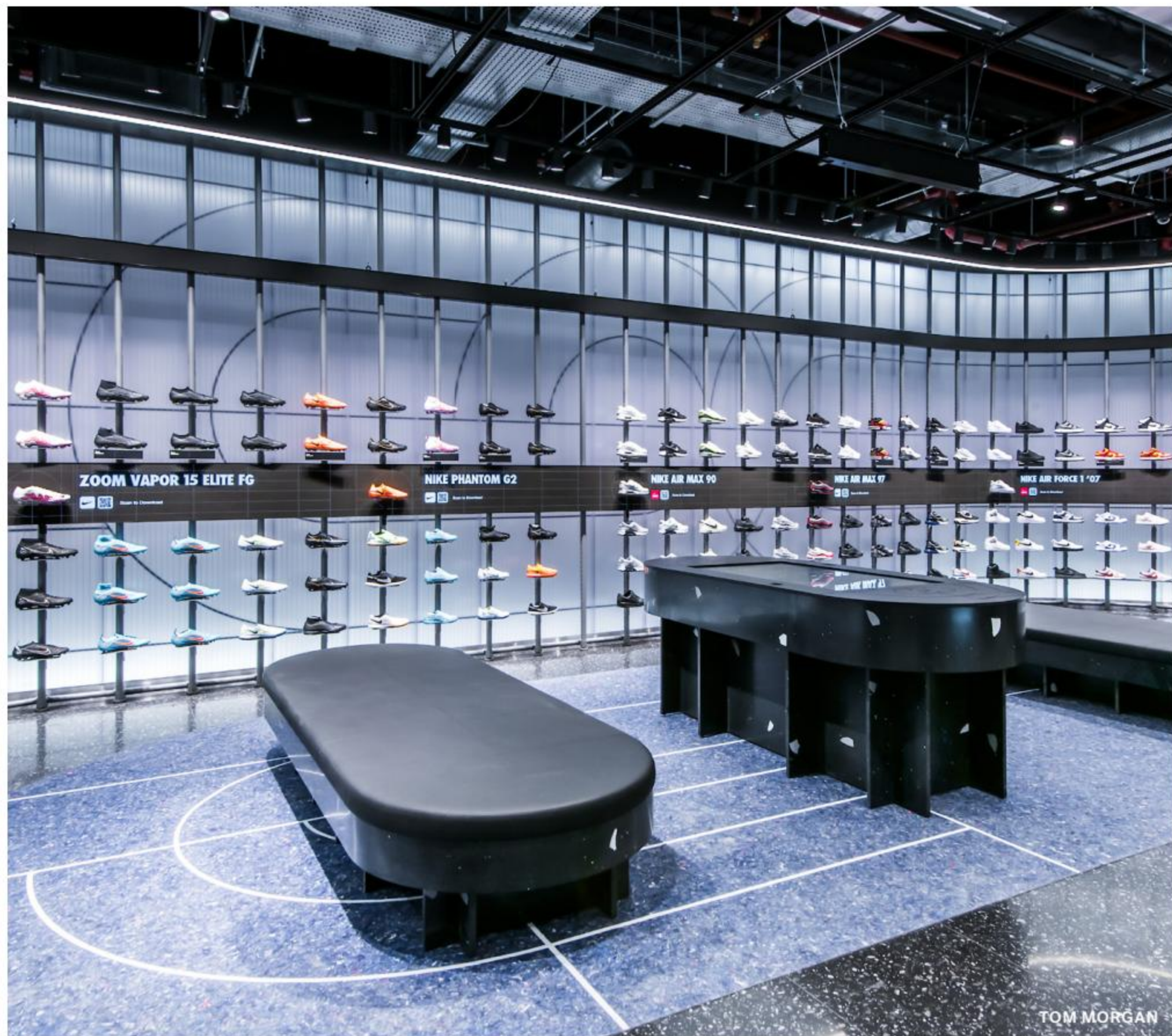
The Good Plastic Company is Cradle to Cradle Certified, one of the most difficult sustainability certifications to get. "Recycling companies gather so much material, but the problem is figuring out what to do with the materials afterward," Chizhovsky said. While the products his company produces are beautiful, the real innovation occurs in its business model: "What we first had to

do was create economic demand for our products. Once that happened, we could produce more, which made our products more affordable. That's how we achieved scalability," Chizhovsky said. "Most surface-materials companies think like architects and designers, not economists."

In its research, the company found that 70 percent of a product's life cycle costs and footprint is determined during the design phase. Thus, for Chizhovsky, "sustainable design really starts at the moment of specification," he said. Despite its environmental consciousness, the materials the company produces never compromise on aesthetics. The surfaces could easily be confused with luxury, polychromatic terrazzo that architects from the Memphis School could have specified. Its flagship product, Polygood®, is made of 100 percent recycled and recyclable plastic panels. The product is used by world-renowned designers for making environmentally conscious furniture.

During Milan Design Week 2024, The Good Plastic Company debuted an installation titled *Hello, Earth Speaking*, which introduced consumers to its process. Looking ahead, Chizhovsky hopes to build a factory in the U.S. next year. The CEO also hopes to help sustainably rebuild Ukraine once the war ends. "Our factory in Ukraine is 1 kilometer from the Romanian border," he said. "Countries around the world emphasize how important it is to rebuild Ukraine as sustainably as possible. We hope to be part of that solution." **DJR**

The Good Plastic Company converts postconsumer plastic into surfaces that are often used in interiors, like for Nike stores, as seen in a West London location.



Eavesdrop

Milano da Bere

On the ground (and in the soup) at the 62nd annual Salone del Mobile.

One day, someone—not me—will have to write the definitive historico-critical account of Milan's Salone del Mobile. It would tell of a furniture fair that began, in 1961, as a booster shot for Italy's manufacturing sector and then grew into a staple of the global culture circuit: the Coachella of chairs. This is not that story, but rather a view from the ground of last week's goings on about Milan.

Was There New Stuff?

Yes, and occasionally it was even good. Near Porta Venezia, designer **Grace Prince** was back with another pop-up show of her haunting, delicate, and conceptually daring pieces, all work recently conceived during a fellowship in Florence. "It was a great time to reflect and try something new," said Prince, adding that she's already considering a show for next year. Another returnee, Capsule, put on a pair of shows in town; at one, **Hydro's** recycled-aluminum pieces, by **Philippe Malouin** and others, were a particular highlight. And way out in the northern suburbs, perennial favorite Alcovà was back with a new installment of its contemporary-furniture-in-an-offbeat-location series: When people entered the smaller of two historic villas, they saw co-curator **Joseph Grima** seated in the living room, seemingly welcoming the arriving hordes. "Actually, I'm resting," he confessed. Though the setting was more conventional than last year's, the selection of work from young and emerging designers—among them a marvelous basement maze from room-partition experts **Dooor** and a charming (and playable!) ceramic mini golf course from a collective including **Diego Faivre** and **Pierre Castignola**—was consistently strong.

Was There Weird Stuff?

Golly, was there. Street-art spectacularist **JR** created a billboard installation in front of Stazione Centrale that made it appear—rather convincingly, from a distance—as though an Alpine mountain range had sprung up in front of the Beaux Arts facade. A good deal more subtle, but no less offbeat, was **Draga & Aurel's** show at **Spazio Rossana Orlandi**, a delightfully wacky wonderland of a domestic interior suggesting a mashup of art deco, PoMo, and Disneyland's Magic Mountain ride. And then there was the epicenter of all weirdness, from the master of weird himself: **David Lynch**, who came to the fair in the form of a bizarre "Thinking Room" comprising a large chair, some drawing utensils beside it, and photos on the wall of a butchered carcass and an old steel mill. What was it all about? Sadly, the director was not on hand to explain, though via video screen, Lynch did proffer a number of gnostic pronouncements: "Humans are always involved with Being," he said. "That's why they're called *human beings*."

Were There Famous People?

Depends on one's definition, but yes, several. The usual complement of product-making marquee names were on the scene: **Philippe Starck** showed off his recycled coffee-cup chairs for **Kartell**; **Marcel Wanders** was at the launch for his **MOOOI** brand—wearing a baggy suit no less, as sure a sign as any that the tide has turned in international menswear. **Lord Norman Foster**, still in full Blofeld regalia, was spotted chatting with Salone president **Maria Porro** in the VIP lounge, but other than that, architects of almost any stature were notably absent, as the once-prevalent trend of co-branded product launches continues to dwindle (in tandem, one senses, with the starchitect phenomenon), leaving only **Snøhetta's** new pendants for **Lodes** to hold the fort. Just the same, two nonsectarian big shots were in attendance, as well as one honest-to-goodness celebrity. At a reading hosted by fashion brand **Miu Miu**, novelists **Jhumpa Lahiri** and **Sheila Heti** showed up for a panel conversation, likely innocent of the knowledge that a gigantic design fair happened to be going on nearby. And at a cocktail for ubiquitous American studio **Rockwell Group**, actress **Jane Krakowski** appeared on the arm of the eponymous host, her companion **David Rockwell**. Reached for comment as she was attempting to procure a glass of prosecco, the Emmy-winning star of NBC's *30 Rock* responded, "Excuse me."

Was There Political Stuff?

Not such as one might notice. Among the featured designers at Alcovà, Ukraine's **Viktoria Yakusha** brought a pointed meditation on her country's loss of cultural patrimony since the onset of war through a set of vases and furniture based on artifacts looted by Russian troops. "The only thing that I can do as a designer is to tell stories," she said. But most of the fare around town was unlikely to cause anyone any real offense. In a notable coda, the Venice Art Biennale—occurring almost simultaneously with Salone for perhaps the first time ever—was also reported to be almost entirely protest-free this year, save for a brief pro-Palestinian demonstration in the Giardini and a statement from the artist representing Israel that she would not open her show until a ceasefire had been reached (a position somewhat undermined when she subsequently led select private tours of her installation). Evidently, the heated discourse stateside is not causing Italian temperatures to rise. Yet.

Were There Parties?

Is the Pope Argentinian? **The Eames Institute** hosted a dinner at hot-to-trotter Milanese restaurant Trippa, which lived up to the name but provided vegan options for the faint of (gulp) heart. At the historic Villa Necchi, **T Magazine** welcomed the good and great, and then purportedly turned away a number of its own advertisers when the quarters got too close for elbow-rubbing. Most importantly, a disreputable scandal sheet known as **Dezeen**—in conjunction with another, equally scurrilous organ with the effrontery to call itself **The Architect's Newspaper**—sponsored, along with **Novità**, an "America Night" party at Super Club in the basement of the Superstudio design complex in the Zona Tortona, the first time anything interesting has happened in the once-happening neighborhood since Daniel Arsham was just a sweet kid with a plaster fetish. Historians, take note: It could be the start of a comeback.

Ian Volner is a Bronx-based writer covering architecture, design, and urbanism.

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Down in the Valley

PATTERNS's medical campus in the San Fernando Valley disrupts the strip mall typology.

continued from cover suggests ways in which outmoded vernacular might be adapted for 20th-century realities.

"In terms of climate and sustainability, the best thing you can do with a building is keep it," Spina explained. Indeed, the retrofit is strategic in its moves and use of resources. The architects did little more than freshen up the existing office building with a new paint job in shades of gray, focusing their attention instead on adaptive reuse of the older building and a new 10,000-square-foot courtyard. That green space is a kind of front door for the campus. Populated with trees, planters, and places to sit, it not only connects the two structures but also visually links Victory Boulevard to the parking lot behind, where most visitors arrive.

The existing 17,000-square-foot building had a dramatic bowstring truss, brick perimeter walls, and a tall sign tower that once announced "Valley Food Market" to the boulevard. "We wanted to keep the original sign, which is kind of like a minaret, to keep the feel of the neighborhood," said Spina. "In my mind, this gives a civic meaning to something that was obviously not a civic building."

PATTERNS retained these elements that give the design an authentic character; however, it manipulated them to conform to its own visual vocabulary and increased the square footage to 42,000. In doing so, the architecture subtly shifts from decorated shed to duck—an uncanny object.

Huljich and Spina pulled back the roof line like a doctor opening a rib cage to reach vital organs, exposing a tessellated series of medical offices (designed for more wellness tenants, like therapists or yoga studios), each topped with a standing seam metal roof and skylight. At ground level they surgically inserted a glass storefront, which angles away from the courtyard to guide visitors into the lobby. The architects were responsible for only the core and shell and not the tenant interiors, yet suites for elder care, physical therapy, or imaging feel generous and light filled, even in the newly excavated basement. Huljich and Spina carved away the ground plane initially to

gain more usable area and to structurally shore up the original masonry with some serious trusses and retaining walls, yet the resulting below-grade courtyards don't feel like dank afterthoughts.

Along the eastern facade, a concrete stair leads to a lower-level lobby, cutting a triangular whorl out of the ground-level plaza. Terraced and lushly planted with ferns and succulents, it suggests a mini canyon or grotto. To the north, another courtyard is a long rectangle, enclosed on one side by the existing brick facade dripping in hanging vines so that patients might look out at the greenery.

In addition to their own practice, Huljich and Spina are both academics (UCLA and SCI-Arc, respectively), and their architecture is often associated with the discipline's more formal discourses, so it's refreshing to see in their built work spaces that can be read as user-centered and atmospheric. These outdoor rooms seem an obvious place where doctors and technicians might sit together for lunch or an informal meeting. They are shady, temperate refuges in the blazing hot San Fernando Valley. "In the courtyard, it's quite cool and welcoming," said Spina.

Additionally, if the pandemic offers any architectural lessons, it's that patios, courtyards, and parking lots are also treatment areas and buffer zones ready to be brought into service—as much a part of medical experience as the exam room. And since we live in a time where crises are multiple and overlapping, PATTERNS's architecture is a surprising proposition for how to build in an increasingly warming climate. Imagine a Victory Boulevard where the lowrise condition remains more or less the same (a counter position to the tendency to densify upward) and an urban subterranea emerges. In this scenario, adaptive reuse, carving out, and digging down are not simply the makings of a renewed medical campus but also the possible beginning of a new Valley vernacular.

Mimi Zeiger is a Los Angeles-based critic and curator.



HERE AND NOW AGENCY



HERE AND NOW AGENCY



HERE AND NOW AGENCY



HERE AND NOW AGENCY

Clockwise from top: The new building blends in with its surrounding context, but with an updated, contemporary sensibility; from the ground, individual offices are delineated by syncopated rooflines; interiors look onto an inner courtyard offering greenery and sunlight.

Raw Earth Revolution

Why a sustainable material changing the game in Europe hasn't landed in the U.S. market.

Wood has long been the material of choice for residential construction in the U.S., but there's an emergent, and equally ancient, material resurfacing in European architecture: raw earth. "Raw earth" is a catchall term for building materials that primarily consist of earth that isn't baked into a hardened state (unlike bricks, which are also made of earth, but hardened in a kiln). Raw earth materials you may know include adobe, rammed earth, compressed-earth blocks, and clay plaster. These can serve a crucial role as the country faces a trifold challenge of more intense climate shocks, a mounting housing shortage, and an emission-intensive residential construction industry—new-home construction in the U.S. creates more than 50 million tons of embodied carbon annually.

"I don't have any expectations that we will be building skyscrapers with earth blocks, but it makes sense as a low-cost, ecofriendly housing solution," said Ryan Runge, whose company, Advanced Earthen Construction Technologies, makes compressed-earth blocks as well as the machines used to produce them.

Kaminsky Arkitektur, a Gothenburg, Sweden-based firm, is currently designing an apartment building where the interior walls will be made of unfired clay, a first for the country.

"The whole idea is to avoid steel, plaster, and concrete and instead work with wood, clay, and straw," said founder Joakim Kaminsky.

Wood will make up the frame of the building, and straw will serve as insulation. Instead of plasterboards, the interior walls will then be made of clay boards covered in clay plaster, which carries less than 50 percent of the embodied carbon of gypsum plaster. This substitution, coupled with the use of other natural materials, will significantly lower the building's carbon footprint.

Raw earth has housed humans for millennia, and between 650 and 700 million people currently live in earthen dwellings. So, the European resurgence of raw earth materials is better defined as re-innovation, according to Johan Jönsson, chairperson of the technical committee for masonry and mortar at the Swedish Institute for Standards, which is currently developing national standards for using raw earth in construction. "Just because the material is ancient doesn't mean the design has to be," he noted.

Despite raw earth's growing popularity in Europe and the benefits it offers, it remains a niche construction spec in the U.S.

"Our sense is that very little of it is happening in the United States," said Carrie Bobo, professor of practice at the New Jersey Institute of Technology (NJIT). "There's been a big push and focus on building performance, but we also need to be thinking about the actual materials and the carbon cost of those materials." Later this spring, Bobo and her colleague Charlie Firestone, also a professor of practice at NJIT, are hosting a symposium on vernacular construction materials, like raw earth.

"The piece that we have some agency over is that we know how to talk to other designers. The more we understand how these technologies can be implemented, the more we can incorporate them into our designs," Firestone said.

Lola Ben-Alon, assistant professor at Columbia University and director of the university's Natural Materials Lab, has studied earthen building materials and their integration into the mainstream construction industry. She has found that many stakeholders have negative perceptions about building with earth. "It ties into how we perceive natural materials as low-tech and dirty," Ben-Alon said. Additionally, there is a persistent myth that they are not as durable as, say, concrete. "That's of course not true. It really is the way you build with these materials that dictates durability and performance." Bridging the perception gap is key to solving issues like the difficulty of developing a supply chain—no "raw earth" industry to speak of exists—and a lack of national policy. Regulations for building with earthen materials are only present in a few building codes on state and local levels.

But across the country, researchers, architects, and entrepreneurs are leading this culture shift. And signs point to progress. "There has to be a policy shift, but that comes only after a culture shift," said Michele Barbato, professor of structural engineering and structural mechanics at UC Davis. "There has to be education, and right now, earthen construction is fundamentally not known."

Critics have raised the question of scalability. However, as calls for a more circular economy increase, another global industry may not be desirable. "There are so many building products developed that were not here ten years ago," Ben-Alon said, but "there is a sweet range between doing it yourself at home and creating a massive industry that is far from being local, where materials are produced elsewhere, shipped overseas, and placed in your building. There is something in between we need to achieve."

Oscar Fock is a Swedish freelance journalist based in New York City, where he reports on climate change, its effects on humans, and how we are responding.

Left: Detail of GSAPP's *Farm-to-Building* installation.

Above: Lola Ben-Alon experiments with digital earth-fiber basket weaving at GSAPP.

Right: It's possible to construct sustainable multifamily housing with raw earth technology.



COURTESY GSAPP NATURAL MATERIALS LAB/LOLA BEN-ALON



COURTESY KAMINSKY ARKITEKTUR



COURTESY GSAPP NATURAL MATERIALS LAB/LOLA BEN-ALON

The Silicosis Crisis

Once considered a safe material, engineered stone is the subject of new regulations and changing sentiments about its effects on our health.

continued from cover workplace safety rules continues. It's looking grim: Since those rules went into effect in December, CalOSHA has inspected 29 shops and issued 13 stop-work orders because of "imminent" silica-related hazards.

Now, architects and designers across the U.S. are examining their relationship to the material as the risks surrounding it become better known. The conversation about silicosis and engineered stone intersects with several critical issues: the safety of building products, workplace safety, and the ethical responsibility of architects to confront the impacts of what they create. "Designers and developers have an important role to play in thinking about this issue and the implication for workers who are involved in producing those materials," Dr. Amy Heinzerling, a medical officer with the California Department of Public Health, told *AN*.

Just as the science around silicosis is evolving, the understanding of how building materials affect human health is becoming more sophisticated. (Ironically, silicosis's rise overlaps with a growing interest in designing for wellness.) So much work over the past decade has focused on simply disclosing what's in building materials. "We couldn't start talking about optimization until the industry became more transparent," Greg Mella, the director of sustainability at SmithGroup, told *AN*. There are now more tools than ever designed specifically to examine the risks associated with materials. One of them is the AIA Materials Pledge, which helps architects select materials that promote circularity, human health, climate health, ecosystem health, and equity. The problem is, no single material meets all five criteria, said Lona Rerick, an architect at ZGF and one of the sustainable materials experts who developed the pledge. "We're always looking at as much information on a material as we can get, and with silicosis and social justice issues, it gets complicated fast." (The AIA did not return requests for comment.)

Optimization has become a dilemma because there's no such thing as a harmless material. "I would be remiss if I didn't say that it's great we're focusing on silicosis, but the broader impacts of petrochemicals are far more substantial," Mella said. "Vinyl to me seems like the real evil, but regardless of what's more important is that they are all important."

To Ban or Not to Ban

In Australia, the debate has coalesced against engineered stone. The country's industrial relations minister, Iganzia Graziella "Grace" Grace described engineered stone as a "dangerous product that has no place in our workplaces." Dr. Rebecca McLaughlan, an architect and lecturer on professional practice and architectural design at the University of Sydney, shares the perspective. "What's the risk-to-benefit proposition in this scenario? A kitchen benchtop for a person's health. It doesn't remotely stack up." Claire McCaughan, director of the Sydney firm Custom Mad, supports the ban, though it won't affect her practice much. She's only specified engineered stone once in the past ten years, since her clients prefer natural finishes like stone and hardwood. Lately, she has been incorporating stainless-steel countertops into her projects because the material is durable and recyclable.

Sentiments are mixed in the United States.

Some architects see it potentially becoming another asbestos—something cheap, but deadly, so it's eventually regulated away. But mostly, there's a sense of caution surrounding the material and a hope that lower rungs on the hierarchy of controls, like substitution and stricter engineering and PPE, will make an impact.

Absent a ban, some architects are also hoping for other creative solutions. Margaret Montgomery, a principal at NBBJ, thinks that something like FSC certification, which tracks the entire chain of custody of woods to ensure that they are responsibly sourced, could be applied to engineered stone. "I don't think we have a great mechanism yet, and it's ripe for activism and change," she said.

Responsible Specs

Perkins&Will steers clients away from engineered stone whenever possible because it can contain BPA and PFAS—toxic substances that are on its Precautionary List, a database of chemicals in building materials that the firm began developing over 15 years ago. But since the silicosis spike, the firm's calculus is changing. "We are now considering removing engineered stone altogether from our specifications, and we may do so in the near future," Jason F. McLennan, chief sustainability officer at the firm, told *AN*.

Architecture Research Office (ARO) decided to forgo engineered stone in an adaptive reuse project it's designing for St. Ann's School in Brooklyn, since its client's main project goal is healthy materials. "This issue shouldn't be easier to talk about when kids are using a building, but it is," principal Stephen Cassel told *AN*. The firm recently decided to stop specifying engineered stone in all future projects. And just in the past few weeks, Jack Dinning, a materials specialist at the green building consultancy Brightworks Sustainability, has noticed more media coverage of silicosis and as a result, more questions from clients about what to do about it, especially after Building Green recommended avoiding engineered stone whenever possible. He shares that position. "The idea of an outright ban on anything without assessing alternatives feels reactive," he told *AN*. "If we're taking a precautionary approach but then instead use products that are laden with formaldehyde, that's not ideal either." He's looking into alternatives like sintered stone, which he chose for a kitchen renovation he's working on for his mother. But Dinning points out that this substitute is much more expensive. "If you're saying we're going to make housing even less affordable to certain markets, that's also not a positive societal effect."

Affordability also worries Anand Sheth, an architect based in San Francisco. Around 80 percent of his projects use engineered stone. "Until the price of engineered stone goes up, we are unlikely to see much of a change in client preference," he said. Sheth is concerned about California prematurely banning the material before substitutes are available and thinks it might be a repeat of growing pains after incandescent bulbs were phased out. "We had to deal with pricey LED options with poor outputs," he said.

However, some architects are finding creative ways to think about alternatives. Lindsey Wikstrom—founding principal of Mattaforma and contributor to nonprofit Who Builds Your Architecture?, which researches the intersection of labor and the built environment—recently designed

a reclaimed-wood countertop for a client initially interested in quartz. Wikstrom also prefers natural stone: For clients concerned about maintenance, she compares keeping natural stone clean to "a simple form of care similar to washing your hands or trimming your nails, rather than an inconvenience."

Beyond Kitchen Counters

Not all environments are as flexible as a residential kitchen. And this is where the silicosis conversation becomes murkier. Rerick cited a lack of viable alternatives for health care projects, which comprise a large portion of ZGF's portfolio. She's looking for options that have less silica in them, but hasn't found a true replacement. "I wish it was simple and we could say that we're never using engineered stone again," she said.

For manufacturers and brands, alternatives are coming—although slowly. Even engineered stone brands that maintain that their products are safe are responding to the changing landscape with low- and no-silica products. "Quartz is losing presence day by day in the marketplace," Daniel Sánchez, a chief executive at the surfaces brand Neolith, told *AN*. "The world has changed." In January, his company launched its first zero-silica products in Australia, and it will start selling them in North America in June. Cosentino, the Spanish engineered stone manufacturer, which was recently locked in a 15-year legal dispute over silicosis, introduced its Hybriq line of surfaces in 2020, which has 10 to 40 percent silica, and all of its new products for this year have silica concentrations below 10 percent.

Centering Labor

Architecture's growing labor movement may also affect how the industry addresses silicosis. Legally, architects have no responsibility over the means and methods of construction, but it's a much different time now than when

Zaha Hadid said, "I have nothing to do with the workers" when pressed about deaths at the al-Wakrah Stadium construction site. "Taking into account the health and safety of people who construct our buildings is a new priority for a lot of architects now, especially younger ones," said Liz, a Los Angeles-based architect and worker organizer with Architecture Workers United (AWU) who wishes to remain anonymous. "There are probably hundreds if not thousands of instances where I've specified engineered stone in a place where it needed to be cut to fit. I think that I have certainly had a hand in the illness and of workers through this."

While the Architecture Lobby doesn't have an official position about the use of engineered stone, the group said that it "encourages all architectural workers to identify opportunities for activism in even the most mundane tasks, such as countertop specification." Marcos Santa Ana, a general contractor and founder of design-build firm Alloi, believes that lawmakers should set rules on what an acceptable level of silica in building products is. "While installed engineered stone does not pose a risk to homeowners, strict adherence to safety protocols by all stakeholders is essential, given the potential for lapses in compliance."

Liz and AWU support a boycott of the material, but beyond that the group understands the need to distribute educational materials about silicosis and what architects can do about it. "We don't have to wait for a government ban to specify other materials," Liz said. "Would I give up my life right now so that an office project that I've worked on could have a slightly cheaper countertop? Absolutely not. Why am I asking anyone else to do the same?"

Diana Budds is a New York-based journalist who covers design and the built environment.



COURTESY NEOLITH

Safdie in Singapore

A conversation with the architect on sustainable standards for cities.

The first time Israeli Canadian American architect Moshe Safdie went to Singapore, he was invited by a shipbuilder. It was the late 1970s, and the industry was down. Singaporean businessman Robin Loh wanted to try his hand at developing pre-fabricated housing with the young mind who had designed Habitat 67, a prototype for factory-built housing in Montreal. The meeting was successful, and in 1985, Safdie Architects' Ardmore Habitat condominium building was constructed just off Singapore's prestigious Orchard Road, featuring two 17-story towers of modular units stacked around a central atrium that opened to a bilevel shared garden. The concept created a sort of vertical version of Habitat. Unfortunately, the site was rezoned, the building demolished, and a larger, cheaper-looking replacement rose in 2010, almost cruelly named Ardmore II.

This sort of erasure is common in Singapore, a young country just beginning to embrace preservation of its modern and post-modernist architectural heritage while facing competing interests: government goals for nationwide net-zero emissions by 2050 that could be more easily achieved with new construction, and ambitions to become a "global player," which requires an iconic contemporary skyline. Interestingly, Singapore is pursuing both aims with Safdie's help.

I experienced the architect's contributions to the nation's urban fabric as soon as I stepped off a plane there in March and

into the 1,460,663-square-foot Jewel entertainment and shopping complex. The complex is part of his design of Changi Airport, completed in 2019 with partner Jaron Lubin. Centered around the world's tallest indoor waterfall and surrounded by gardens and 5 stories of boutiques, eateries, play areas, and more, the asymmetrical torus-shaped building has become a must-visit attraction. But the public project's concept was surprisingly born out of a cultural tradition: Singaporean schoolchildren who did not have air-conditioning at home would escape the heat by doing homework at the chilled airport. Jewel uses an energy-efficient displacement ventilation system, so even though most households have AC units today, locals still prefer to gather in the public realm.

Located near the equator, Singapore has a tropical climate. Humid and hot most months, it's brutal to endure the midday sun for longer than the walk to lunch at an open-air hawker market. But that jaunt you do take will most likely be a biophilic one: The entire city-state is lush and manicured, even in its most urban areas. It makes the warmest days and the milder nights, when Singaporeans congregate in public spaces outside, a little more pleasant. It also informs every project built there, from public housing to icons like Safdie's Marina Bay Sands.

"The whole idea of a green city was [former prime minister] Lee Kuan Yew's pet project," Safdie told *AN*, referring to



COURTESY SAFDIE ARCHITECTS



COURTESY SAFDIE ARCHITECTS

the authoritarian environmental vision of Singapore as a Garden City, which Yew kicked off in 1970 with a policy to plant 55,000 new trees. "There is a certain kind of national pride around it that's fascinating," he continued after we toured Safdie's newest project in Singapore, the Surbana Jurong campus in a suburban business district. This massive 742,000-square-foot building, designed with partners Charu Kokate, David Brooks, and Jeffrey Huggins, employs both passive and active sustainability features, including a self-shading prefabricated design, rainwater and solar energy harvesting, and an under-floor air distribution system to achieve the country's first-ever Green Mark Platinum Super Low Energy status. What neighbors will notice most is the 43,500-square-foot, entirely public, 24-hour ground floor—a 665-foot-long pedestrian thoroughfare planted with a full-size indoor garden. Extensive bike lanes and walking paths will soon surround it, too.

As we traversed the city together, making stops at his recent work—Marina Bay Sands; the SJ campus; the Singapore Edition hotel, where I spent four nights in this hybrid of Ian Schrager sleek and Safdie sustainability; and adjacent Boulevard 88 luxury residences with a smaller-scale MBS infinity pool—clients and designers alike were excited to meet the architect. On a quick jaunt to the Urban Redevelopment Authority, Singapore's planning office, I watched a planning minister introduce him to Mok Wei Wei, one of the country's most important local architects. (All significant architectural designs in Singapore are first reviewed by a group of local peers, so Wei Wei may have been a jury member for Safdie's current project, a Marina Bay Sands expansion including a fourth tower, arena, and additional casino floors.)

From his earliest works, there seems to

have been a synergy between Safdie and Singapore. At the least, he has found a willing sustainability partner in the Garden City. It feels like "for everyone a garden," his design philosophy, which originated with Habitat 67, is possible there. What's needed now is a trickle-down effect to the government-sponsored Housing & Development Board estates.

But he's also helped give the city-state what it has long desired: visibility. The original brief for Marina Bay Sands called for "a cultural building, which in itself will become an icon for the identity of Singapore," Safdie revealed to me. "When they said, 'We want something that will be as famous as Sydney Opera House,' I said, 'They're dreaming,'" he continued. "I think it is, at this point, probably as famous as Sydney Opera House, maybe more."

During our last dinner together, at the Italian restaurant on the Marina Bay Sands rooftop, I asked Safdie if he feels that Singapore's long history with foreign architects has made its planning department more open to his work. Before he agreed, Safdie, now 85, credited a few who paved the way: Paul Rudolph, John Portman, Kenzo Tange, and I. M. Pei. None, however, made the city a destination through their architecture quite like Safdie.

Elizabeth Fazzare is a New York-based editor and journalist who covers architecture, design, culture, and travel.

Above: A rendering of Safdie's new Singapore project, the Orchard Boulevard residence.

Left: One of Safdie's first Singapore projects, the Ardmore Habitat Condominiums, was completed in 1985 and modeled after Habitat '67 in Montreal.

Remembering Terry Boling

After Boling's death in January, two friends reflect on his impact on his students and the wider architecture community.

Terry Boling saw life the way he taught and practiced architecture: as never being truly finished. But that openness to ideas, opportunities, and connections was never an excuse for ambiguity. On the contrary, Terry was exacting and unequivocally committed to beauty, a conviction that endures as we look back on his remarkable life and work.

Though we are writing this together, we each knew Terry in different ways but share a deep respect and admiration for his distinct approach as a teacher and as a practicing architect. As a professor of practice at the University of Cincinnati School of Architecture and Interior Design, his studios produced the extraordinary work born out of a deeply personal process that asked students to begin solely with materials so they would engage the physical world and a complex array of issues that extend well beyond architecture.

His insistence on beginning with the act of making—even over the act of drawing—distinguished Terry as a teacher. The work his Comprehensive Studios generated is now legendary. Eschewing both an overtly technical approach at one extreme and an excessively formal one at another, his studios focused intensely on a representative bay with layer after layer of texture and expression that *became* performative. There is a selflessness in this kind of teaching, one that privileges deep learning and engagement. He favored the thick, slow, and implicit over the thin, fast, and explicit.



COURTESY TERRY BOLING ARCHITECT

It seems ironic to say that Terry didn't care about the building as a whole (nobody cared more!), but it was an act of tough love, knowing that the investment would ultimately pay off in the lives of buildings and the lives of his students. What he may not have known was how it would affect us: how it would enrich our lives, improve our teaching, and make our own buildings better. What we share now is the realization

that however great our respect was for Terry as a professional and a colleague, we had an even greater appreciation for him as a person. He possessed a rare combination of talent, humility, and generosity. He had such clear and positive values that it was impossible not to be affected by him and to be impacted in a positive way. We share a knowing laugh now, realizing that if only Terry had been more arrogant and self-promoting then more people would know about him, but of course, that wasn't him.

Despite winning some of the most prestigious academic design competitions while simultaneously directing a burgeoning and acclaimed practice, Terry stayed humble and deeply rooted in Cincinnati. Loyal to his family and his place, he didn't simply aspire to work all over (even though he could have), choosing instead to focus his gaze inward, building a distinct body of work that is equally recognized for its experimentality and virtuosity. It isn't a stretch to see the origins of Terry's work in Alvar Aalto's Experimental House, Gustav Klimt's *Kiss*, or any number of iconic masterpieces born out of a patient search for truth.

Working far from the centers of fashion, Terry nevertheless built a practice, built a reputation, and built buildings—no mean feat in middle America. His work is incredibly unique in that region and remains inspiring to us both and so many others. We were always excited to see what he was working

on and how. Though he rarely had a decent budget, he always managed to bring out the best, even when using recycled or what others might consider low-grade materials. In every situation, he was relentlessly resourceful and innovative, wanting materials to live a long life and to see their unrecognized potential for beauty.

As the American poet William Carlos Williams wrote, "There are no ideas but in things." If you've ever wondered what exactly that means, we encourage you to find your way to Cincinnati and spend a few hours in one of Terry's buildings. Watch how the light drifts across a beautifully textured wall in a way you didn't expect, revealing the process of making and a material's intrinsic beauty. We wish we could suggest spending those hours with Terry, for we, like so many, wish for nothing more than a few more hours with him, warming ourselves in his generosity once more.

Marlon and Michael met through Terry and continue to share bourbon and stories in his honor.

Michael Zaretsky is an associate professor and head of architecture at the University of Oregon.

Marlon Blackwell is the founding partner of Marlon Blackwell Architects and the E. Fay Jones Distinguished Professor at the University of Arkansas.



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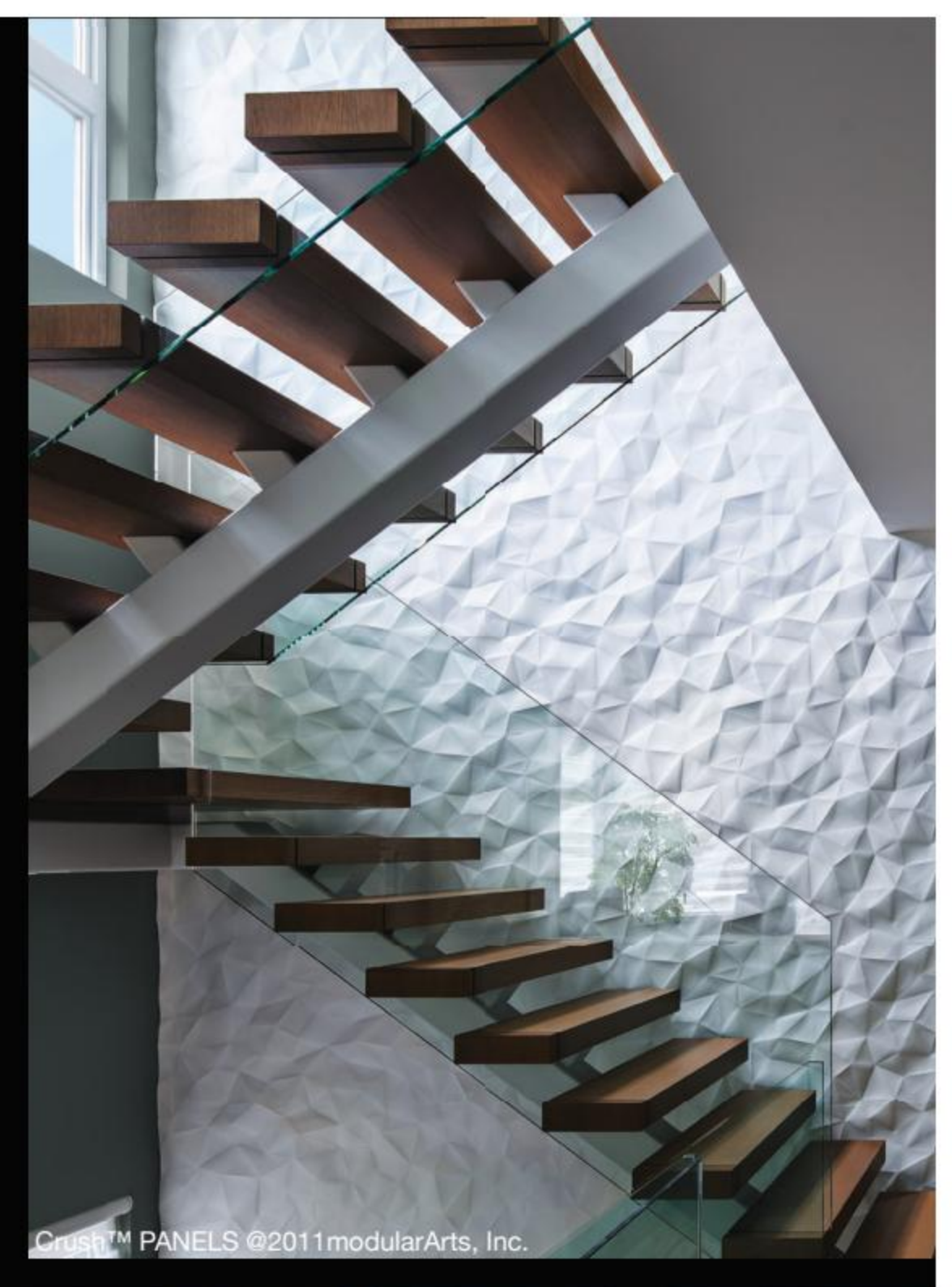
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14 In Construction

Going Gauche

In Paris, Studio Gang's new John W. Boyer Center for the University of Chicago nears the finish line.

Studio Gang is on track to complete the University of Chicago's John W. Boyer Center in Paris by October. The school's new international outpost sits in the 13th Arrondissement along the Avenue de France, a cavernous main artery whose mixed-use towers make it feel less like southwest Paris and more like New York's Hudson Yards.

This *ex novo* district, called Paris Rive Gauche, isn't Haussmann's conception of broad boulevards and a unified vocabulary.

It's also not the postwar economic dream of La Défense on axis to the city's historic core. It's something Paris hasn't seen yet: Platformed upon a massive train yard on a strict grid, the site offers firms like Studio Gang, Ateliers Jean Nouvel, and Dominique Perrault Architecture the chance to ignore Paris altogether.

The Boyer Center consists of 5 stories of cross-laminated timber and glulam columns, beams, and panels above a steel and concrete podium that encases a busy stop for the

suburban regional train line. Its program is not unusual—it combines both dedicated and flexible classrooms, lecture halls, informal meeting rooms, study spaces, and offices (not to mention a photo-friendly top level for public events, lectures, and champagne toasts). Its appearance is not conventional, either, compared with some of the wilder forms taking shape here, including Rudy Ricciotti's ribbonlike Émerod flats, Hamonic+Masson and Comte & Vollenweider's skewed Home,

and BP architectures' aluminum-paneled M9-C. What will make this project unique, however, is Studio Gang's effort to make a single urban building feel like a capacious campus on perhaps one of the narrowest sites in the entire Paris Rive Gauche scheme.

"Part of the idea was to re-create the elements you'd benefit from in a more horizontal, residential campus environment," said Rodia Valladares, the Boyer Center's design lead and a design principal at Studio Gang's Paris office. "That includes places for encounters and circulation and places of light and sightlines."

Over the next couple of months, the building's CLT panels will be clad with a composite stone, sourced 40 kilometers (about 25 miles) away from the same quarries as Haussmann's 19th-century buildings—a strategy, Valladares said, that also connects it to the university's stone buildings in Chicago 4,100 miles away. He calls it both a veil and a thin brise-soleil for a "campus" constructed within a single building.

Valladares recently took me through the unfinished building. As we dodged stacks of materials and half-poured floors, each new level on a gray day was brightly lit by generous windows that framed the broader story about the 13th Arrondissement's transformation beyond. We circumscribed the central atrium that connects this campus, named for the distinguished and longtime Chicago dean and historian John W. Boyer. It was funded by \$27 million in donations from UChicago alumni and parents, including \$10 million from the Shelby Cullom Davis Charitable Fund. At 25,460 square feet, it will reportedly be triple the size of the university's current Paris center, a few blocks away, which opened in 2003. In this way, UChicago was early to the game, whose rules were set by SEMAPA, the development corporation jointly administered by the French national railway (whose tracks it occupies) and the Paris city council.

Despite the additional square feet, it is indeed a tight site, measuring roughly 200 feet deep and 100 feet wide. The word "constraints" came up in our interview often, referring to the train station below, which had to support ongoing service throughout construction, the demanding acoustical requirements of an academic building, and the exigencies of urban campus security while fostering a sense of openness.

One thing that remarkably didn't come up in conversation related to constraints? Paris itself. Not in this part of town. "Everyone along this street is trying to deal with the city of Paris, but with a much different geometry—a freer geometry," said Valladares. "We thought about the 13th Arrondissement, and we thought about the city of Paris at large, but we began with the question of how we take this opportunity to create new ground, literally, that didn't exist before the train platform."



Left: A rendering showcases the wood-lined envelope of the new John W. Boyer Center.

Below: An in-construction look at the mass timber framing that supports the building, which rises from a concrete podium.



William Richards is a writer based in Washington, D.C., and Paris and the cofounder of Team Three, an editorial and creative consultancy.



MIKAEL OLSSON



MIKAEL OLSSON

A Wooden Orb

Elding Oscarson delivers an immersive auditorium in Stockholm.

A new museum addition in Sweden leverages the latest immersive visual technologies within a domed auditorium and event space. Known as Wisdom Stockholm, the project adds to the Tekniska Museet, Sweden's National Museum of Science and Technology.

Swedish architects Elding Oscarson enveloped the spherical auditorium within a gridshell roof structure constructed from a carbon-sequestering laminated veneer lumber (LVL). Each beam was formed from a composite of five LVL layers held together by timber dowels. Altogether, the roof structure consists of more than 10,000 individual components cut by a large CNC machine.

Seen from above, the building is roofed with heart pine shakes, adding vernacular character to Wisdom's bulbous exterior profile. Glazing beneath the eaves allows natural light into the event space.

"The dome is very tall, but we were required to have a low program around it. We wanted to have the dome as the centerpiece indoors, not sticking out of the building," said Jonas Elding, one of the firm's founding partners.

This leads to a dramatic confrontation on the interior. As you enter, the free-form roofline arcs upward to contain the imposing timber orb. **Trevor Schillaci**

16 Open House

PoMo Revival

Lucito channels Frank Furness—and his influence on Robert Venturi and Denise Scott Brown—for a funky home reno in Philadelphia.

Some of the fundamental concepts that came to define postmodernism can be traced back to the work of Frank Furness, a Victorian radical who designed dozens of Philadelphia buildings. Furness had an especially lasting influence on Robert Venturi, who grew up surrounded by his buildings. As a young man, Venturi became fascinated by Furness's strange shifts in scale, dissonant juxtapositions, and the “crazy way” he combined columns, brackets, quoins, and arches. The ghost of Furness was never far from the work he did with Denise Scott Brown.

Now Lucito, a Minneapolis-based design practice, has renovated a historic Furness house in Philadelphia by channeling the ghost of Venturi. The approach has allowed the firm to update the 1867 house without either slavishly replicating the past or obliterating it.

Like Venturi and Scott Brown, who always rejected the postmodernist label, Lucito's founders, Andrew Lucia and Iroha Ito, never thought of themselves as postmodernists. They also didn't know much about Furness. But after a chance encounter with the owners of the house, they agreed to help the couple modernize the historic home, known as the Joseph Bates House.

Lucia and Ito received the commission just days before the country went into lockdown in 2020, so the project ended up taking more than three years to complete. That long gestation gave them time to get to know Furness and research his work, including the Pennsylvania Academy of the Fine Arts, which is considered his masterpiece.

Furness designed the Bates house early in his career while working in partnership with John Fraser and George Hewitt. Although Bates is slotted among the numerous townhouses of the Rittenhouse Square neighborhood, it feels a bit like a villa because it is open on three sides and bordered by a small, charming garden. Both the brick exterior and Gilded Age interior have been meticulously maintained by a series of owners. After Eric and Lorraine Hirschberg acquired the house in 2010, they resolved to do the same.

But living in a rambling, 19th-century house proved more challenging than they anticipated. Over the last decade, they have made a series of surgical adjustments to improve the house's flow and make room for a modern kitchen and closets. Since they considered themselves temporary stewards who were “just passing through,” the Hirschbergs asked their architects to mask the changes by precisely replicating Furness's signature details.

The couple began to relax that deferential approach after meeting Lucia, who is currently a lecturer at the University of Pennsylvania's Weitzman School of Design. Lucia first struck up a conversation with Lorraine while she was planting bulbs in the front garden, and she invited him to tour the house. At the time, the Hirschbergs were trying to figure out how to combine an awkward group of small rooms into a master bedroom suite.

Lucia, who has strong interest in ornamentation, knew the project would require moving a structural wall. After learning more about Furness and the role he played in Venturi's architectural development, he suggested that the Hirschbergs try more of a “fusion” strategy.

The result feels both familiar and different. The first thing you notice when you enter the spacious master suite are the intense azure-blue walls, which are a near perfect match with the blue that Furness used at the Pennsylvania Academy. But in the Venturi manner, Lucia and Ito have exaggerated, flattened, and subtly modernized other Furnessian details. Their biggest move can be seen in the opening that separates the master bedroom from a new sitting room. The decorative brackets and rosettes have been arranged in what Venturi would label (approvingly) a “crazy way.”

Both Furness and Venturi liked to call attention to the loadbearing role that columns play in architecture. Lucia



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and Ito do something similar by balancing a gold-painted steel beam atop two tiny gold-painted balls. The irony, which the postmodernists would surely appreciate, is that the beam is merely decorative. It hides a piece of laminated veneer lumber (LVL) that does the actual work of holding up the wall.

Instead of merely mimicking the original design, the architects advance the story, treating the house's architecture as a living continuum. Like all good historic preservation, their design allows the building to evolve. It's part Furness, part Venturi, part Lucito. Their design finds inspiration in the ghosts of the architecture's past while allowing the building to evolve.

Inga Saffron is the architecture critic for *The Philadelphia Inquirer*.

Clockwise from top left: Original parquet floors ground the home's funky columns—a mix of filigree-detailed apertures and structural steel expression; a unifying teal-blue color creates a rich backdrop for the interiors; antique artifacts like marble fireplaces and light fixtures add a touch of nostalgia, but stay true to the home's roots.

17 Open House

Keeping Up with the Merzes

Starling Architecture thoughtfully reworks a historic Brooklyn brownstone while paying homage to its trailblazing original owners.

In 1963, husband-and-wife architects Joseph and Mary Merz bought four lots in New York's Brooklyn Heights for \$11,000. Those lots became three midcentury townhouses that helped shape the community as a historic district—much like the architects who built them. The Merzes also renovated the Alfred T. White Community Center, designed the nearby Adam Yauch Park, and helped stop Robert Moses's plan to extend the Brooklyn-Queens Expressway to the neighborhood.

Mr. and Mrs. Merz lived on a corner double lot: 48 Willow Place is a 5,200-square-foot cube of concrete punctured by stacked windows reminiscent of Louis Kahn's Esherick House. When it hit the market in 2020, a family in Costa Rica saw it over FaceTime. They enlisted the help of local Starling Architecture to evolve the home's language and history while adapting it to a contemporary lifestyle.

The entire gut renovation took about ten months. When the new homeowners purchased the property, the 4-story layout was divided into three apartments and an architecture studio. Luckily, the architects were able to reorganize the plan easily, as the Merzes, who often experimented with their home, designed it so that only the exterior walls and one fireplace wall in the living room were structural.

The architects opened the ground floor to accommodate an entry foyer, mudroom, powder room, breakfast nook, pantry, and an open-plan living room/kitchen. Still, the additions don't obscure the intent of the Merzes, whose influences—Alvar Aalto, Frank Lloyd Wright, and Walter Gropius—are still keenly felt in the preserved Ruabon Quarry tile floors, rotary-cut birch millwork (the geometric bookcase in the living room was original to the Merzes), and seamless integration of indoors and outdoors.

Symmetry runs throughout the original and new designs. If floor-to-ceiling millwork encases one end of the living room, millwork similarly encases the opposite end where the kitchen lies. The architects redid the cabinetry, added modern appliances, and a custom island that, as founder of the firm, Ian Starling, told *AN*, is "supposed to be more like a furniture piece and sit in the room, a counterpoint to the [dining] table," an original Merz piece.

Elsewhere, custom millwork continues the midcentury feel, from shelving in the offices to the primary bedroom's headboard: It slides out to divide the room and doubles as a vanity. Two smaller bedrooms are similarly divided by sliding wooden doors that can open up into a communal space. A wall uniting the two rooms is clad in more millwork, which frames the windows, sliding shutters, and the mirrored box surrounding the fenestration—a Merz design.

As the original architects were strategic with lighting, so too was Starling. Lightwells penetrate deeper parts of the home while maintaining privacy, including in the primary bathroom, where a skylight opens onto a tiled steam shower and built-in tub.

Almost all doors frame the Japanese-leaning garden in the back. Nishiel Patel Design Office, which handled the landscaping, opened up the garden to put it in conversation with the interior. "The garden is really a response to the house," said studio founder Nishiel Patel. "All of the Merz houses in this area are perfect cubes, but they're always breaking their own rules. So there's a lot of symmetry in this house that gets broken." Square pavers that branch off playfully and many microscopic levels in topography continue these idiosyncrasies.

"As an architect, it was very inspiring to work with this as a baseline project," said Starling. Placing themselves in conversation with not only the Merzes but architects they looked up to, Starling and Patel find a place for the midcentury in the twenty-first. **KP**



Clockwise from top left: The historic exterior remains largely intact, an enviable double corner lot; a new library continues the built-in design language of the original house; interiors play with pattern and texture; the garden design continues the idiosyncratic PoMo sensibility; bathrooms are filled with skylit natural light;

Across the Country

WRNS Studio makes space for both high-profile clients and sensitive civic work.

WRNS Studio, a 145-person office with locations in San Francisco, Honolulu, New York, and Seattle, is a thought leader when it comes to adaptive reuse and sustainability. The bicoastal firm was recently named in *Fast Company's* list of most innovative architecture offices, and in 2023, WRNS Studio received a Best of Practice Award from AN.

Microsoft, Google, Meta, Adobe, Amazon, Airbnb: These are just a few high-profile clients that have entrusted WRNS Studio to design new workspaces in recent years. Equally important to the office's portfolio is its work in the public sector, with major projects for the University of California, Trust for Public Land, and the Chinatown Community Development Corporation in San Francisco. The firm also supports philanthropic initiatives through the WRNS Studio Foundation, which launched in 2021, offering Black architecture students need-based scholarships and mentoring.

"In all our projects, public or private, we're deeply concerned with uncovering a unique narrative of each place," said Kyle Elliott, one of WRNS Studio's 11 principals. "Whether the project is for Trust for Public Land or a private corporation, we're always thinking about the potential for contributing to the public realm."

Whether WRNS Studio is tasked with renovating glamorous New York City office buildings or reimagining a brownfield site, the goal is to create a sense of place in milieus where it might not yet exist. As Brian Milman, another WRNS Studio principal, said, "We're always asking ourselves: How can we create a there there?"





1 Amazon Hank 2023

On Manhattan's Fifth Avenue, WRNS Studio successfully converted Lord & Taylor's 1914 flagship Italianate building into a multistory workspace for Amazon. As per tradition, the studio's design process started with a deep dive into the site's history. The designers studied how Lord & Taylor's architect, Starrett & van Vleck, erected an 11-story structure between 38th and 39th streets on Fifth

Avenue topped with a stunning rooftop terrace for department store employees to enjoy fresh air. WRNS Studio was brought on to convert the landmarked building into a light-filled workspace fit for 21st-century needs. "Our goal for the interior design was to always reveal a bit of the old building with the new," said Stephen Kelley, a firm leader in the New York office.



2 Intuit Bayshore Building 2023

Mountain View, California, is part of the Bay Area known as the "middle landscape." Much of the built environment was constructed to facilitate the flow of trucks, not people. WRNS Studio recently completed a two new buildings for Intuit in Mountain View, partially transforming a corporate office park from the 1980s into an attractive, modern workspace over two phases, with Clive

Wilkinson Architects collaborating on interior design. The first building was completed in 2016, and the second in 2023. The challenge was converting a landscape dominated by heavy industry into a people-focused environment. WRNS Studio's response is a walkable campus and a new model for development in Silicon Valley.



3 Elco Yards 2017–

Redwood City is a town of 80,000 people equally distanced between San Francisco and San Jose. There, WRNS Studio is designing Elco Yards, a mixed-use project that will provide space for life sciences companies and much-needed housing, all in one. As with its work in Honolulu, WRNS Studio was tasked with transforming a brownfield (in this case a former car dealership) into a healthy

community. Elco Yards boasts 501 residential units—27 percent of which are affordable. "We wanted to create a variety of building styles so as to make the complex appear as though it manifested gradually over time," Kelley said.



4 Ālia 2021–

In recent years, Honolulu's skyline has been transformed by new development. Meanwhile, amid disastrous wildfires, people across the state have faced debilitating water shortages. To set a new benchmark for sustainable development, WRNS Studio is designing Ālia, a 39-story, 1-million-square-foot mixed-use residential complex set for completion in 2026. According to Adam

Woltag, who leads WRNS Studio's Honolulu office, the "facade design increases shading by 20 percent for interior units while creating a dynamic, beautiful composition on the exterior." It also addresses Honolulu's water shortages: "Ālia's rainwater collection system will save roughly 9 million gallons of potable water each year," Woltag continued. **DJR**

Terrazo Collection

Chesapeake Collection

Granite Collection

AIA24 Exhibitor

AIA Conference on Architecture & Design
June 5-8, Washington, D.C.

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Lincoln Memorial
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CONSTRUCTION TIME AGAIN

The tether between architects and the task of making buildings is an elastic leash: At times, being an architect means being attuned to the real-life challenges of job sites, building delivery, gravity, and money. At other times, the task involves conceptual work that extends into the realm of “paper architecture.” The distance between these two concerns—the practical and the theoretical—forms a spectrum along which one’s work can be located. The location can vary from task to task, hour by hour, but the tension keeps things interesting. On the following spreads, behold three houses: Donaldson + Partners’s Hill House, a playful, concrete masterpiece; Cross Cabin, an impressive CLT residence clad in cork; and the craft-labor efforts of Assembly House 150.

THE HOUSE THAT LYNDA.COM BUILT

*In Santa Barbara,
Donaldson +
Partners delivers Hill
House, a complex
and curvy residence.*

In the 1990s, after working on special effects for films, Lynda Weinman taught digital media and motion graphics at Art Center College of Design in Pasadena, California, and wrote a book about designing for the World Wide Web. She founded Lynda.com in 1995 with her husband, Bruce Heavin, an illustrator and artist. Over time, the website became a popular place to learn digital skills through educational videos. The platform was acquired by LinkedIn in 2015, and that set the stage for the couple to embark on their next creative endeavor.

The architect Robin Donaldson first met Weinman and Heavin when his office, then ShubinDonaldson and now Donaldson + Partners, designed studios for Lynda.com more than a decade ago. He then worked with the couple on a renovation and the design of a home for another site before landing the commission in 2016 for this project, to be built on a hilltop site overlooking the Pacific Ocean. Most of Donaldson's prior work was "modern and boxy," Heavin said, which presented a challenge: "I didn't exactly want a box."

Donaldson had a good sense of what the residence needed programmatically, but the design process was remarkably open-ended. "I've worked with a lot of people in design and architecture, and many people have big egos;

they're not willing to work with you," Heavin offered. But when he would mention half-baked ideas to Donaldson, the response was, "Yeah, let's go." That willingness to try something new was refreshing. "I like artists who are curious and take chances to grow," he said.

Donaldson's early schemes explored how the home could be integrated into the site's landscape. At one point, a breakthrough emerged via one of Heavin's questions: What if the whole house *was* the hill? The question changed the course of the project and gave it its name. "I had been flirting with that idea but hadn't dared to show them," Donaldson remembered.

Heavin wanted to investigate emotional and irrational themes through light, volume, forms, and space. In response, Donaldson's team worked in Rhino and made

test prints of varying scales in powder. It produced PDFs of views that Heavin would sketch over, in addition to exploring detailed digital models via VR. A new design language emerged in which voided, circular forms intersected in intricate, rhythmic ways—part sand-dollar section, part Turrell skyspace. The form was "co-ideated," with Donaldson's team resolving and documenting the architecture.

Donaldson was prepared for this aesthetic growth. Independently and with his D+ Workshop, an experimental fabrication outfit, he was already exploring conics, rocks, and natural forms that arise through Boolean operations and erosion—and how to fabricate them using the latest contemporary technology. The home's design language of hollow, buried forms emerges from a lineage of Santa Barbara precedents that begins with the Mud House, a 1974



JOE FLETCHER

home by Roland Coate, Jr. in nearby Montecito, where the lawn was pulled over a set of cast-concrete pavilions. (It was owned for a time by the actor Steve Martin.) Thom Mayne worked for Coate and later was commissioned to design the Crawford Residence, also in Montecito, which was completed in 1990. While working at Morphosis, Donaldson was its project architect.

Both that project and the Hill House attack the primacy of the architectural object and toy in plan with a deconstructed circle, though with very different formal results. For Mayne, the impulse came from the Land Art movement, where artists were “buying tractors and completely inventing a new art form” that was based on subtraction instead of addition. Donaldson’s Hill House, through its oblong apertures, advances an expression of *landscape-ness* as a primary objective while simultaneously exposing its inner workings.

Hill House measures about 14,000 square feet in conditioned area and, according to Donaldson, was delivered at a typical price point for high-end homes, which can run into the thousands of dollars per square foot. One of the home’s biggest achievements is its concrete, a material Donaldson always imagined using for the residence due to its plasticity and resilience against wildfires and earthquakes. Donaldson said they used as much fly ash as possible in the concrete mix and took care to reduce the volume of concrete needed for its pours.

The formwork for the home was rationalized for construction by Gehry Technologies, and its pieces—about 3,000, nearly all of them unique—were built by CW Keller. Matt Construction, which typically builds large commercial

projects, served as the general contractor. (It recently completed Eric Owen Moss’s (W)rapper in Los Angeles.) Donaldson and Heavin separately described the joy of seeing the formwork installed, as it came together perfectly, only off by eighths of an inch here and there. “Once we had that concrete form in place, one of my biggest jobs was to let its beauty speak,” Donaldson said.

The home’s plaster shell domesticates its interior, as it delivers services, aids in sound absorption, and flows down into the center of the home. Its backing is exposed, which is where guests get to see behind the scenes: The Hill House exposes many of its internal workings, from metal framing to conduit to air-conditioning boots to motors for large operable doors by Schweiss. The front door, a parabola of framed glass set within a concrete tube, also became its own art project, with its hinged guts designed by Donaldson. The finished product strikes a balance between domestic comforts and raw, unapologetic technics. Heavin said, “We didn’t slap on any lipstick.”

True to this idea, the construction process also benefited from innovation. “Nobody had a tape measure onsite during construction,” Donaldson recalled. Instead, workers used total-station technology to accurately convert between built conditions and a shared BIM model. This was the first time Donaldson had seen these devices used for residential projects. Additionally, the structural engineer modeled the rebar via Tekla Structures, so there were no fabrication drawings, only the delivery of the 3D model. “Once the model is managed properly, you have to trust the model,” Donaldson said. The Hill House has proved transformational for Donaldson’s



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Facing page: Numerous courtyards are carved out of the house’s form. Anchors are embedded to allow the owners to install shades if desired.

Top and above: The entry sequence proceeds through a series of voids on metal grating to arrive at a custom-designed front door.

Left: The extensive planting, both on the accessible roof and across the site, was designed by Eric Nagelmann.

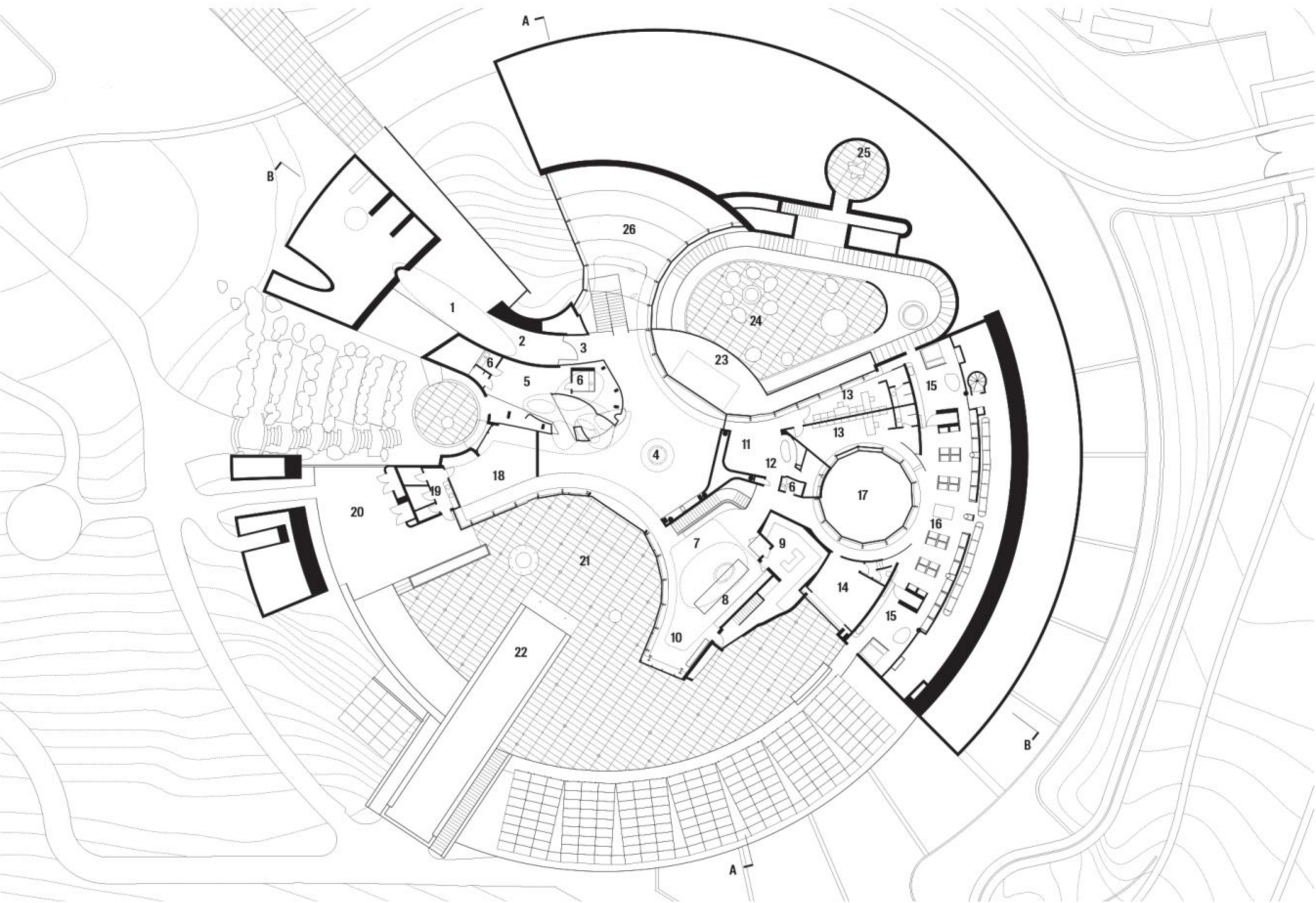


Top: The interior plaster shell conceals and delivers services while sculpturally flowing into the center of the interior, where it is crossed by a catwalk and evocatively illuminated.

Above: Hill House's interior design was also handled by Donaldson + Partners, who opted for a variety of metallic finishes paired with expressive light fixtures.

Right: The outdoor deck, lit by a embedded constellation of uplights, includes a pool that overlooks the Pacific Ocean.





MAIN FLOOR PLAN (ABOVE)

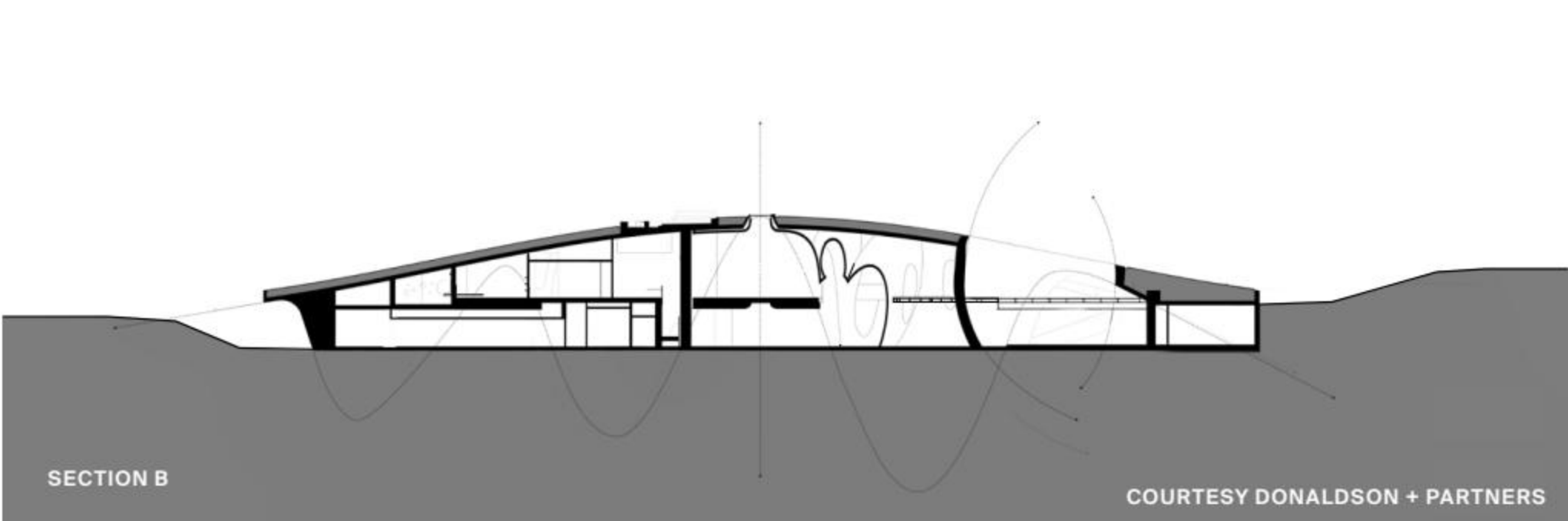
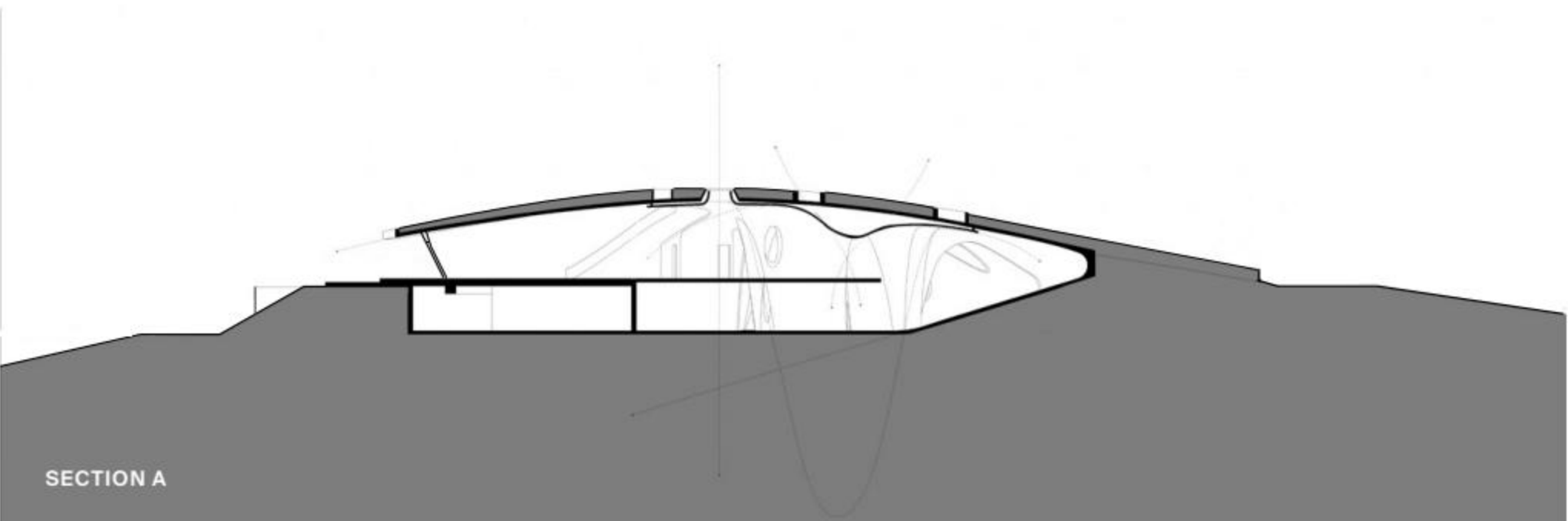
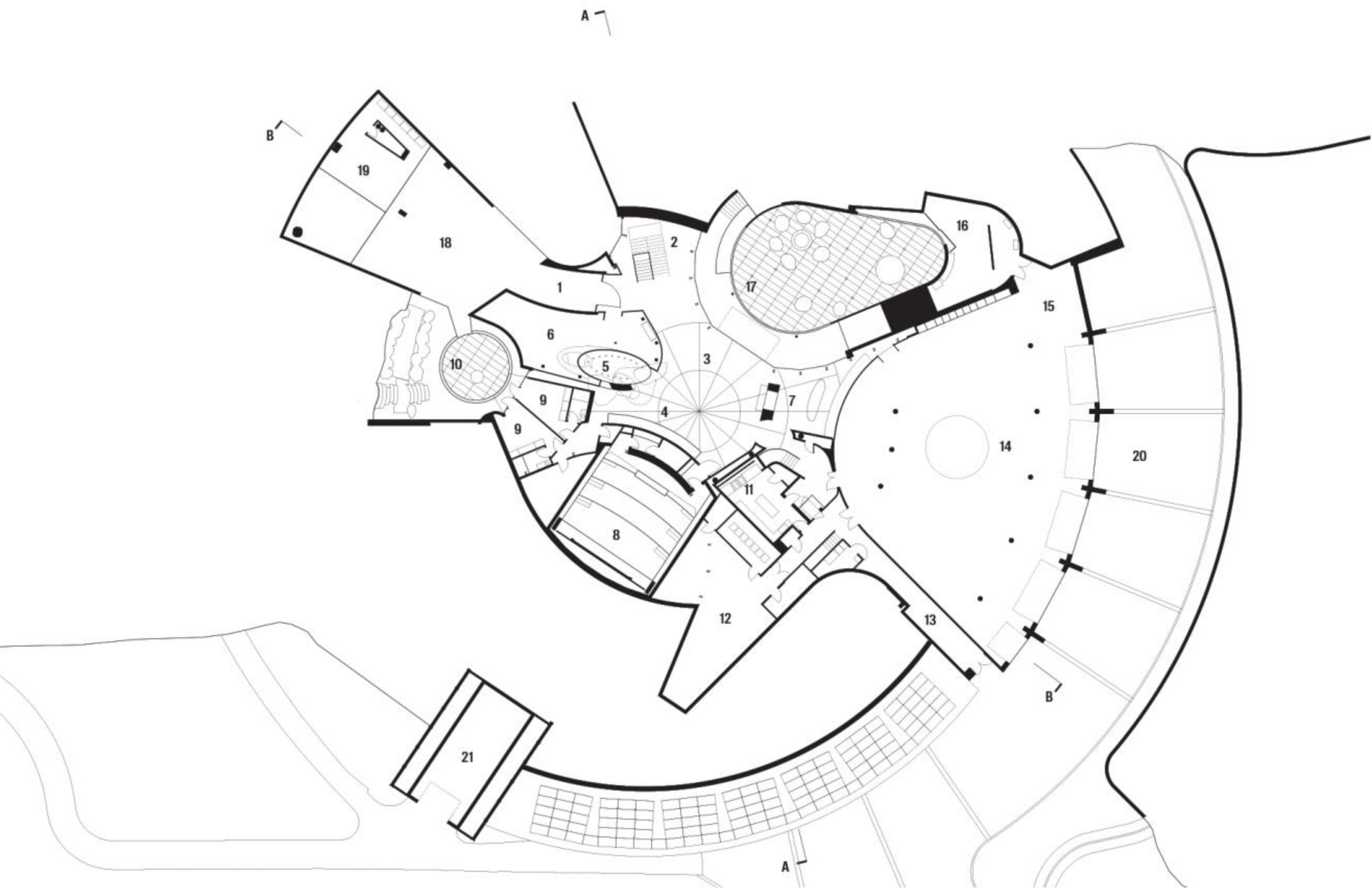
- 1 ENTRY BRIDGE
- 2 WORM HOLE
- 3 MAIN ENTRY
- 4 GREAT ROOM
- 5 CANYONLANDS
- 6 POWDER ROOM
- 7 DAILY LIVING
- 8 DAILY KITCHEN
- 9 PREP KITCHEN
- 10 DINING ROOM
- 11 FAMILY ROOM
- 12 UPSTAIRS BAR
- 13 OFFICE

- 14 PRIMARY BEDROOM
- 15 PRIMARY BATHROOM
- 16 PRIMARY CLOSET
- 17 PRIMARY COURTYARD
- 18 GYM
- 19 CHANGING ROOM
- 20 POOL CABANA
- 21 POOL DECK
- 22 POOL
- 23 AVOCADO BRIDGE
- 24 AVOCADO COURTYARD
- 25 SCULPTURE HOLE
- 26 GALLERY

LOWER FLOOR PLAN (BELOW)

- 1 ART ENTRY
- 2 GALLERY
- 3 GAME ROOM
- 4 LIBRARY
- 5 CANYONLANDS
- 6 BEHIND THE SCENES
- 7 DOWNSTAIRS BAR
- 8 MEDIA ROOM
- 9 GUEST ROOM
- 10 GUEST PATIO
- 11 LAUNDRY ROOM

- 12 MECHANICAL ROOM
- 13 SERVICE
- 14 GARAGE
- 15 GARAGE WORKSHOP
- 16 PAINTING STUDIO
- 17 AVOCADO COURTYARD
- 18 POTTERY COURTYARD
- 19 POTTERY SHOP
- 20 LOWER MOTORCOURT
- 21 POOL EQUIPMENT



COURTESY DONALDSON + PARTNERS

practice. His current projects, in different ways, respond to its lessons. “Once you do a house like that, you can’t go back,” he realized.

Hill House “is a unique piece of work,” Thom Mayne told me, because of its alignment of architect, client, and builder. “You get a couple of these shots in a lifetime, or maybe you don’t get one.”

Beyond the experimental architecture, the home hosts a range of artworks, each of which is thoughtfully installed. Outside, the landscape comes to life thanks to the imaginative plantings by Eric Nagelmann, a landscape designer who propagated plants on-site for years before installing them.

To capture this special project, documentary filmmaker Morgan Neville, who previously directed two seasons of *Abstract* for Netflix, agreed to make a short film about the home. Neville met Heavin and Weinman through mutual friends, but the project is also personal, as he grew up nearby. “The idea of doing a short about an eccentric house was really interesting,” Neville said recently. “It’s hard to make documentaries about architecture, because it just takes a long time.”

When Neville signed on, the concrete had already been poured, so he relied on Heavin’s extensive footage to capture that part of the build. The clients helped the production team identify key moments in construction so they “could understand how something comes together in ways that have both architectural and human drama,” according to Alys Nahmias, the film’s producer. (She has previously directed documentaries about Cuba’s National Art Schools and László Moholy-Nagy’s New Bauhaus in Chicago; Weinman was a producer for the latter work.) “We tried to be there at key moments where we could bear witness and have the right people activate the space.”

The unifying theme of the film, *This Is Not a House*, is play, seen both among the home’s network of collaborators and in the process of producing the film. (For example, Neville used anamorphic lenses, which introduce distortion in a way that emphasizes the building’s curves.) The film’s original score is by musician Mark Mothersbaugh (of Devo and *Rugrats* fame), who composed using his invented orchestrations—instruments made from birdcalls, restored organ pipes, and vintage doorbells controlled by MIDI data. “I could have made a more serious documentary, but at the same time, I was getting excitement from all these other parts in a connected way,” Neville said. “I guess I stood back and said, ‘Well, why don’t we all just play in the sandbox together?’”

Because Hill House is so spatially complex, it is difficult to piece together in photographs. The home rewards exploration, transition, and movement. Heavin described how the light changes in the home throughout the day and across the year, and how the weather affects one’s experience of the place. “I think we built a house that’s more about having experiences and making memories,” he reflected. He has set up a painting studio, and Weinman makes jewelry and pottery, often using 3D-printing technology. Heavin said this chapter of their lives is “a time to explore and have fun again.”

Multiple people said the otherworldly home was designed to be shared, not hoarded. Its private spaces are relatively modest in comparison to the large, open areas where art can be made or appreciated. The couple hosts fundraisers and often tours students around the property. Beyond its material durability, the home, insulated by its earthen roof, also includes solar arrays and can be run off the grid. Such a well-built structure, if maintained, stands to last for hundreds of years. What will become of it in the future?

Heavin told me the site previously included a large, underground concrete bunker that was demolished before they purchased the property. It was installed after World War II, when Japanese submarines attacked nearby oil infrastructure targets in 1942, after Japan’s strike on Pearl Harbor. The Hill House is a more optimistic bunker of sorts: It both evidences and protects the idea of creative play. **JM**

The exterior of Cross Cabin is clad in cork panels, an insulating product that is typically concealed under another facade.



MATERIAL MANIFESTO

Designed by Moontower founding co-partner Greg Esparza for his young family, Cross Cabin in Austin prioritizes plant-based products, from its cork-clad, cross-laminated timber enclosure and interior walls to the use of laminated paper as a hard surface material for showers and countertops. The direct result of an early-career designer exploring what an environmentally aware practice might look like, the building serves as a material manifesto, architectural prototype, business experiment, and livable showroom for process and product all at once.

The project pushes hard on the environmental paradigm that architectural value can arise from how a building should neutrally impact and, ideally, enrich the natural ecosystems at all phases of its life: construction, use, and disassembly. Could it even improve the well-being of the people involved in the process?

While Moontower focuses on renewable materials, it was equally critical at Cross Cabin that the materials chosen are nontoxic. This commitment to wellness extended beyond

Interior spaces are defined by CLT panels for floors, walls, and ceilings, offering a pleasantly continuous material palette.



Greg Esparza pushes the ecological envelope with Cross Cabin in Austin.

manufacturer transparency regarding chemicals and labor practices: Moontower was also intent on creating a nontoxic environment on the job site. Commonplace hazards like spray foam insulation and fiber cement, drywall, concrete, latex paint, and polyurethane were eliminated.

Concern for job site health arose within a larger reconception of residential assembly. As Esparza put it: “The usual layer cake of materials and trades in a typical home wall assembly is something I was reacting to. So, rather than latex paint over fiber cement over a weather-resistant barrier over sheathing over insulation over framing, enclosed with drywall that was painted—all of which required painters, framers, insulators, and drywallers—I designed the house as just cork over a weather-resistant barrier over CLT, all of which can be assembled by carpenters.”

Like many students entering architecture school in the early 2000s, Esparza, when he enrolled at the University of Texas at Austin School of Architecture where I taught him, was confronted with the seeming irreconcilability of two

A double-height gathering space unites the home, and more private second-floor spaces are lofted around the perimeter.



Cork also appears in the interior, as seen in the bathroom. In the bedroom, plywood surfaces are naturally lit via a skylight.



powerful concerns in architectural discourse: intellectual respect for critical architectural form on the one hand and the pressing ethical consideration of environmental performance over formal sophistication on the other. As at many schools, these interests were then associated with identifiable camps of faculty that barely overlapped.

Compelled to excel in both areas of investigation, Esparza cofounded Moontower in 2010 with Frank Farkash and Jeff Munoz. They envisioned a collaborative design/build practice focused on resolving nagging conflicts between environmental response and affordability, humanistic spatial organization and construction geometry, and architectural oversight and craftsperson skill—which meant they were often the folks building the buildings.

Esparza hoped for a house commission that would allow him to maximize the use of plant-based materials. But Cross Cabin Build and Supply, the Moontower satellite company that Esparza runs, grew out of a dawning awareness that there are few clients (don't let Austin's reputation fool you) willing to

commit to radical paradigm shifts. Esparza realized the only way to make it happen was as an active agent rather than passive recipient. The Cross Cabin house is the first of several prototypical houses Moontower has designed. It's a relatively unconventional model for architectural practice, lacking a clear track for economic success. As Esparza was constructing the house, he realized that many of the products and systems were being used in Austin for the first time. By the end of construction, Cross Cabin had become the local rep for Amorim Cork Insulation, mafi natural wood floors, Alkemis Paint, TimberHP wood fiber insulation, HempWool insulation, VaproShield, and Simpson Strong-Tie. That's the "supply" part of Cross Cabin Build and Supply.

Business model aside, the house is also a rigorous investigation into mass timber panels. By setting various panel proportions perpendicular to each other, and thereby generating short cantilevers, and by accounting for the use of all cut pieces, Esparza has been able to generate remarkably rich layering, especially in the making of surprisingly deep, glass-enclosed

window seats and startling sectional slots of space. Yet the house is directly and straightforwardly detailed, allowing the basic steps in its fairly simple carpentry to remain evident.

Esparza argues that "a more tangible engagement with the act of making houses is a step in the right direction when it comes to material health and indirectly embodied carbon considerations." He calls his home a cabin because, despite its spatial sophistication, the image of the cabin evokes "a counterpoint to the tendency in the modern pre-fab world to focus on portraying their product as the next point in a technological march of progress." Moontower is building from the ground up, sidestepping the virtue-signaling of green building or envirotech—and moving toward a more grounded, tangible practice.

David Heymann is an architect, writer, and the Harwell Hamilton Harris Regents Professor in the School of Architecture at UT Austin.

From a repurposed church in Buffalo, artist-architect-educator Dennis Maher leads the Society for the Advancement of Construction Related Arts.

On the altar of an 1850s gothic revival church, 12 students and a small team of instructors dress a rough wood-stud-and-dry-wall construction with tape and mud. The next day, the small white room has been roughly cut into pieces, removed from the altar-cum-woodshop, scrawled in graffiti, and remixed into a tight labyrinth set in the nave of the church next to a vast number of architectural experiments. It's my second day in Buffalo, New York, and I'm standing in the drywall maze discussing the typical sites of architectural tourism I've seen in my brief time in the city—Sullivan, Wright, Richardson. The underlying tone of the conversation leaves unsaid that the preservation attitudes of all three seem inadequate next to the model of historical experimentation we're standing within.

The conversation is cut short as I sit with the group for a presentation of their cabinet-grade display cases for old tools, called a "Toolbox Talk." The structure of presentation and review would be familiar to any architecture student or professor, but the difference in collective engagement with the process far outstrips that of most university settings. The instructors fade into the crowd as the students guide and direct the conversation with questions and meaningful critique. The cohort is the 2024 spring iteration of the Society for the Advancement of Construction Related Arts (SACRA), and the church—along with all its full-scale mock-ups, installations, models, drawings, experiments, events, and public works—is Assembly House 150 (AH150).

Started in 2014 by artist-architect and University of Buffalo faculty member Dennis Maher, Assembly House 150 is a loose bag combining an arts and public outreach project. As described by Maher, it's equal parts "construction trades workshop, art and design studio, and dynamic museum." The

READILY AT HAND

various initiatives—of which SACRA is a major component—come together to produce an intentionally messy whole, more interested in the overlaps and slippages between historical preservation, labor education, and design practice than in any of their specific qualities. As a result, very few of the disciplinary bounds and typical goals of the three fields hold within the walls of the church, and increasingly—through public commission work—they disperse throughout the city that AH150 calls home.

In my time visiting the site, I'm struck by the flexibility of material choice in a school about "construction basics." The church is full of found objects and loose parts, and in anecdotes from both Maher and others around the city, many people have taken the opportunity to "donate" various objects of specious value to the site. These objects then find their way into both the educational program and public commissions. In my conversations with the team and apprentices at AH150,





Facing page: The exterior of SACRA maintains the original look of the church.

Left: Beneath the church's pointed arches, a workshop unfolds complete with workstations and 1:1 mock-ups by students.

Above: Dennis Maher mentors a current student.

Below: To accommodate a test bed-like environment, many elements are agile and flexible, like this framing set on wheels.

they made clear that material is primarily valued for its economy and accessibility. In that frame, a sheet of plywood and a dusty desk from an estate sale begin to look alike: They are both readily at hand. Maher also sees use in these historic materials as teaching tools: "We're trying to build an awareness of the value of those elements to appreciate the qualities that they offer, but we're not going to go back and do it exactly like they did 100 years ago. We can understand how it was done, but now we will do it in a different way."

Both the construction process of these found objects and their formal qualities play a critical role in the design education that comes with SACRA's workforce training basics. For Maher and the team, the biggest goal of the program is to extend beyond the skills into worker autonomy: "SACRA has been a key initiative to help provide basic skills to people who want to get into construction-related careers, but equally important is to empower people outside of architecture proper to have agency in shaping their own surroundings," he said. To that end, the classwork and the public commissions reshape conventions of typical architectural labor to allow for design autonomy at the level of the worker.

In each of the projects I was shown, the AH150 team aimed to facilitate engagement with students, skilled trades workers, and various publics by treating the projects as open frameworks for individual and productively discordant expression. This attitude disrupts the typical "design into construction" timeline of construction and makes the act of work itself the medium of both Maher's artistic expression and various politics of collectivity. It similarly disrupts the typical drawn products of architectural work and thinking: "The drawing doesn't specify what everything needs to look like," Maher explained. "It operates as a general outline for a basic framework, and then the variables are allowed to fit into that."

Within each of those spaces marked for individual intervention, Maher sees potential for self-actualization. The ethos of AH150 shifts the imparted meaning of architecture from a missive sent by a not-present author (the architect) to being held within the collective production process itself. While the various publics that use the products of AH150 are well served in their own aesthetic experience, it's clear that the full benefits are in joining the production of these spaces. The feeling that carries through the installations themselves suggests taking control of the production of the city and its spaces—and moving toward new collective ends.

Spending time in the largely windowless church, it's easy to forget that this is the exception. The works by AH150 and especially SACRA feel like fragments from another world,

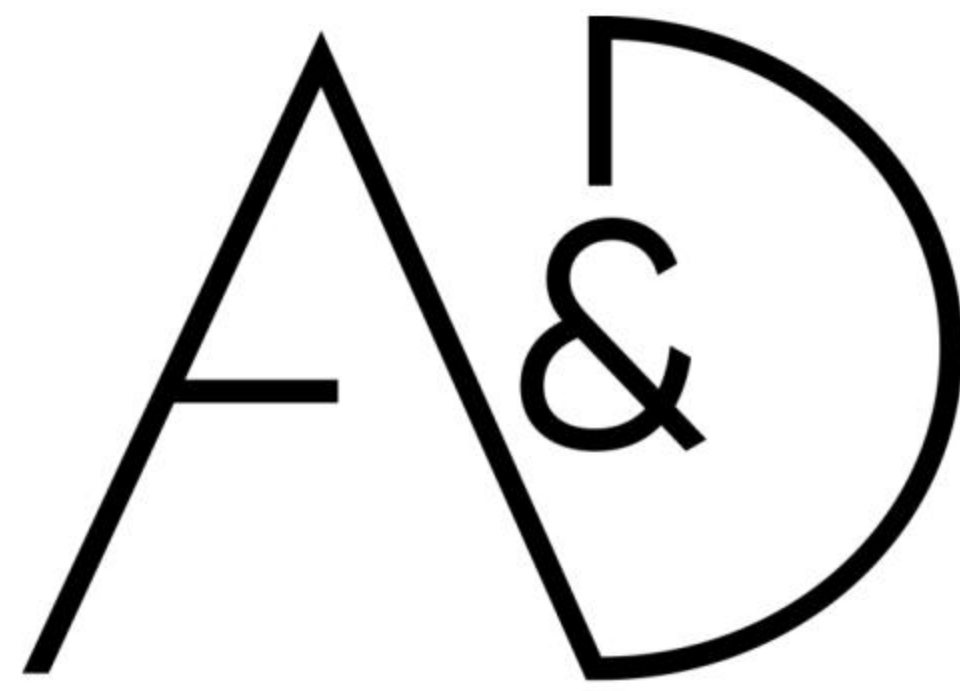
one where architecture and the city are allowed to breathe as open frameworks without the pressures of over-professionalization. Instead of retreating behind the discursive trials of academia or the bureaucratic castle of professionalization, AH150 embraces the mess and ease of shared labor to move beyond the spatial into the directly social. In at conversation about personal work, we agreed that materials, self, and

space are in a co-constitutive relationship in a constant state of flux. The best practice for both ourselves and the people around us is to treat the three as a field of constant invention.

Adrienne Economos Miller is a designer and educator with research interest in work, waste, and queer deconstruction.



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Drummonds

The quintessential Scottish trip would include the windswept Highlands as well as a stay in the Aldourie Castle. The 300-year-old castle features 12 bedrooms and five cottages and can be rented for exclusive use.

Drummonds has been the long-standing bathroom supplier to Aldourie, and the brand is known for its signature British style and craftsmanship. Previously a dealer of antique bathroom pieces, Drummonds established its foundry 30 years ago. Today the company is known for combining traditional techniques with cutting-edge technology. Adding to the grandness and warmth of the castle's interiors are the equally elegant and appropriate bathrooms featuring Drummonds products.

drummonds-uk.com

Bathroom fixtures blend in perfectly with the period surroundings. The Lowther vanity in Arabescato marble and polished nickel is by the U.K.-based Drummonds.

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Carlisle worked with The Four Seasons hotel brand on its San Francisco location. The interior design, created by Marzipan, is impressive and offers guests a chance to experience modern luxury in beautifully furnished rooms and suites that provide panoramic views of the city.

Carlisle Wide Plank Floors was selected to provide the flooring that would equal the quality and luxury of the hotel. The design required a modern look and feel using the highest quality raw materials. Two Collection floors were used as inspiration to create the perfect mid-gray toned flooring: the Studio Collection's white oak material and the custom stain recipe of Sutton Place from the Manhattan Collection. The result is a uniquely curated floor that was perfectly paired with the space.

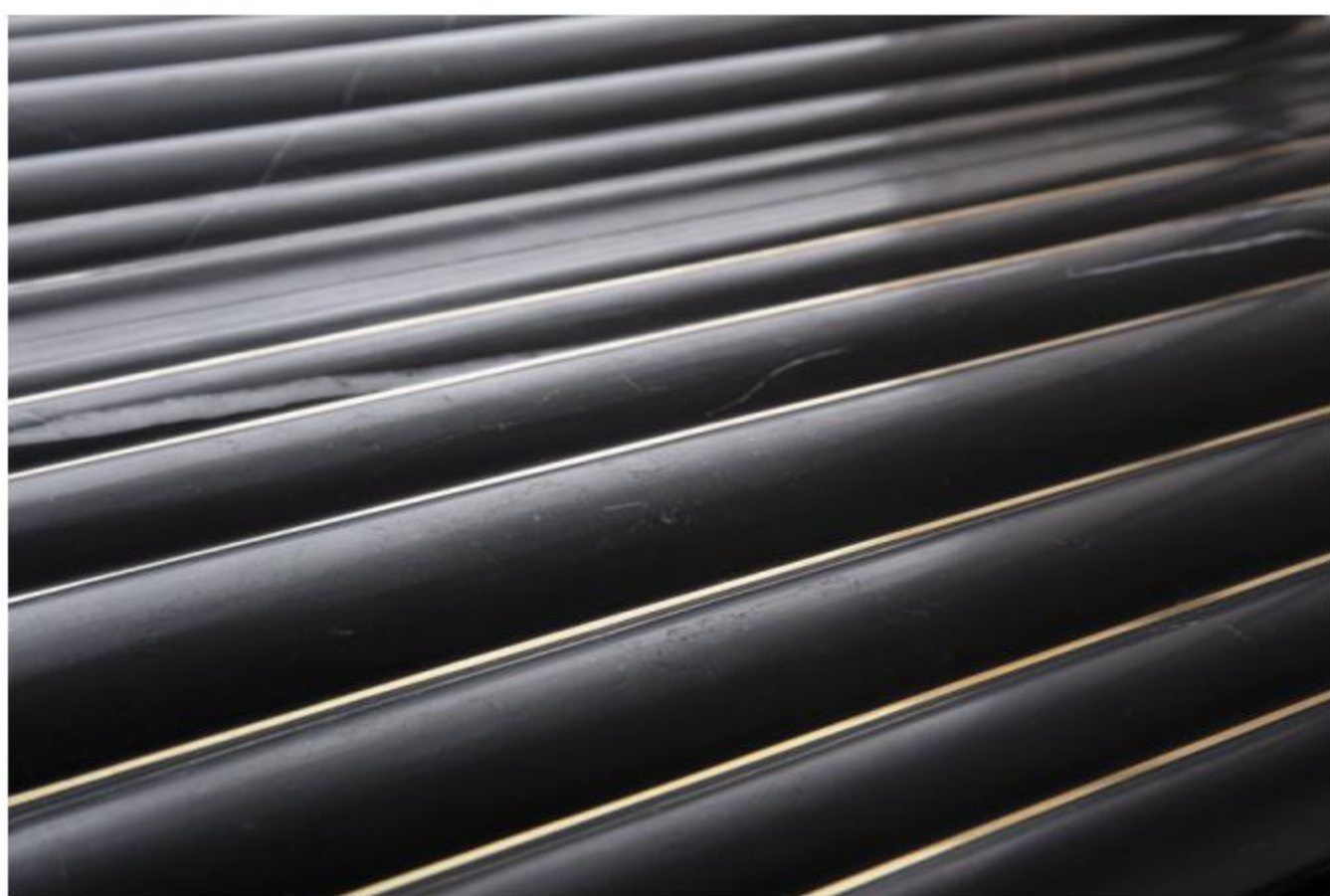
wideplankflooring.com

Artistic Tile

Designer Alexandro Perdomo of Alexandro Perdomo Design chose Flute Deco Nero as the backdrop of the statement wall for Kravit Jewelers. The burnished logo of the boutique jewelry store pairs brilliantly with the brass detailing of the sculpted black marble tile. To further elevate the shopping experience, Alexandro selected Veronese Multi Color for the floor, Veranda Mirror for the bar, and Groove Vanilla Onyx for the bathroom.

artistictile.com

Luxe materials like Flute Deco Nero pair perfectly with the master craft on display at Kravit Jewelers. The dark color palette creates a stunning composition and statement piece for the space.



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Facades

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All Aluminum Everything



EINAR ASLAKSEN

A visit to Hydro's 100R exhibition during Milan Design Week yields inspiration for facade design today.

At first glance, Salone del Mobile—the “Coachella of chairs”—and the wider Milan Design Week (MDW) have nothing to do with facades. But during my days of visiting showrooms, seeing exhibitions, and talking to designers, I found items that inspired my architectural brain. Across many displays, material sourcing and manufacturing were central aspects of the conversation. I was impressed by *Surface!*, an installation by bahraini-danish studio of a screen of shape-shifting stainless steel tubes as part of Design Space AIUla's first showing during MDW: It could be a facade or a room divider or a fence or an art installation. And I enjoyed Dropcity, a new underground center for architecture and design established by architect Andrea Caputo—WASP's installation occupied tunnels under the train tracks leading to Milan's central station. Here, 3D-printed clay was used to make multifunctional wall modules and other experiments in parametric ceramics.

But perhaps the most refreshing envelope-related item showcased the design potential of a new material. (It also illustrates the popularity of metallic aesthetics and objects at MDW.) At Capsule Plaza's Spazio Maiocchi location, Hydro, an aluminum and renewable-energy company, wowed with its first showing at MDW. It commissioned leading designers to create prototype products using its new Hydro CIRCAL 100R recycled-aluminum product, which has a carbon footprint of below 0.5 kg CO₂e per kilogram of aluminum. (Astute AN readers might recall that Hydro's CIRCAL 75R product was featured in an interview with decarbonization

consultant William Beer published in last September's issue of the newspaper.) The results varied in size from table lamps to room dividers, displayed on sheets of aluminum set on crinkled blocks of the same stuff.

The *Prøve Light*, designed by Max Lamb, reproduces bits and bobs common to window extrusions, including, apparently, a “drilling guide, T-slot for nut or bolt head, ribbed texture for grip, ball and socket joints, a spring, heat sink, a musical instrument, reflector, and a subtle surface decoration.” The resulting shape is what might happen if you asked AI to generate a window profile.

Inga Sempé's *Grotte* is a lamp made by two pieces that slide into each other, with the specific shapes chosen to be cave-like and avoid the typical contours of normal dies.

Still other designs—crumpled-looking vases by Shane Schneck, shelving system by Philippe Malouin, chair by John Tree, room partition by Rachel Griffin, coatrack by Andreas Engesvik—demonstrate aluminum's strength and versatility.

The pieces could have been realized with other metals, but they serve as a reminder about the benefits of recycled material—provided it is properly reclaimed after use. What if you created imaginative profiles that slotted together to clad your building and designed the maintenance system in which they could be de-installed, melted down, and recast decades later? The possibilities are endless, even as our planet's resources are not. JM



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The Shingle Style

SOM delivers another innovative curtain wall at the Schwarzman College of Computing at MIT.

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Interior finishes: Euclid

Skidmore, Owings & Merrill (SOM) boasts an enviable history of innovation in glass curtain walls. From New York's Lever House to Chicago's Inland Steel Building to San Francisco's One Bush Street, SOM has been at the forefront of American curtain wall technology for generations. Its latest iteration of this building form is the Schwarzman College of Computing, the newest addition to the Massachusetts Institute of Technology (MIT) campus.

"This building is very much in the tradition of our history in curtain walls," said Colin Koop, a design partner at SOM who oversaw the building's design. "It took incredible effort to make it look effortless."

The facade, double-glazed for temperature control, is a stunner. The exterior elements are a series of independent glass "shingles." Each is roughly 10 feet wide by 13 feet tall, and they subtly overlap. "They're canted both vertically and in plan," Koop explained. "It gives them the appearance of being not just independent of each other but also of being suspended, or floating."

This latticework of shingled glass, the architect continued, "extends past the building's perimeters in a gesture we call 'flybys.' It brings the building in harmony with surrounding structures." The hodgepodge of adjacent architecture includes both nondescript buildings from the 1960s and 1970s and Indian architect Charles Correa's McGovern Institute for Brain Research, completed in 2005.

Above: Seen from the street, the curtain wall takes on a shingled texture.

Right: Interstitial spaces create dynamic nooks in between facades.



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38 Case Study

A'N FOCUS

May 2024

The Shingle Style, *continued*

Another crowd-pleasing feature of the main facade, in addition to the glass, are two large V-shaped trusses. Koop explained that “the load above is transferred to a single point below. They are steel I-beams enclosed in polished stainless steel.”

The interior mimics the transparency theme of its exterior. Science and study are “on display,” with glazed spaces that allow views of the work taking place within. A grand central stairway, as dramatic as one in an opera house, is made of light wood and has a vaguely Scandinavian feel. It leads up to a big lecture hall on the top floor. Along the way it is peppered with multiple nooks for seating and student-student or student-faculty interaction, including leather cushions.

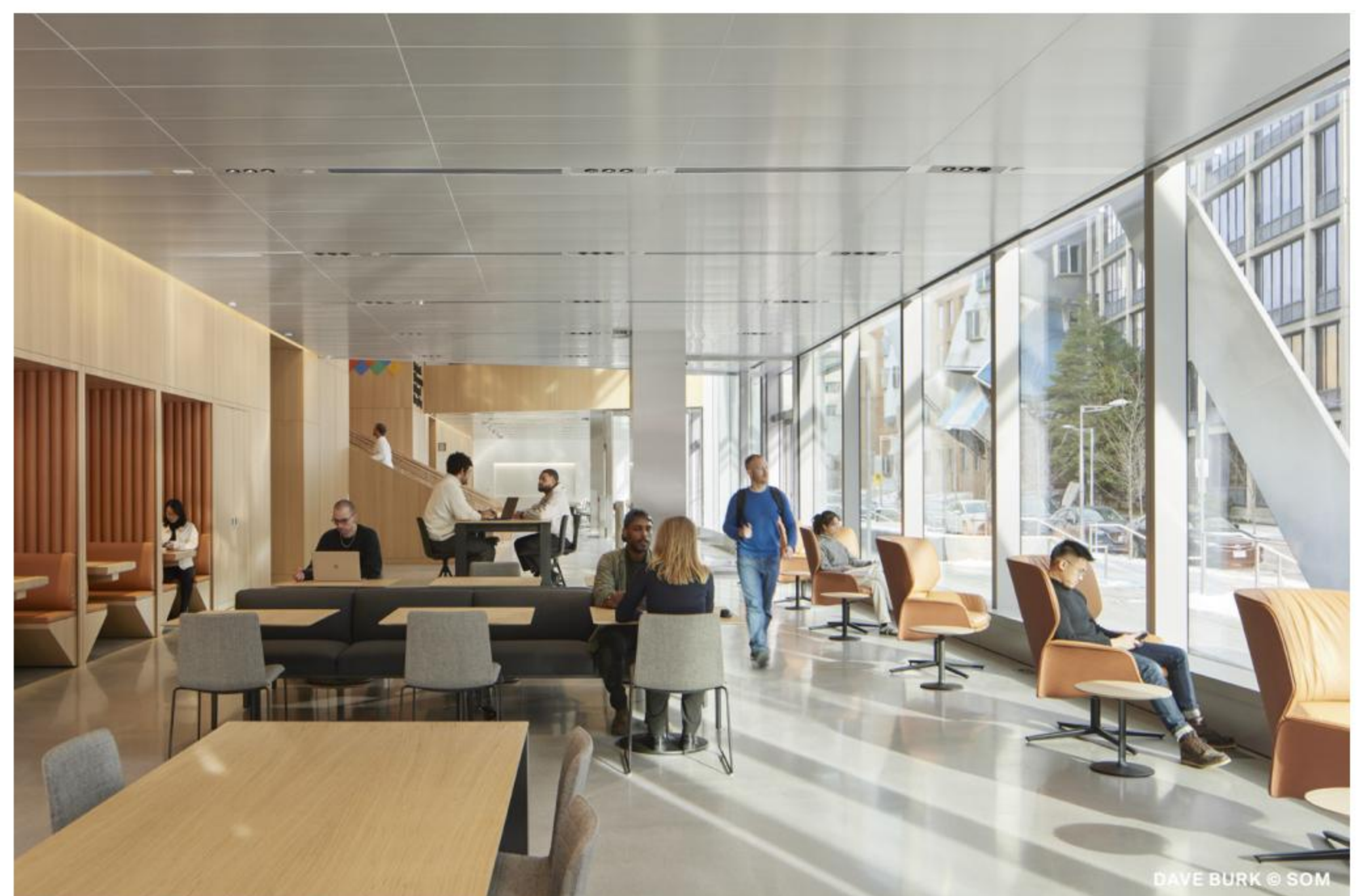
MIT is renowned for its geek culture, but Koop noted a contradiction: “Despite all the talk of collaboration, it’s a very heads-down atmosphere,” Koop averred. “People like to be alone together. They put on their hooded sweatshirts and sit with their laptops, feeling no need to talk to anyone else. The interior design was driven by evidence of what students wanted.”

Schwarzman serves an important placemaking role as the institute expands beyond Vassar Street. “Historically, everything beyond [that] was a no-man’s-land,” Koop said. “Now Vassar is at the very heart of the campus, not its perimeter.” And there’s more to come—Diller Scofidio + Renfro is transforming the old Metropolitan Storage Building, a massive redbrick building at the intersection of Vassar and Massachusetts Avenue, into the new MIT School of Architecture and Planning.

Artificial intelligence will be one of the chief research initiatives taking place at Schwarzman. With all of its transparency, here MIT and SOM have created a powerful gesture of openness and accountability—a crucial perspective as AI technology advances in ways that are both exciting and foreboding.

“They wanted a building that came from classical principles of proportion, symmetry, and transparency,” Koop concluded. “Furthermore, one that would function for the kind of research they wanted to do and that was going to be a contributor to the street. They didn’t want something closed off or dystopian. That’s just not the way MIT is now.”

James McCown is a Boston-based architectural journalist and the author of *The Home Office Reimagined: Spaces to Think, Reflect, Work, Dream, and Wonder* (Rizzoli, 2024).



Clockwise from top: The entrance is defined by parted “shingles”; stadium-style seating allows for spontaneous gathering and study inside; study spaces are located on the perimeter, inviting in sunlight; there is an emphasis on quiet spaces for focus.

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This Will Still Be Here: Gladding, McBean Approaches 150 Years

Architectural photographer Christopher Payne captures the timeless craft of terra-cotta fabrication at the historic Gladding, McBean factory in California. While his photos capture the energy and precision of making, writer Elizabeth Snowden elucidates how artisans are continuously updating an age-old process.

Twelve years ago, a reservoir called Folsom Lake, about 30 miles northeast of Sacramento, dried up. On the drought-cracked bottom lay a clay pipe, submerged since 1955, when the reservoir was built. That pipe, like most that run below cities like Sacramento, San Francisco, and Los Angeles, was made by Gladding, McBean, a terra-cotta manufacturer that's been around almost since California joined the Union.

After reading an ad for a clay deposit in 1875, Charles Gladding left his job making sewer pipes in Chicago and set out for the Sierra Nevada foothill town of Lincoln. Together with partners Peter McGill McBean and George Chambers, he built a factory and began making terra-cotta sewer pipes and, with the aid of the expert artisans who immigrated to California, quickly expanded into terra-cotta roof and floor tiles, and, during the Depression, garden pots and houseware.

The factory still sits prominently at the end of Lincoln's main road. Its role in putting the town on the map is palpable in street names, architecture, and the workforce it employs. It's full of archaic beehive kilns and pallets of pipe pieces drying in the warm, arid air. There's a quiet hum of movement as workers cart clay around and operate the kilns. While this work looks much like it did in the 19th century, Gladding, McBean workers are applying cutting-edge technology to the traditional process.

Jamie Farnham, who runs the architectural terra-cotta department, takes me to the drafting room, where they are working on restoring the nose of New York's iconic Flatiron Building. They use laser scans to create a digital blueprint that will be crafted with a CNC machine and then hand-detailed in the studio a floor below. Fragments of the ornamental designs, swirls, gods, and gargoyles, are spread over the floor. "Back in the day, there were over 200 terra-cotta manufacturers. Now there are only two," Farnham said. As cement block and steel construction replaced terra-cotta, Gladding shifted to restoration. Today, a curving endpiece of The Ansonia, a Beaux Arts-style apartment hotel in Manhattan dating from 1905, awaits inspection.

Clay pipes make up the other half of Gladding's business. Municipalities specify terra-cotta because it outlasts other kinds of pipes and doesn't produce microparticles like PVC pipes. "What excites me most about what we do here is that it's all natural," said Ejidio Modolo, the plant's operations manager. "We take clay, form and cook it, and then put it back in the ground. From the pipes to the smallest things we make, it's all recyclable."

"When I first walked in here, I really fell in love with it," Farnham recalled. Like most of her colleagues, she's worked at the plant for decades.

Gladding was in danger of closing in 1976 when Pacific Coast Building Products, which makes just about everything that goes into constructing a building, rescued it. Pacific Coast is a third-generation, family-owned company, and its culture fit well. But Gladding, McBean also benefited from the preservation laws passed in cities like New York, Chicago, and San Francisco. The preservation movement means that old buildings built in the terra-cotta heyday will continue to need alternations in period style and materials.

In a yard outside, wildflowers grow up through the concrete. This is where workers lay out tiles to view the array of glazes, mixed by a chemical engineer, in natural light. Atop a building that once housed the factory nurse and vet are an array of Spanish roof tiles they fire in a kiln the length of a football field. A computer monitors the firing process now; in the past, people lifted up the bricks to check. Instead of painting the tiles, Gladding is unique in using a technique called flashing—exposing the baking tiles to different levels of oxygen—to produce their colors. (Stanford University's campus uses Gladding tiles, and has its own mix, Farnham told me.)

"The strength of terra-cotta comes from its plasticity," said Modolo. It's an ancient material with the durability to serve us long into the future. That Gladding, McBean is thriving speaks to its enduring value.

Elizabeth Snowden is a writer based in the Bay Area, where she also directs PALLAS.

Christopher Payne specializes in architectural and industrial photography. Trained as an architect, he is fascinated by design, assembly, and the built form. He is the author of several books, including *Asylum: Inside the Closed World of State Mental Hospitals* (The MIT Press), and most recently, *Made In America* (Abrams). He is represented by Esto.







Christopher Payne's photographic project extended beyond the Gladding, McBean factory and onto construction sites like New York's Flatiron Building, shown here, where new hand-molded terra-cotta pieces were installed.



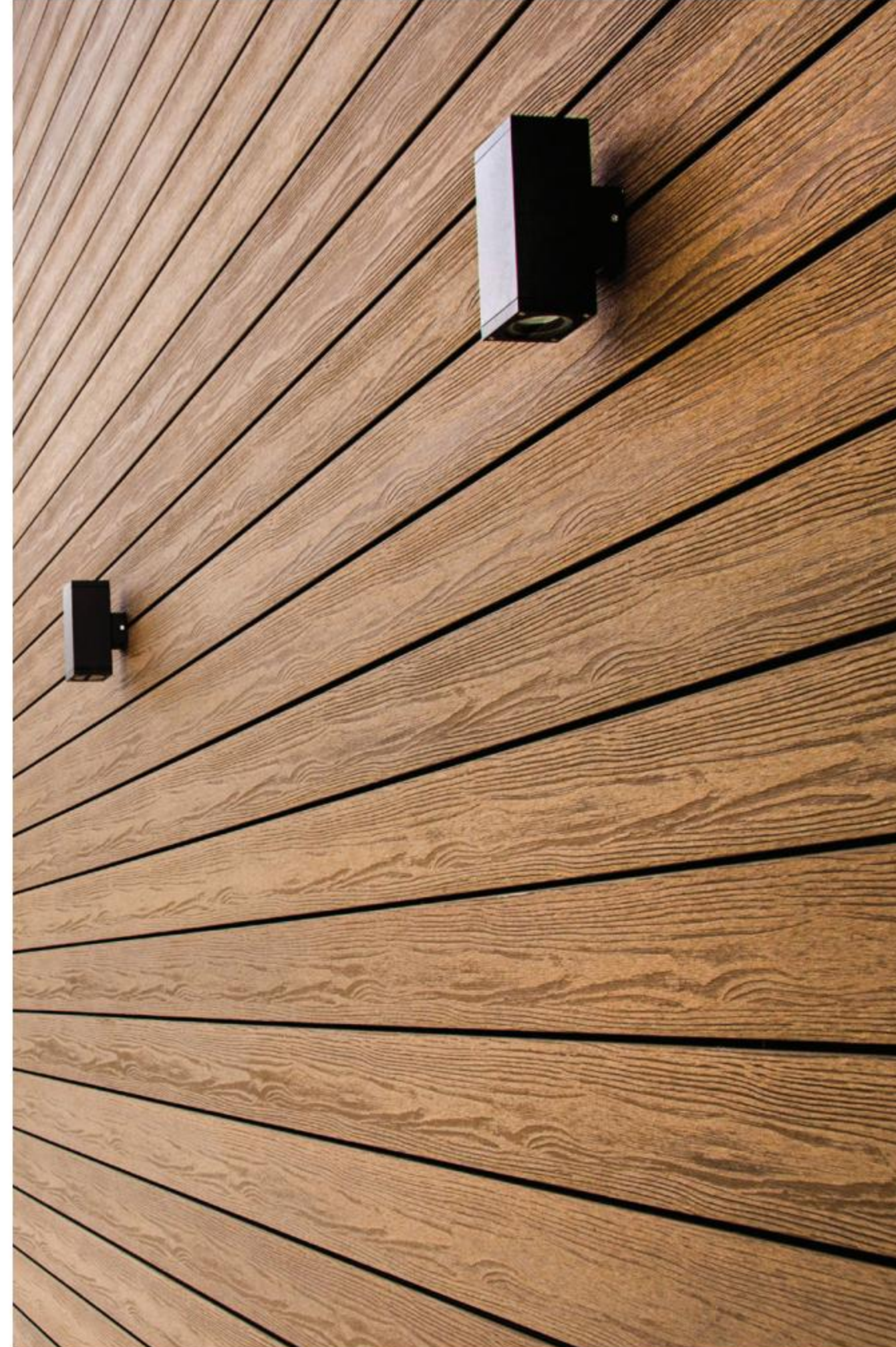
Composites

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Artisan Lap Siding | James Hardie
jameshardie.com

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Bamboo Composite Cladding | VistaClad
eva-last.com

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ForMe is an Italian manufacturer of aluminum extrusions for cladding and battens that will be officially launching in the U.S. this year at the AIA conference in Washington, D.C.



Japanese Birch & Wild Plum | Alpolic
alpolic.com

Two new wood patterns have been added to Alpolic's Timber Series of metal composite materials: Japanese Birch and Wild Plum. The panels are available in either classic or fire-retardant cores for both interior and exterior cladding systems, modular buildings, canopies, and more.



Envello Décor | Millboard
millboard.co.uk

The new Millboard Envello Décor is a decorative and structural aluminum trim designed to enhance siding installations. Available in bronze, carbon, or gold, the Envello Décor fits into the groove of the Envello Shadow Line+ Millboard composite siding, adding a metallic band between each vertical board that can be used to accent pop-outs, rooflines, or as a whole house statement.



Linarte Wood Design | Renson
renson.net/en-us

The Linarte range of vertical aluminum facade cladding from Renson is expanding with new Block profiles. With the appearance of wood and the ease of maintenance of an aluminum facade, Linarte Block profiles are available in light and a dark Wood Design variants.

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The mezzanine level of DPTC, pictured above, is encased with Kalwall panels that engulf the facility in naturally diffuse daylight, which eliminates glare and shadows, creating a comfortable and healthy daylit environment. Design Prototyping and Testing Centre (DPTC), University of Sheffield, UK | Rotherham, U.K. | Photo: Phil Grayson

You're probably used to working with glass. Glass has long been the material of choice for facades that allow for views of the outdoors. While views are valuable, glass alone doesn't account for several key components of human comfort. From a design and construction stand-point, glass can be thermally inefficient, requiring secondary systems for glare control. Kalwall's® new translucent daylighting product resolves these issues.

Integration into third-party curtainwall systems. High-performance translucent glazing. Perfect daylighting. The ability to mix and match with glass. When you need a product that encompasses both form and function, look no further than 175CW. These fully customizable glazing units bring Kalwall's industry-leading thermal performance to virtually any facade design—without sacrificing comfort or daylighting quality. Mix and match with double- or triple-glazed units, spandrels, and other claddings for the best of both worlds.

Not sure if a glass supplement or alternative like Kalwall 175CW is right for your next build? With 175CW, you'll get the best of Kalwall's panel technology with the flexibility to integrate into a much wider array of projects. Plus, daylight modeling allows you to take the guesswork out of a new product. Kalwall's complimentary daylight modeling services reveal the exact light levels your design achieves, allowing you to combine science and art to create perfect daylighting.

So remember: When you're ready for your next build or upgrade, whether it's a retrofit or a future-fit, Kalwall 175CW fits in anywhere.

A New Translucent Insulated Glazing Product to Meet Your Every Need

Create perfectly bright, comfortable spaces without sacrificing daylight autonomy. Get all the energy efficiency benefits of triple-glazing coupled with unrivaled daylighting, thermal performance and solar heat gain control—no secondary lighting control systems needed.

Pictured below is a meeting space featuring a mix of natural materials, including wood and terrazzo tile, paired with Kalwall panels to create a welcoming environment enveloped in light. Kalwall's technology diffuses light for a healthier, more balanced atmosphere, and the panels are highly insulated to ensure thermal performance that is often lost with glass. | Frank's Ice Cream | Wales, UK | Photo: Behind the Lens Media Ltd.

Pictured right is the lobby of a dentist's office, encased in natural daylight while offering patients modesty. When building for people, especially in healthcare, the benefits of introducing as much natural light as possible are well documented for patients and staff alike. | Antwerpen, BE | Photo: Marc Sourbron



Kalwall 175CW TIGUs

- Are incredibly lightweight (less than 1.5 lbs/ft²), meaning you can accommodate smaller curtain walls with the same benefits and performance factors of traditional Kalwall panels.
- Can serve as an alternative or supplement to glass to achieve exceptional spans that offer the ultimate in versatility.
- Combine the best of Kalwall's translucent daylighting panel technology with the ability to integrate into a much wider array of projects.
- Offer privacy/modesty where needed or desired.
- Are bird-friendly, thanks to their translucent nature, helping to eliminate bird strikes.
- Eliminate the need for secondary daylighting control systems, such as shades or blinds.
- Are low-maintenance and don't require frequent cleaning like glass, as well as being graffiti and vandal resistant.
- Have superb thermal properties that help buildings attain a higher level of energy efficiency, reducing their overall carbon footprint.
- Are made from recycled materials and are fully recyclable themselves for ultimate sustainability.
- Precisely insulated panels with three U-factors available: 0.28, 0.16 and 0.14 options.
- Have exceptional solar heat gain control (SHGC) that increases occupant comfort and reduces HVAC costs.

Alluding to Ayers

Bates Smart faces Embassy of Australia in Washington, D.C., with copper panels to evoke the Australian Outback.

Developer: DFAT OPO
Architect: Bates Smart
Architect of record: KCCT
General contractor: Clark Constructions
Project manager: Jacobs
Structural engineer: Aurecon, SGH
Mechanical consultant: Aurecon, Interface
Fire engineering consultant: Aurecon, Interface

Signage: Ongarato
Traffic consultant: Wells & Associates
Civil consultant: Aurecon, Sorba
Kitchen consultant: Chris Love Design, Culinary Advisors
Landscape consultant: Taylor Cullity Lethlean, Wiles Mensch
Lighting consultant: Electrolight, ONE
SOURCE

Much like Uluru—or Ayers Rock, a sandstone landmark in the Australian Outback—the hues on the faces of the Embassy of Australia in Washington, D.C., change throughout the day. This homage to nature in the built environment is not the result of interplay between sandstone and sun though, but rather was re-created with treated copper panels.

Bates Smart, an Australian practice, returned to D.C.'s Scott Circle to design the second iteration of the Australian Embassy, following up on the firm's previous modernist design for the same site, completed in 1964.

While the midcentury embassy opted for white marble with a linear grid of fenestration, the firm landed on copper as the material of choice for the new embassy, completed in 2023. The metal was selected primarily for its color: The ocher hue is “a reflection of what happens in the Australian desert context,” Bates Smart studio director Steve Jones told *AN*. Australia also has a long history of copper mining.

The custom-manufactured panels used on the facade were processed in Germany by KME. The unique shapes and sizes of the panels vary in width and height and were intentionally misaligned in collaboration with facade contractor Enclos. The varied outward inflection of the panels means light hits at different angles, thus altering the tones across the building to draw comparison to the natural phenomena on faces of Uluru.

It's no secret that copper oxidizes and patinas to shades of green and brown over time. To maintain the Australian outback aesthetic



JOE FLETCHER



JOE FLETCHER

Above: The facade stands out among its neighbors, but catches the light beautifully.

Right: Facade details reflect the blue of the sky, interrupted only by the patinaed metal elements.

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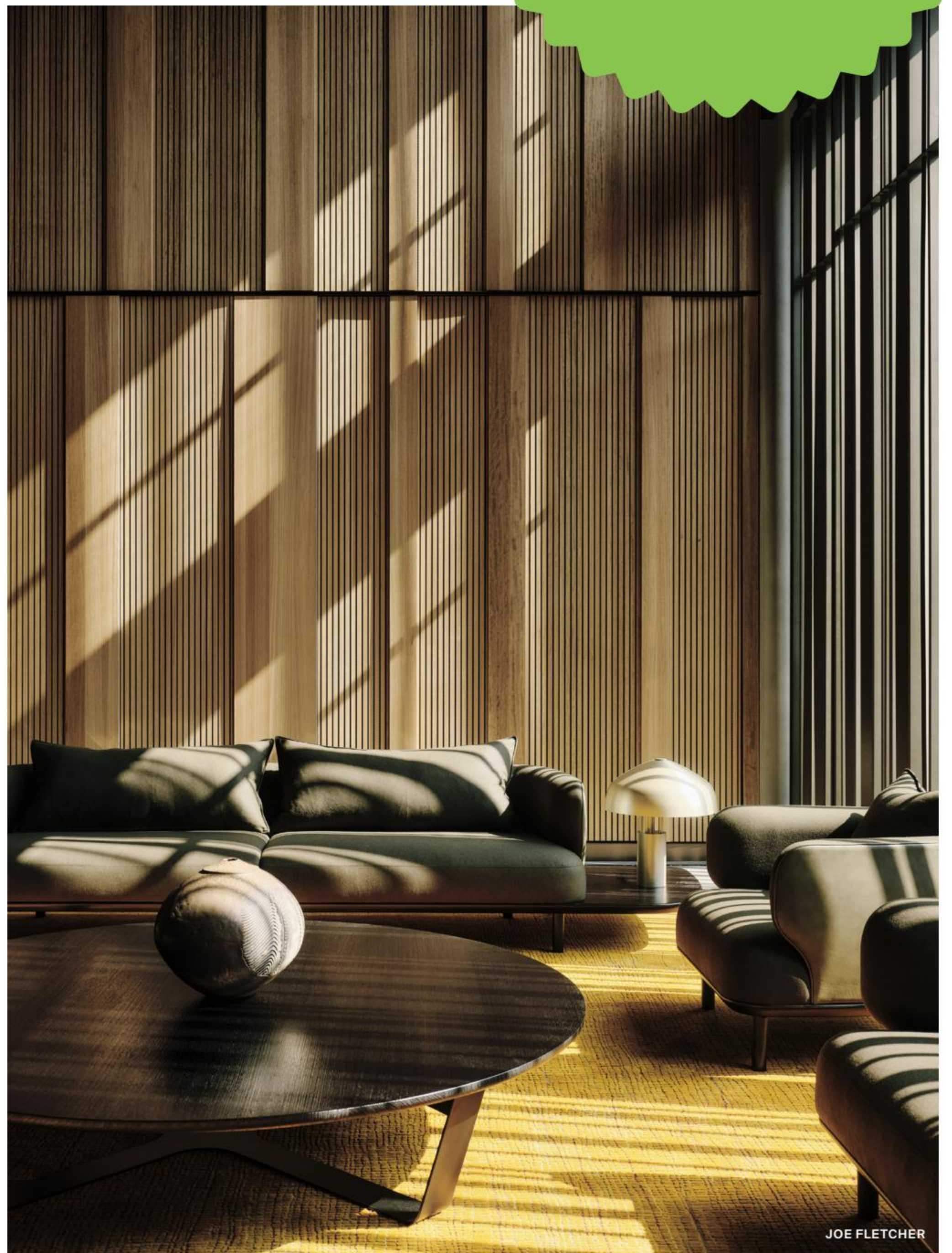
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A'N FOCUS

May 2024



JOE FLETCHER



JOE FLETCHER

Alluding to Ayers, *continued*

so crucial to the design, a clear lacquer was applied to the copper panels. These coatings are known to deteriorate in sunlight, so the design team came up with a solution: waxing. Similar to what happens when you wax a vehicle, the “sacrificial layer” added to the metal will decrease fading from direct sunlight while protecting the material from the elements and corrosion. Maintenance is required every five to ten years to keep this protective coating looking its best.

Glazing behind the copper reflects the surrounding buildings, trees, and sky, while still obscuring views inside where needed for security. But once inside, the batted rhythm of the facade repeats on interior walls. “It was a singularity of materiality inside, similar to how we dealt externally with the singularity of copper cladding to the facade,” said Bates Smart director Mark Healy. This execution is most prominent in the atrium, where *Eucalyptus pilularis* wood paneling spans from floor to ceiling, drawing attention skyward. KK

Above left: The embassy interiors continue the rhythm of the facade in an inner atrium.

Above right: Ribbed-wood details add warmth to the interior walls.

Right: A section drawing details the massing.



COURTESY BATES SMART



ATAS International, Inc.
Sustainable Solutions For A Better Future

Elder House | Magog, QC, Canada
Dutch Seam in Custom Copper PVDF Finish
Architect: Groupe A, Espace Vital Architecture,
Provencher_Roy_BBBL
Distributor: Tuiles 3R

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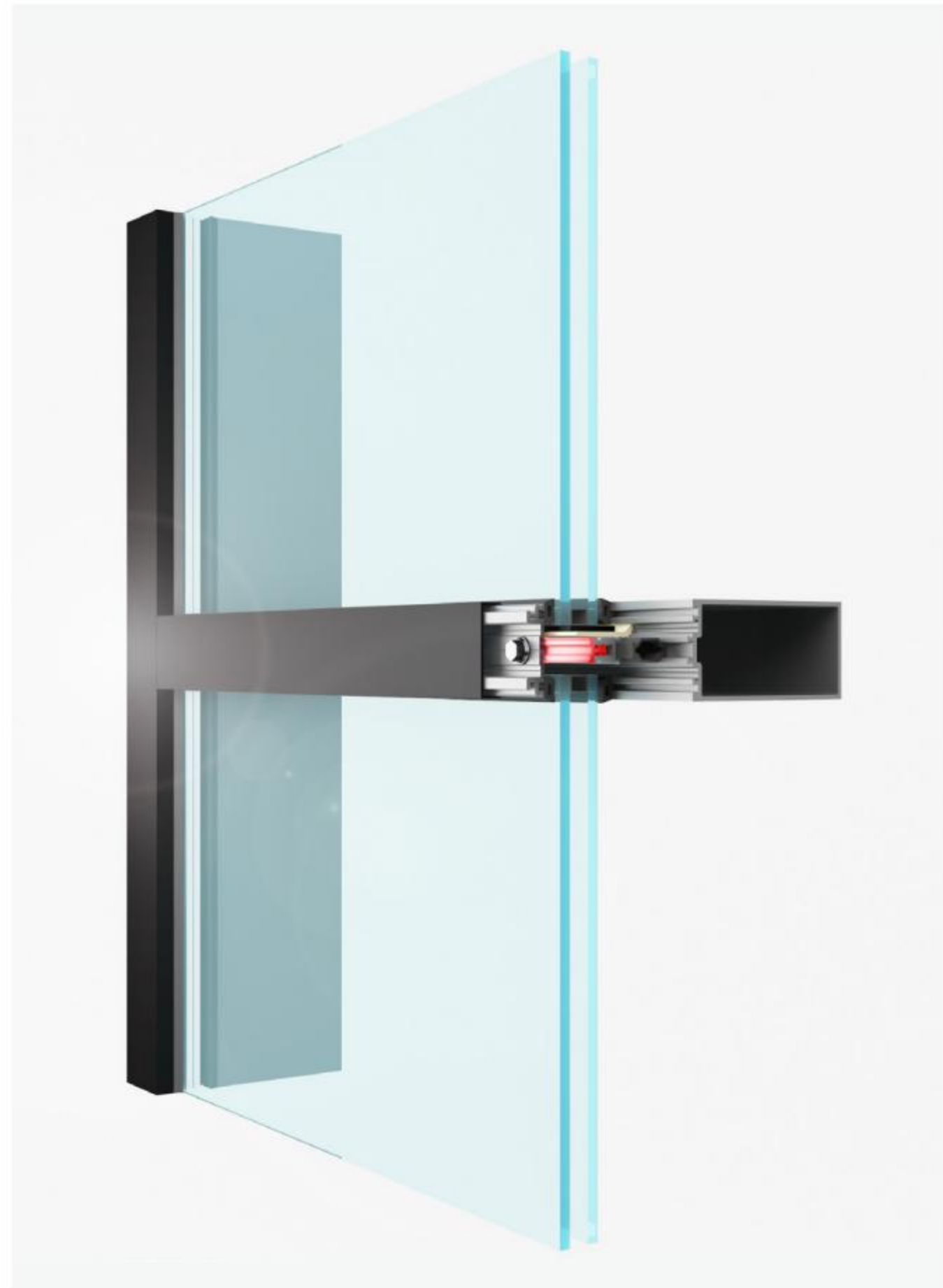
At ATAS International, Inc. we don't just manufacture metal products; we forge connections, build trust, and shape the future. Join us on this journey as we continue to set new benchmarks in the metal products manufacturing realm, driven by a passion for quality, integrity, and progress.



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Glass & Glazing Systems

These glazing and window solutions prioritize safety, thermal performance, daylight control, and customization. RCO



Reliance-TC LT | Oldcastle BuildingEnvelope
obe.com/products/reliance-tc-lt

Reliance-TC LT leads the industry in thermal performance with a U-Factor as low as 0.29, without the need for triple glazing. Performance is matched with aesthetics through a 2-inch sightline and dual-finish option.



Bird Safe First Surface Etch | GlasPro
glaspro.com

Bird Safe First Surface Etch products comply with the 2x2 rule for bird-friendly glazing. The etched dot and linear patterns on the exterior surface are visible to birds, including small songbirds, and help prevent collisions with glass.



Custom Glass Mural | Pulp Studio
pulpstudio.com

Artist Justin Kim created a playful mural for The Alley Pond School in Queens, New York, using seven panels of Pulp Studio's 9/16-inch D2G Custom Graphic Tempered Glass, a digitally printed image that uses ceramic inks fired onto the surface.



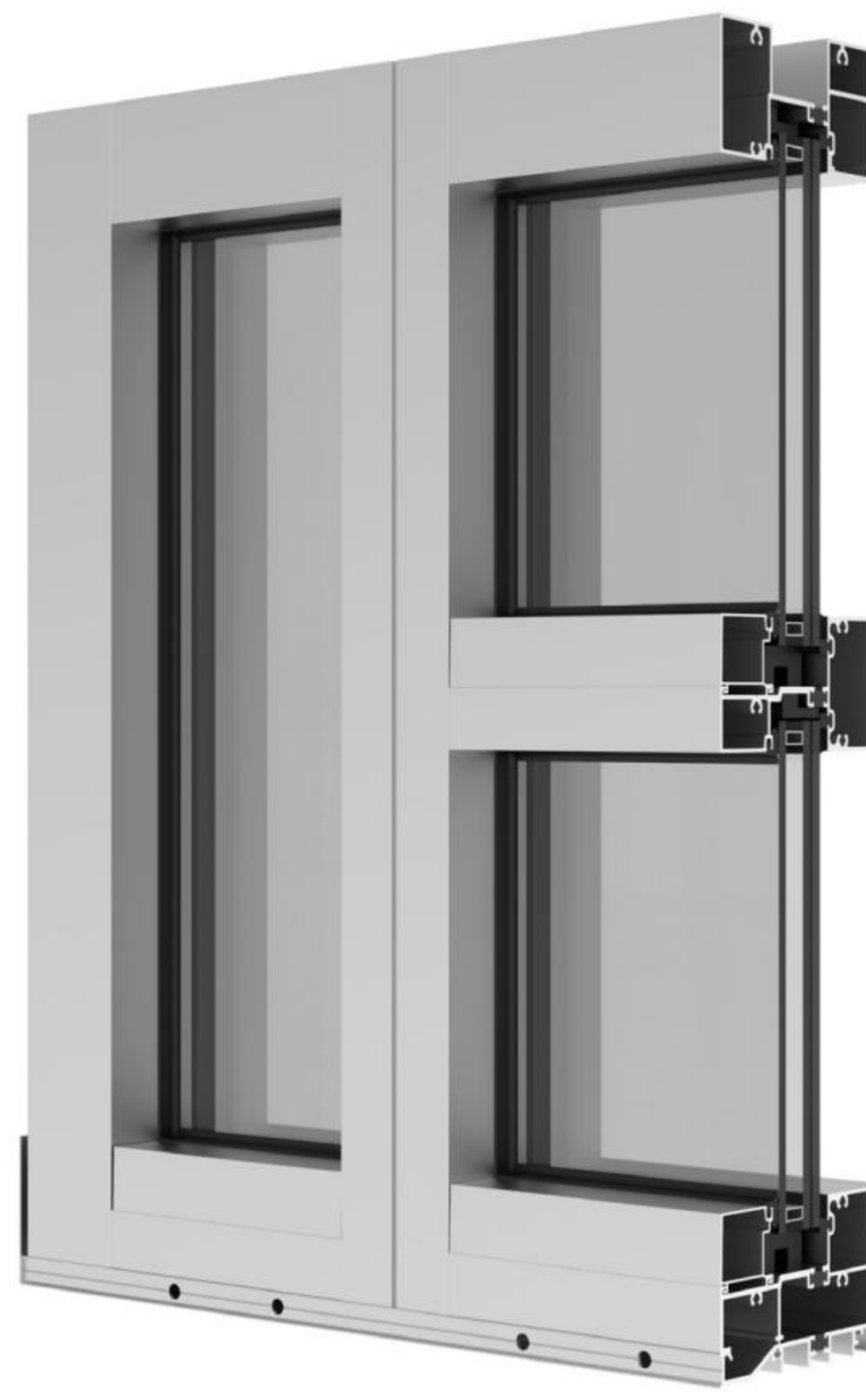
Smart Glass | Halio
halioinc.com

Smart glass powered by Halio enables maximum daylight control to reduce glare for occupant wellness while blocking infrared light for energy savings.



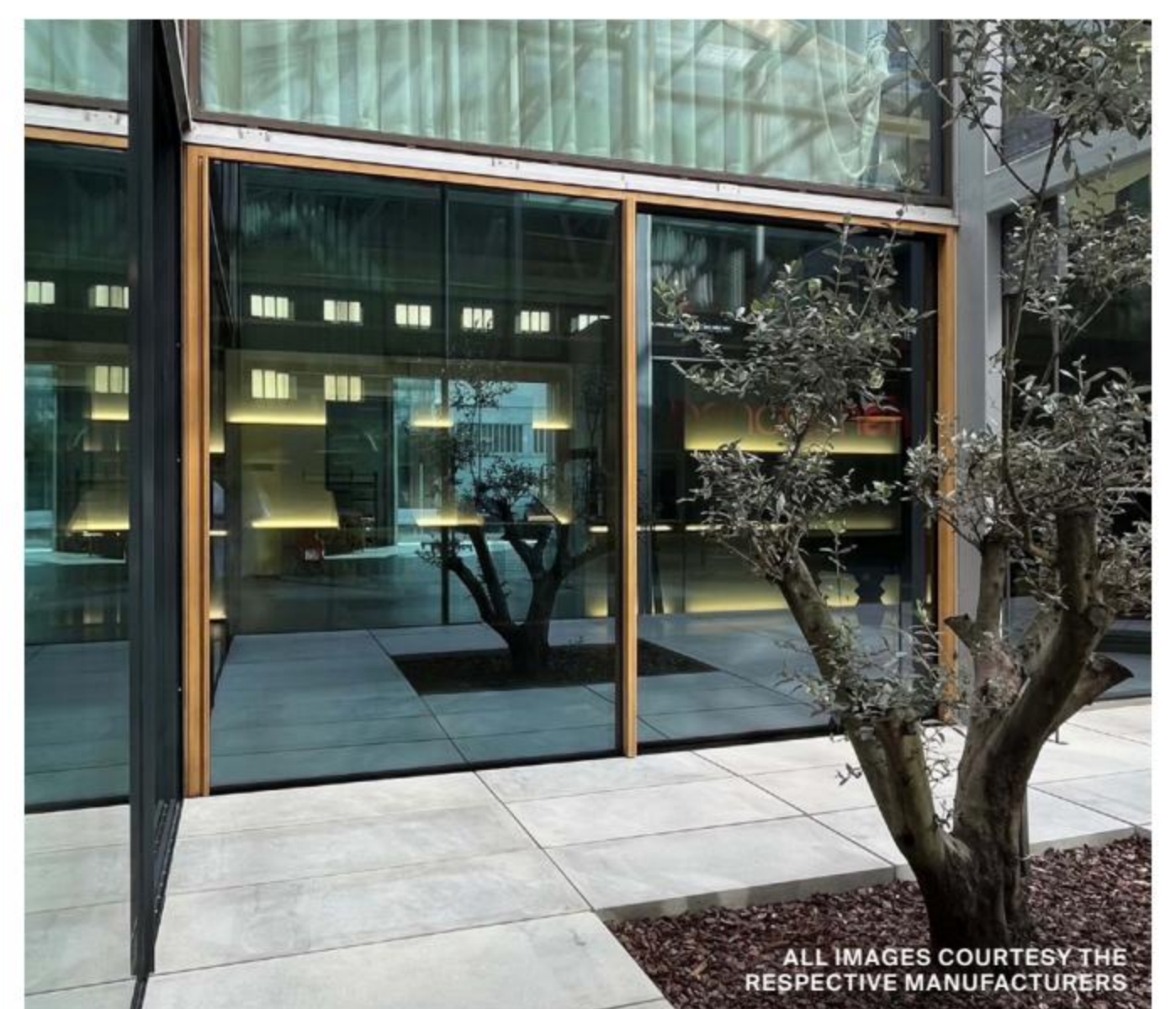
SunGuard SNX 70+ | Guardian Glass
guardianglass.com

The newest addition to Guardian Glass North America's commercial range of triple-silver-coated glass, SunGuard SNX 70+ coated glass combines high visible-light transmission, a neutral aesthetic, and strong thermal performance.



YHS 50 TU | YKK
ykkap.com

YHS 50 TU is a high-performance storefront system designed for insulating glass 1" to 1-5/16" thick. This thermally broken, impact-resistant, and blast-mitigating system can be pre-glazed or field glazed.



Ah!SW | Panoramah
panoramah.com

With the same aluminum core as the ah!38 series, ah! Superwood windows incorporate wood for excellent performance. The pinewood species is subjected to a chemical structure reorganization process that improves its properties and is suitable for both interior and exterior cladding.

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©Michael Moran/OTTO

PROJECT SHOWCASE

Lincoln Center's David Geffen Hall

New York, NY

Everything in the building, from door handles to floorboards to railings, feels reassuringly solid. Pulp Studio fabricated over 8,700 square feet of flat and curved, laminated glass railings, using an acid etch glass to meet the design aesthetic and provide an enhanced level of privacy. The bent glass was chemically strengthened for increased surface protection and Pulp Studio's proprietary Precision Edge[®] technology was used on all the flat glass for a refined and professional look.

Social/Public Spaces: Tod Williams Billie Tsien Architects / Concert Hall: Diamond Schmitt
Photos: Michael Moran Glass: Lafayette Metal & Glass Company – Hauppauge, NY
Owner Rep: CMDC Consulting, LLC / Acoustics: a-ku-stiks/ Theatre: Fisher Dachs Associates
Mechanical/Electrical: Kohler Ronan, LLC

The new Lincoln Center David Geffen Hall, designed by Diamond Schmitt and Tod Williams/Billie Tsien Architects, was decades in the works but completed ahead of schedule and under budget since the pandemic forced the closure of the Avery Fisher Hall.

The first priority was to improve and revitalize the acoustics inside the main theater, to make sure it was the best-in-class acoustic experience for the New York Philharmonic. What resulted is a completely new theater inside the building, not just a renovation, creating an intimate and inclusive experience for the audience.

Fifth Avenue Reno

KPF reclads a prominent Fifth Avenue office building with custom oversize IGUs.

Design architect: Kohn Pedersen Fox
Structural engineering: GMS
Electrical engineering: Cosentini
Civil engineering: KPF
Lighting design: TM Light
AV/Acoustics: Acoustics Longman Lindsey
Signage/wayfinding: Gensler
Fire and life safety consultant: William Vitacco Associates
Facade consultant: Front

Vertical Transportation: Edgett Williams Consulting Group
Facade Access: ENTEK
General contractor: Turner
Client representative: Brookfield Properties
Facade system: Island Exterior Fabricators
Glass: Interpane

In 2018, Jared Kushner sold 666 Fifth Avenue to Brookfield Properties. Originally built in 1957, the midcentury skyscraper was due for an overhaul. This began with a renumbering of the address, which was changed to 660 to avoid satanic associations.

The tower's original facade, an early unitized system made from aluminum, was extremely energy inefficient by today's standards. After more than a half century of service, it was removed through a coordinated effort above Fifth Avenue, one of Manhattan's busiest pedestrian thoroughfares: The construction team hauled the disassembled panels down through the building's elevator core.

Brookfield then hired Kohn Pedersen Fox (KPF) to design a new facade. To maximize views, the firm opted for a curtain wall system—a choice that was complicated by the age of the existing structure. Unable to hang the curtain wall from the tower's thin slab edge, as is typical in new construction, the architects could only suspend the system from the building's perimeter columns.

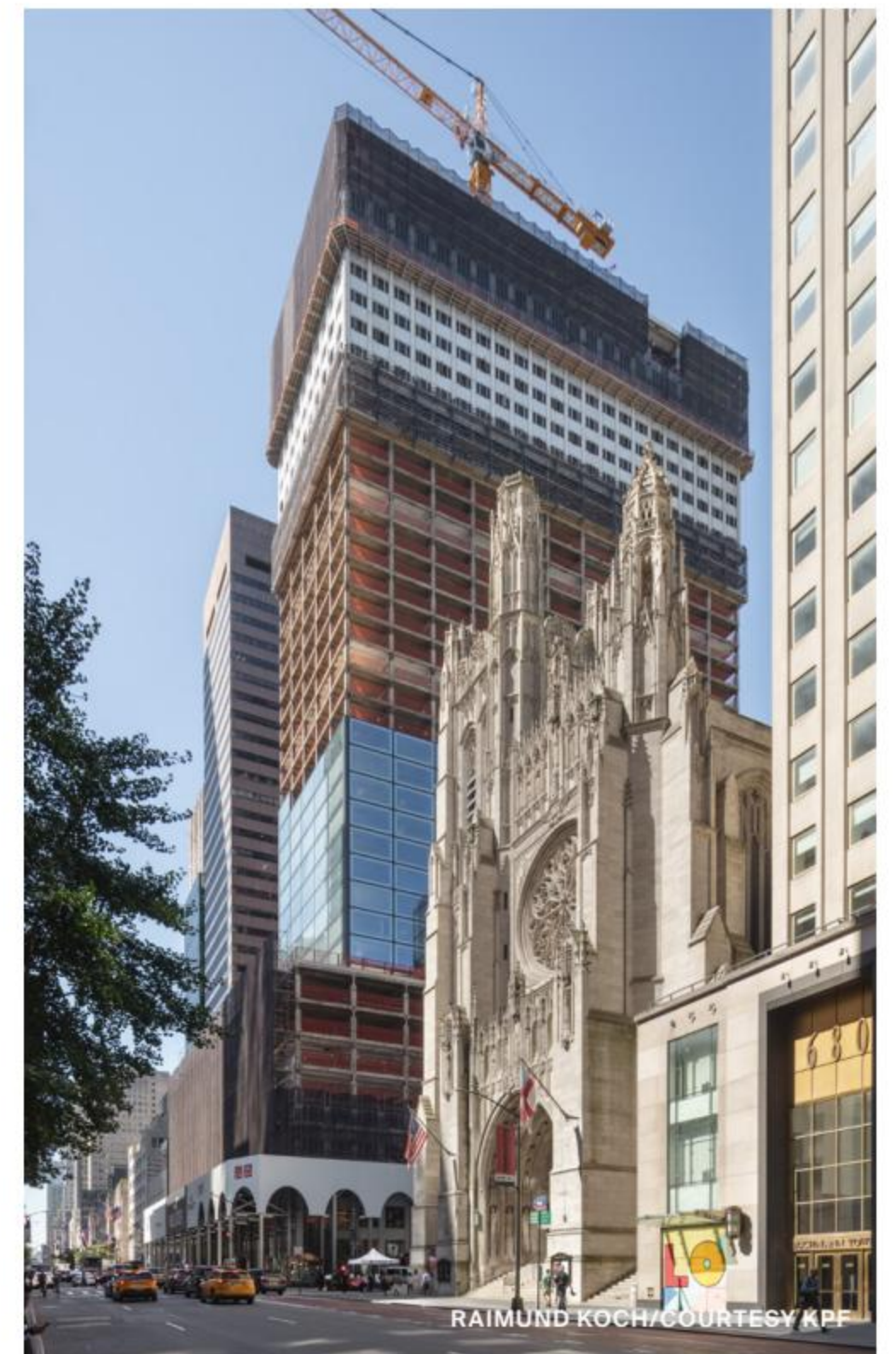
Taking advantage of the relatively short 18-foot span between perimeter columns (usually closer to 30 feet in a standard Class A office), KPF worked with German glazier Interpane to develop an oversized insulated glass unit fitted to this distance. Coincidentally, the building's floor-to-floor height nearly matched Interpane's 10-foot standard width for jumbo glass panels. When width is preset by machine standardization, length—created through an extrusion process—is less constrained.

This allowed for the fabrication of approximately 18-by-10-foot panels, each rotated to fit the dimensions of 660 Fifth Avenue's perimeter structure, offering unobstructed views between columns. Lauren Schmidt, principal at KPF, told *AN*, "In the end the fabricators came back to us and said it's actually easier [to manufacture large panels] because there's less handling, less cuts, and less waste."

Above left: 660 Fifth has high visibility on a famous stretch of Fifth Avenue.

Above right: During construction, old and new existed simultaneously.

Right: Detail showing the oversize IGUs.





Axiom Perimeter Trim

Axiom Flush Transition

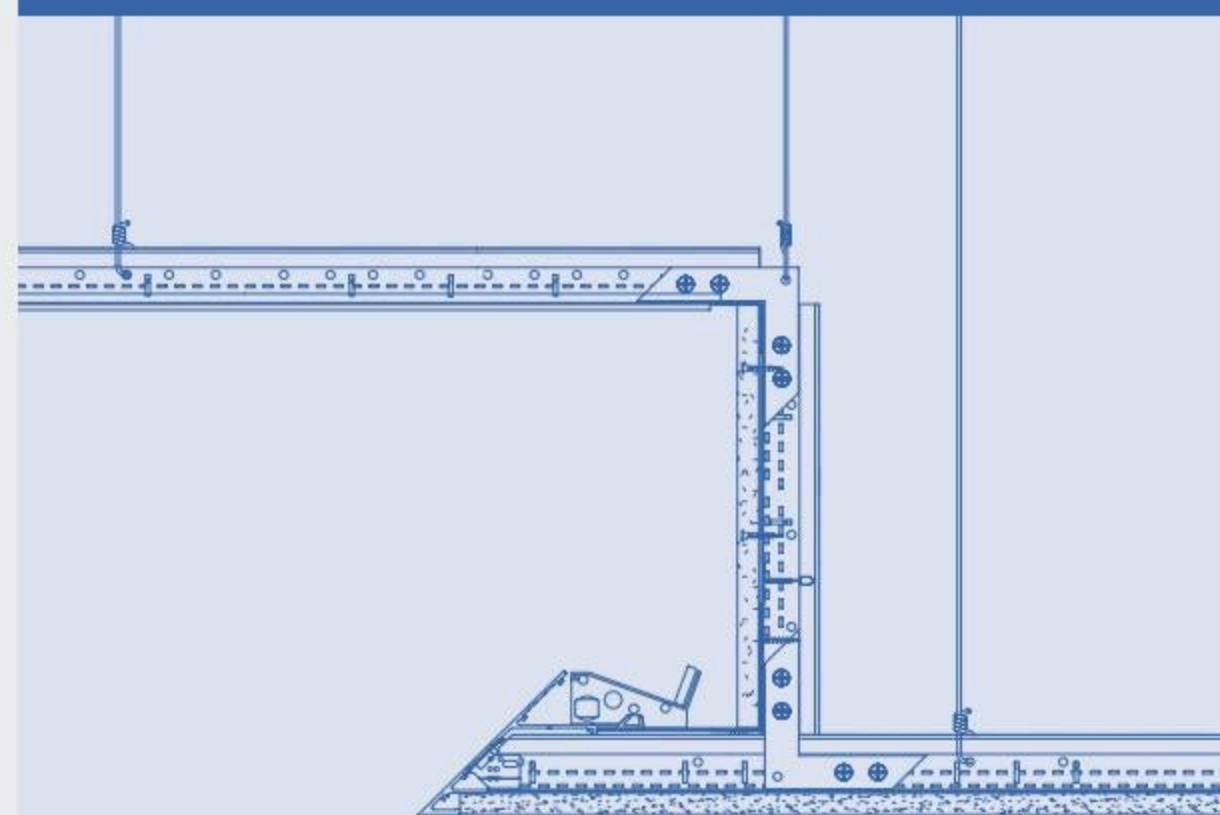
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Axiom Indirect Light Cove

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RAIMUND KOCH/COURTESY KPF

Fifth Avenue Reno, *continued*

The building's lobby was also subject to significant interventions. Originally facing 5th Avenue, 666's entrance was transformed into retail space in 2000: What was initially a grand, T-shaped lobby became a mere corridor between 52nd and 53rd streets, with a connection to the 5th Avenue/53rd Street subway entrance. But because of the amount of traffic as well as security concerns, the subway access was closed, leaving one remaining entrance on 52nd Street.

In the process, Brookfield chose to remove Isamu Noguchi's *Landscape of Clouds*. The installation, consisting of a waterfall and a ceiling ornament of stainless-steel fins, was dismantled and donated to the artist's eponymous museum in Long Island City.

Though it was never one of Manhattan's most significant towers, 660 Fifth Avenue has now been thoroughly improved for 21st-century occupants. This has meant the removal of unsavory bits of its history, namely The Grand Havana Room, a private cigar club frequented by Rudy Giuliani and Paul Manafort, but also one of its gems—tenants will surely miss Noguchi's *Landscape of Clouds*. **TS**

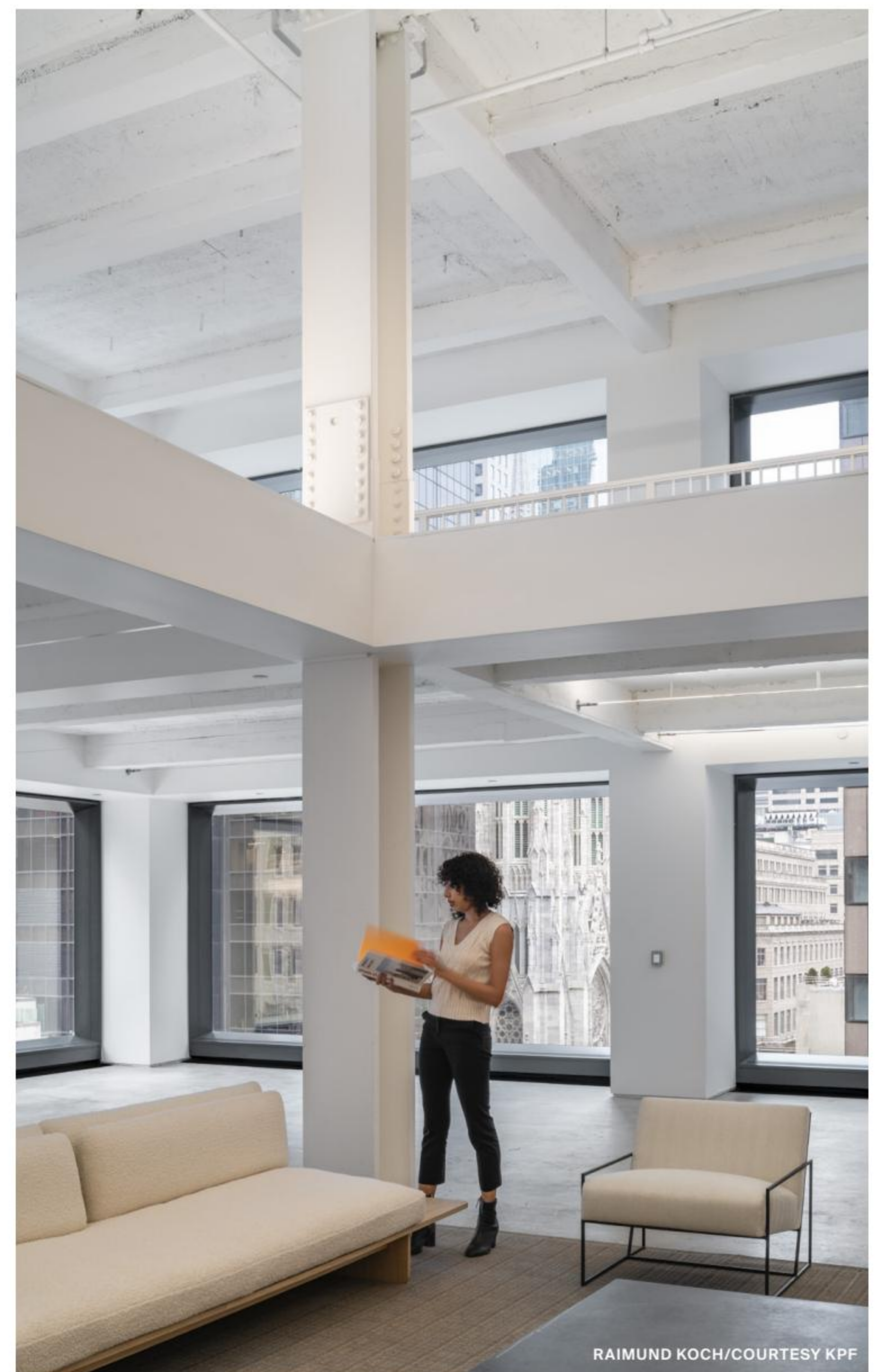
Above: The corner retail is differentiated with a white framing device below the new facade.

Left: Class A amenities and security blend seamlessly with neutral interior palettes.

Right: Double-height spaces were carved out in places, improving upon the low ceilings of the original building.



RAIMUND KOCH/COURTESY KPF



RAIMUND KOCH/COURTESY KPF



GKD Metal Fabrics Connecting the Silver Line

The Silver Line Rail Extension brings a new phase of transit to the Washington, D.C. region by providing new connections to Washington Dulles International Airport. This generational infrastructure investment in Northern Virginia, spearheaded by the Washington Metropolitan Area Transit Authority, called for six new stations. To make new rail connections pedestrian-friendly, architects called for a combination of pedestrian bridges and tunnels to connect stations to parking and terminal points. As a full-service metal fabric system supplier with engineering, design, fabrication and installation under one roof, GKD was uniquely positioned to design attachment hardware and meet the project's lead time.

With its expansive weaving looms and turnkey engineering services, GKD manufactured oversized metal mesh framed panels and the engineered hardware required to attach them. The panels reduced HVAC load, provided fall protection, and enhanced visual interest. More than 63,000 square feet of framed metal mesh panels were needed to clad bridge spans, stair infill, turnstiles, and curtainwall.

"When a design calls for large custom panels, we have the advantage of tapping into the GKD arsenal of state-of-the-art looms, which are the largest in the industry," said Shawn Crismond, regional sales manager at GKD-USA.

GKD's engineering team worked directly with project architects. Wind loads, snow loads, and live loads were engineered into the attachments that tension each mesh panel within the bridge sections. To add visual interest, the design team specified two weaves of rigid stainless-steel mesh, Ellipse 2 and Ellipse 14. Both weaves feature warp wires spaced to emphasize a horizontal pattern across all 63,327 square feet of GKD metal mesh.

The Silver Line Rail Extension opened to the public in November 2022 as one of the largest capital construction projects in the U.S. It includes 11.4 miles of new track, six new Metrorail stations, and a 90-acre railyard with storage capacity for 168 railcars and maintenance facilities to service the trains. GKD metal fabric serves as a unifying and functional design element as passengers head to home, work, and points beyond.



The Architecture of Metal Fabrics

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T 800 453 8616
metalfabrics@gkd-group.com
www.gkdmetalfabrics.com

Biomaterials & Recycled Content

Whether recycled or sustainably harvested, these materials try to reduce the amount of waste in the building process. RCO



Old Souls Reclaimed Wood | Delta Millworks
deltamillworks.com

Old Souls Reclaimed Wood is old-growth wood recovered from structures like barns, horse corrals, and fencing. Shown here is Terlingua wood cladding applied to the Timberlakes Residence in Utah by ADDvirtue.



Ambara | Nova USA Wood Products
novausawood.com

This lightweight, low-density thermally modified West African tropical hardwood for siding, ceilings, trim, beams, and pergolas has a consistent caramel color throughout the wood.



Polygood Material | The Good Plastic Company
polygood.com

This range of 100-percent-recycled and recyclable plastic panels offers designers a 100 percent circular alternative to conventional surfacing materials. Its life cycle assessment enables projects to score points in green building and construction rating systems such as BREEAM, LEED, and WELL.



Thermowood Ayous | Novawood North America
thermowood.com

Harvested from young-growth trees, Thermowood Ayous blends premium wood aesthetics with Novawood's cutting-edge thermal-modification technology to ensure a drier product and precise control over the color of the lumber for ceilings, walls, and rainscreens.



LDCwood ThermoWood | BPWood
ldcwood.com

LDCwood is a Belgian producer of ThermoWood thermally modified timber with a range of wood types, patterns, finishes, and fire-retarded treatments. All LDCwood species are available certified with a transparent chain of custody.

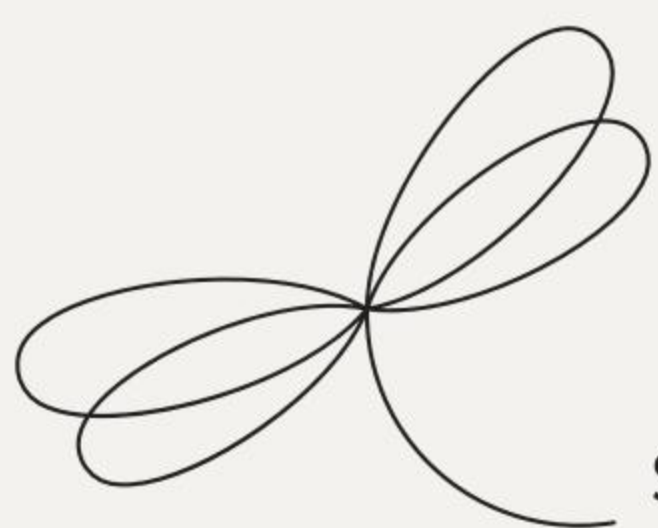
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**INTERIORS
FROM SPAIN**

Ceramics

These terra-cotta and porcelain stoneware exterior cladding options provide aesthetic sparkle as well as practical solutions. RCO



Mottled Glaze | Shildan
shildan.com/longotoncolorsandglazes

Shildan's Mottled Glaze imparts a subtle depth and organic texture, creating movement and light across the terra-cotta surface. These organic and visually unique patterns evolve depending on the angle, lighting, and panel shape.



Xlight Facades | Porcelanosa
porcelanosa.com/us

This large-format porcelain recreates the look of cement, marble, stone, wood, and metal and is available in extra-slim sizes.



Custom Terra-Cotta Panels | Boston Valley Terracotta
bostonvalley.com

These custom terra-cotta panels feature a custom glaze for the new 60 Curzon residential building in Mayfair, London, completed in 2023 by PLP Architecture.



Materia Slabs | ABK Group
abkgroup.it

Materia provides large-format slabs for ventilated rainscreen facades and exterior cladding. The high-performance porcelain stoneware is nonabsorbent, resistant to frost and UV rays, and produced with top-quality raw materials.



NeXclad | Ludowici
ludowici.com

This small-format terra-cotta wall cladding is manufactured in Ohio from locally sourced raw materials and can be easily installed directly to structural wall sheathing or over a rainscreen framing system with two mechanical fasteners.

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64 Products

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Ceramics, *continued*



Cosmo | Cercom
cercomceramiche.it

Cercom took inspiration from the lunar surface for this collection of stone-effect porcelain floor and wall tiles in four lunar shades and four sizes up to 48" x 48".



Porcelain Tile Panels | Florim
usa.florim.com

The design team at Habitat to Art selected 63-by-126-inch porcelain tile panels from Florim for the exterior facade of this apartment complex in Brooklyn. Connected by a sturdy metal structure that anchors directly onto the building, the porcelain panels create a ventilation chamber that causes a cooling effect during the summer and allows room for insulation in winter.



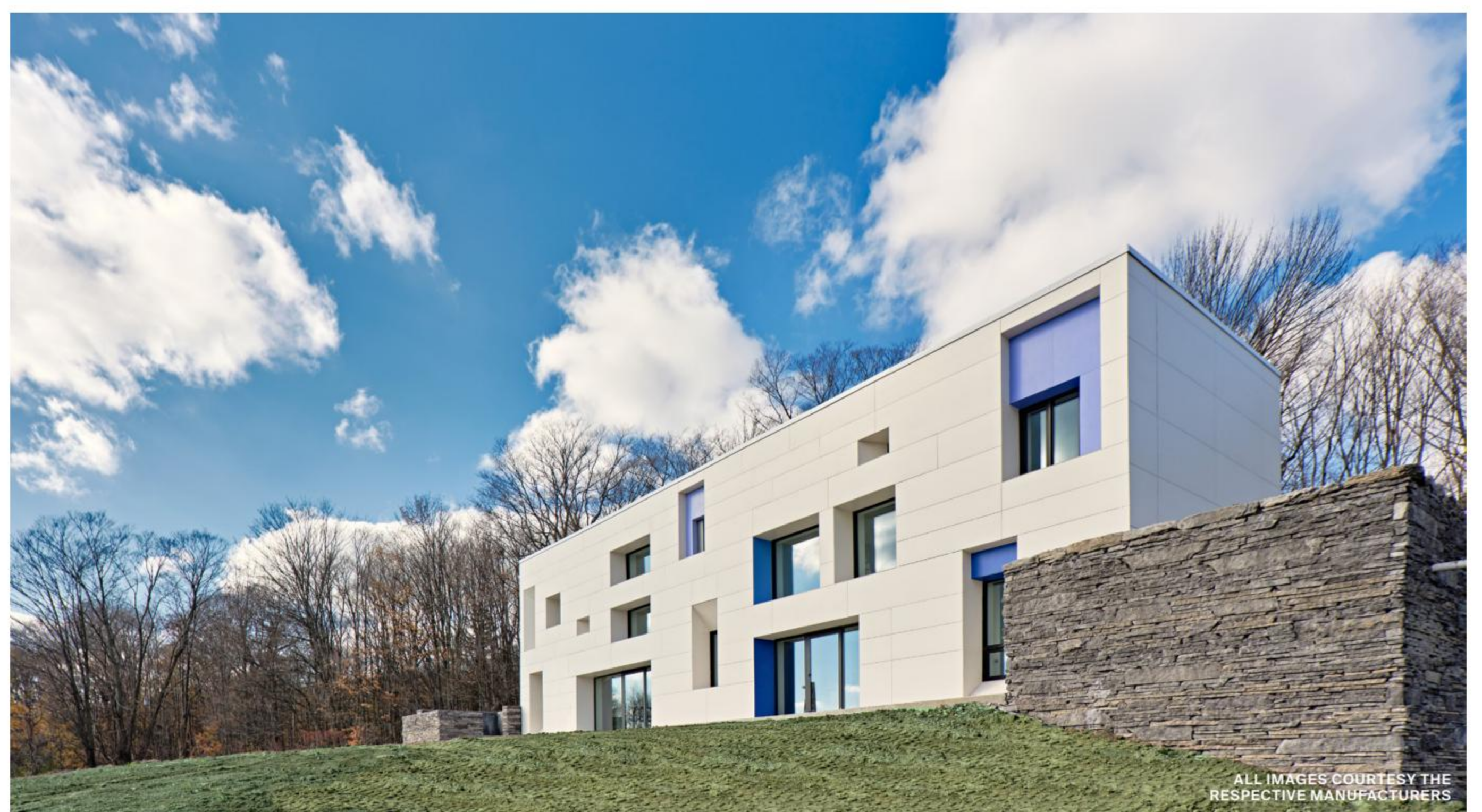
Cannè | Ceramica Rodine
ceramicarondine.it

The Cannè porcelain collection was inspired by the look of grooved wood planks. They are available in five colors and in a single 24" x 48" format.



Lombarda | Ergon
emilgroup.com

Lombarda is a rendition of Ceppo di Gré stone in porcelain stoneware characterized by a pebble-effect available in six sizes and seven warm and cool-toned shades to create an interpretation of traditional terrazzo.



Neve Collection | Laminam
laminam.com

Designed by Kearns Mancini Architects Inc. using the latest passive house practices, this guesthouse used Neve porcelain tile in a 3.5mm thickness to allow for the design of a ventilated rainscreen wall while avoiding any thermal bridging.

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New Life for IGUs

Re-Assembly works to recycle a notoriously wasteful facade component.

Daniel Marshall founded Re-Assembly in 2022 to investigate the potential to recycle architectural glass. Questioning the premise that its end of life should be waste or downcycling, he has combined computational matching with professional experience as a facade engineer to work on the development of a shingle system made entirely of recycled architectural glass. Marshall spoke with Chris Walton about the state of facade deinstallation, his current work at Re-Assembly, and the potentials of recycling at a scale that meets architecture's massive amount of material consumption.



COURTESY RE-ASSEMBLY

Chris Walton: How did you become interested in glass recycling?

Daniel Marshall: Professionally, I've been working with glass as a facade engineer for the past four years. Prior to this, my thesis and academic research focused on architectural glass reuse and reducing the embodied carbon of the construction sector. I calculated that if New York arranged all the shattered glass from demolished buildings since 1955, the city could make a glass canopy approximately 6km square. Through Re-Assembly, I'm trying to leverage my professional experience toward the reuse agenda.

What is the state of glass recycling in practice as it stands now?

It's nonexistent. No U.S.-based float glass plant uses any postconsumer recycled glass in their production lines. Instead, most postconsumer float glass is downcycled into glass bottles. Why can't the glass industry fix this? The problem is nickel sulfide inclusions—impurities in the glass, which grow and can crack tempered glass. The fear of impurities means the U.S. glass industry refuses to accept any postconsumer recycled content.

How have you explored alternative life cycles for glass used in architectural work?

Insulated-glazing shops in the U.K. and U.S. typically have a storage rack of mis-measured units which are costly for them to dispose of. Re-Assembly gathers these brand-new, warranted glazing units into a library. Once we have this inventory of mis-measured units, we match them using some computational tools. We take the design intent and the library of material and put those two together, tweaking the design in response.

The stage you're at now is taking offcuts from manufacturers that are not being used or sold, but the hope ultimately is for a demolition or renovation process where IGUs are taken off a building, and put into your system?

Yes. There are ways you can authenticate IGUs. One of the pathways I can see happening over the next five to ten years is creating standards for verifying material that is functional. Number one, check that argon has not leaked out. Number two, check there's no microcracking. Contemporary glass procurement relies on standards and tests to assure quality. I see no reason why reused glass with the right certifications could not be acceptable to architects and their clients.

You're using a Grasshopper script that reads a given elevation and tries to match the library to it as best as possible?

Exactly. If you have a fixed rough opening and a limited library, you may not be able to build that wall perfectly. Working out how big a library must be is a question I've been working on recently: Currently, I think you need about 100 pieces of glass with some variety. The script is pretty simple: It's just adding up glass widths. Part of this simplicity is thanks to the shingle idea. You have freedom on one axis to overlap, so you don't have to absolutely nail all your dimensions.

In contrast to the pristinely detailed curtain wall, which you will never make perfect.

Yes. My current mock-ups are rather improvised and experimental! I've been running air and water tests where you suck air through the facade—putting a vacuum on the interior side. Then you spray the glass on the front and see if any water gets through your facade system. I'm also running structural deflection tests. When you shingle something, you've got some pretty weird deflections and can end up pinching the glass. You don't want to get into a situation where it deflects and breaks the glass. These tests all represent the typical performance criteria for U.S. curtain walls; the system must comply with all those standard requirements.

Left: An example of a facade detail mock-up made with multiple recycled IGUs.

Below: The goal of Re-Assembly is to build entire buildings from a recycled IGU library.



COURTESY RE-ASSEMBLY



Bird-friendly Glass

Pilkington **AviSafe™**

Pilkington **AviSafe™** creates a more bird-friendly environment through a combination of our glass coating innovation with an understanding of bird vision. Pilkington **AviSafe™** has been tested by the American Bird Conservancy (ABC) and provides a product leading threat factor of 12 when the coating is glazed on the exterior surface.

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New Life for IGUs, *continued*

Many cities have stringent regulations on operational energy standards. How does your system perform operationally?

I've been doing a lot of thermal analysis because of what you're saying. Glass is really conductive, so you need thermal breaks between the glass on the interior and the glass on the exterior. The overlapping shingle becomes four layers of glass. This quad cavity keeps the performance comparable to off-the-shelf systems.

When you're removing an IGU from a building, is the rest of the system going to last as long as the glass itself? Is glass the only concern in terms of verification?

You're raising a good question. If you're taking apart a whole building, there are a bunch of other things that come with the glass: aluminum window frames, mullions, shade boxes, etc. For me, it feels more realistic to take each element apart, authenticate, and then recombine them into a new assembly designed for a specific project. But perhaps the option where we just remove an assembly from one location and use it in another will prove more practical.

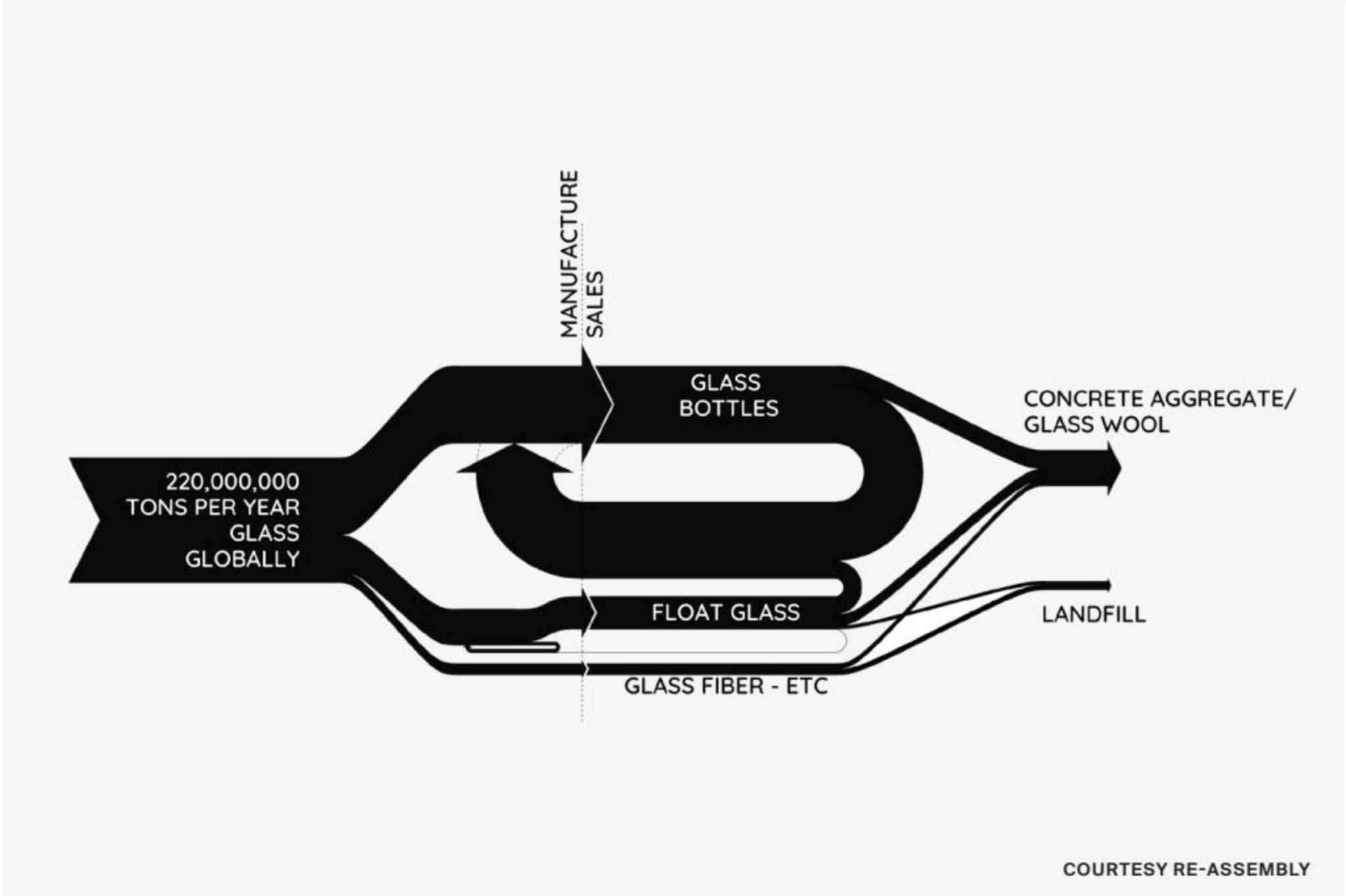
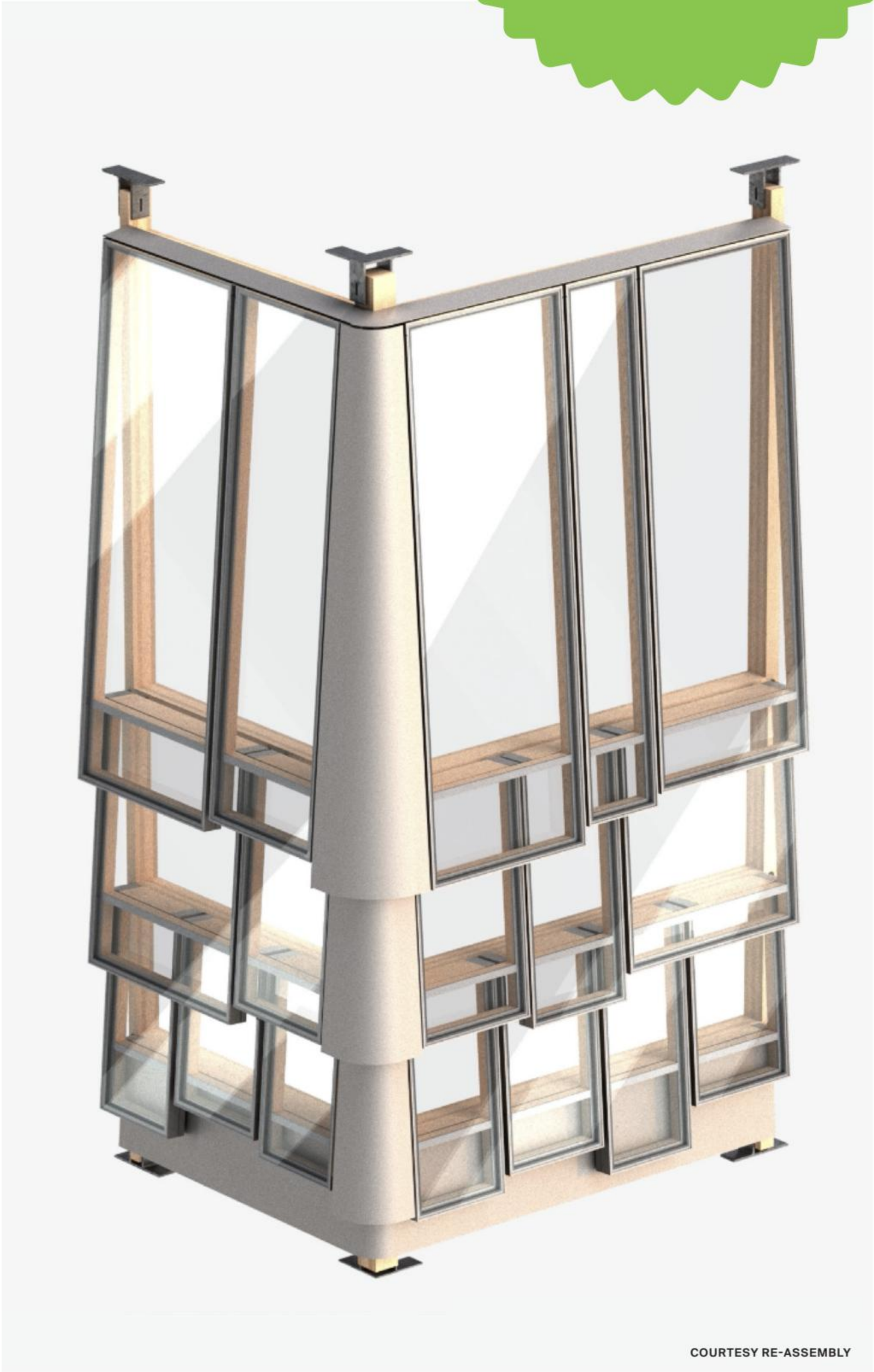
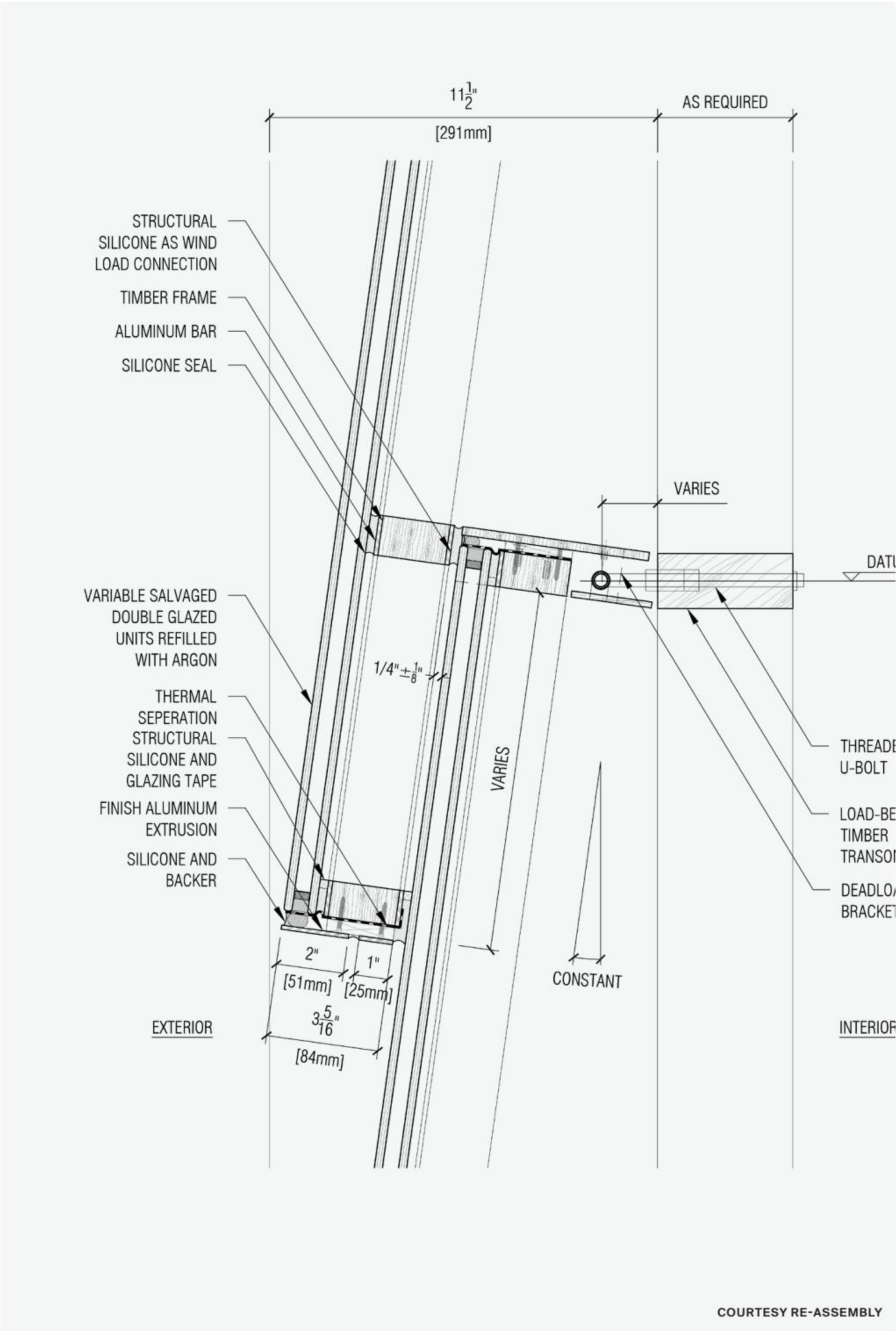
If you had to replace an IGU, does that allow you more flexibility to go into the library and find a piece that matches, or is that more difficult because you have to find the same glass product to put back into the system?

On a traditional building site, if a piece of glass breaks, you might be able to take one from your attic stock and keep going. In the specifics of this system, you can rerun the algorithms again and reallocate the pieces, or just buy a replacement. Rerunning the matching becomes difficult from a permitting perspective. Architectural drawings that you give to the city might change, and your energy filing elevations might vary slightly. Perhaps it is possible to note "placeholder elevation drawing for the Re-Assembly recycled facade system."

Where do you want to take this?

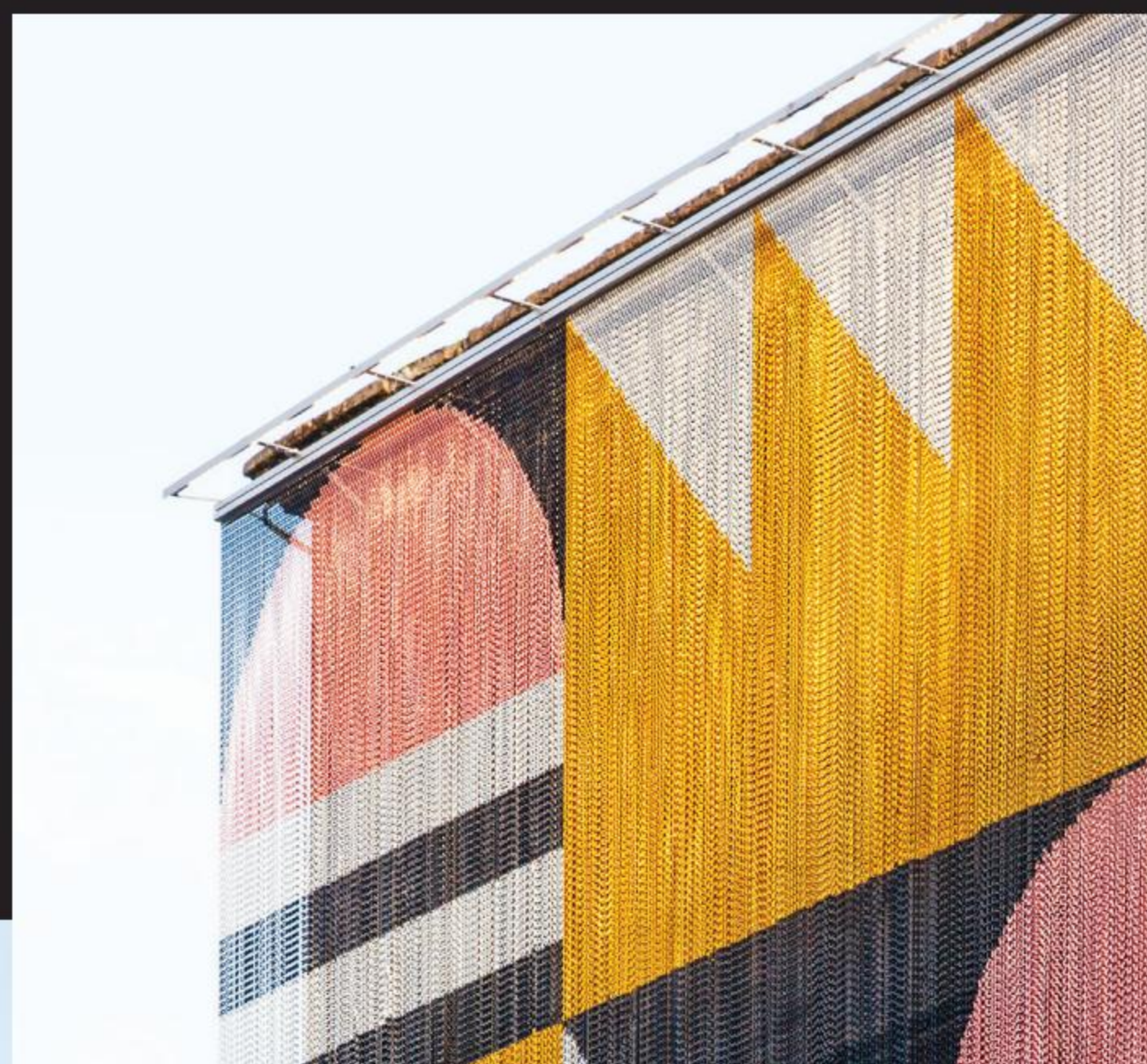
I plan to do more final testing and mock-ups. The main intent is to get architects to talk about glass, its embodied carbon, and the fact that we can't recycle architectural glass. I'd like to try to use this system in a real-world project to show it can work, offering a precedent that can stimulate architects' imaginations about resource responsibility.

Chris Walton is a master of architecture candidate at Harvard GSD and a former assistant editor at AN.



Clockwise from top: A rendering of a corner facade detail made of recycled IGUs; a diagram representing waste redirected away from landfill; a detail drawing of the facade attachment system under development.

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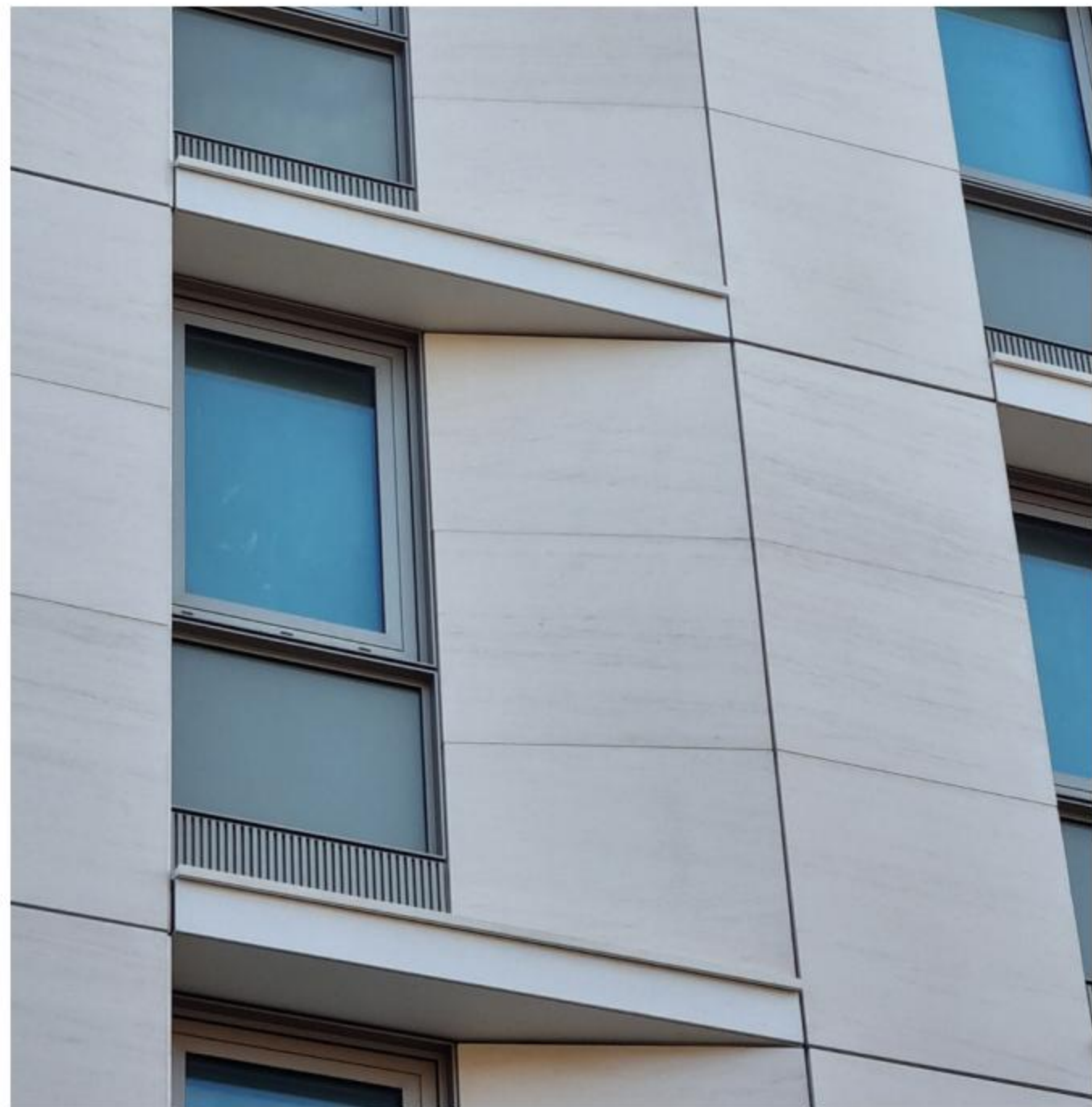
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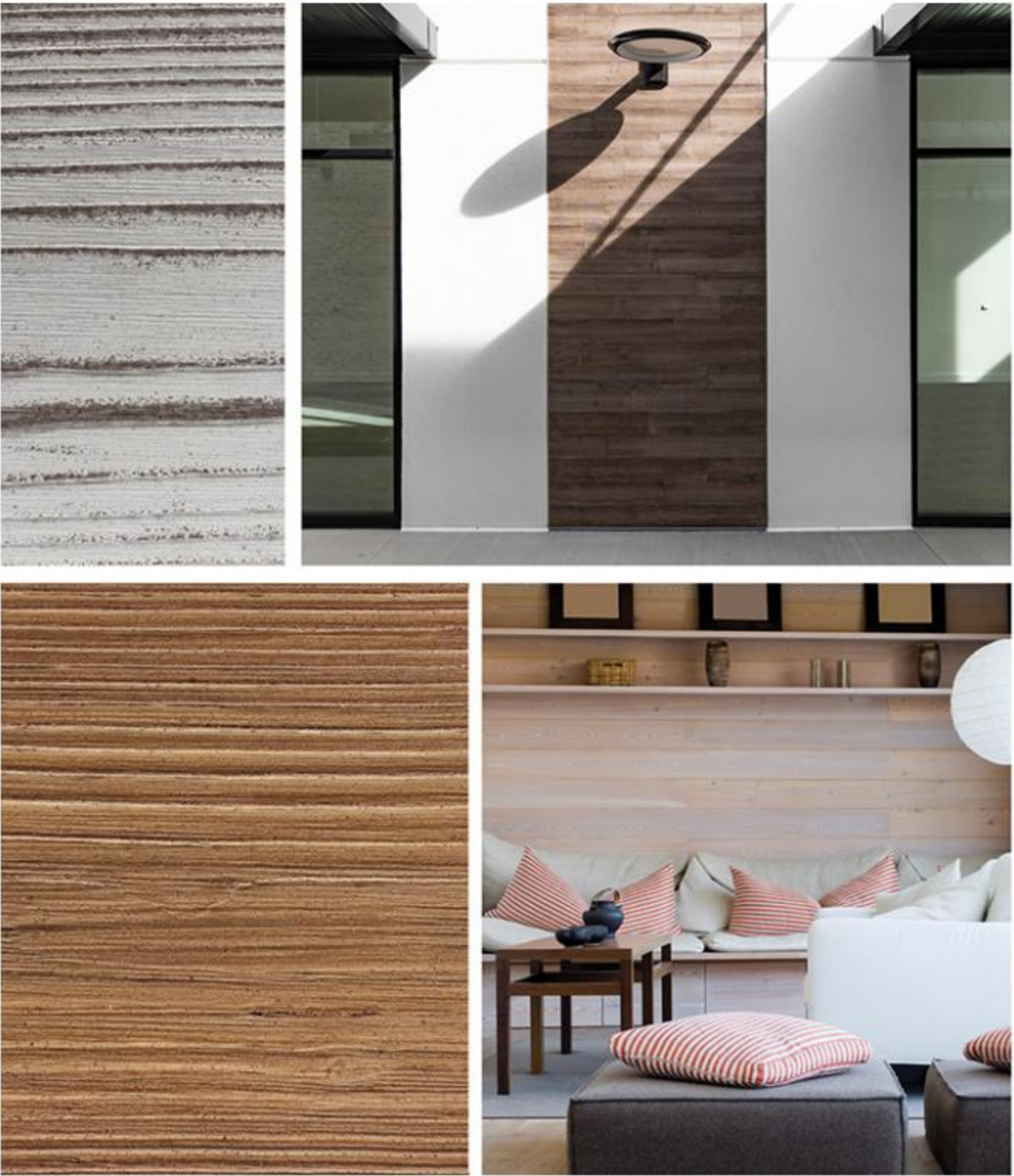
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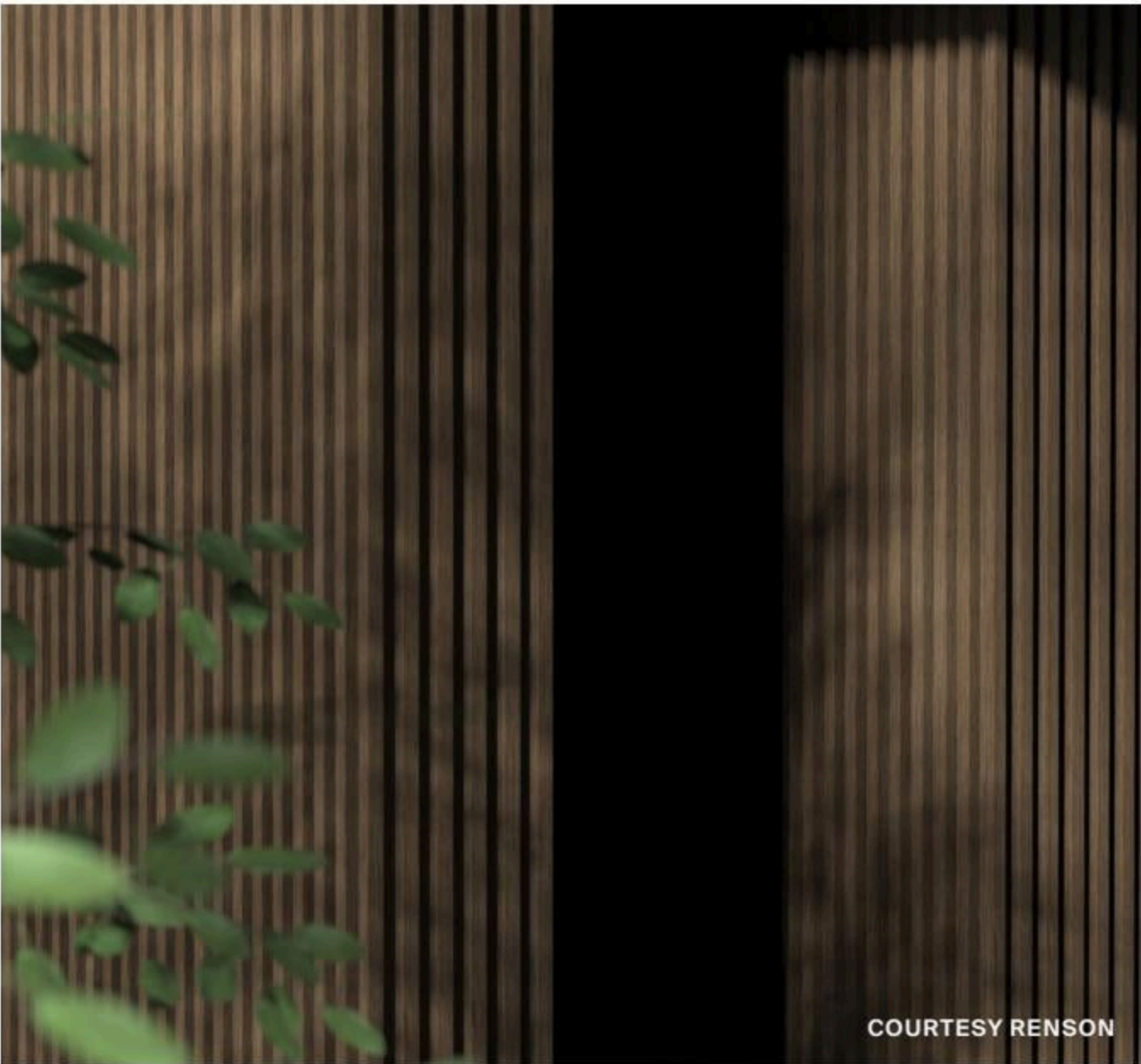
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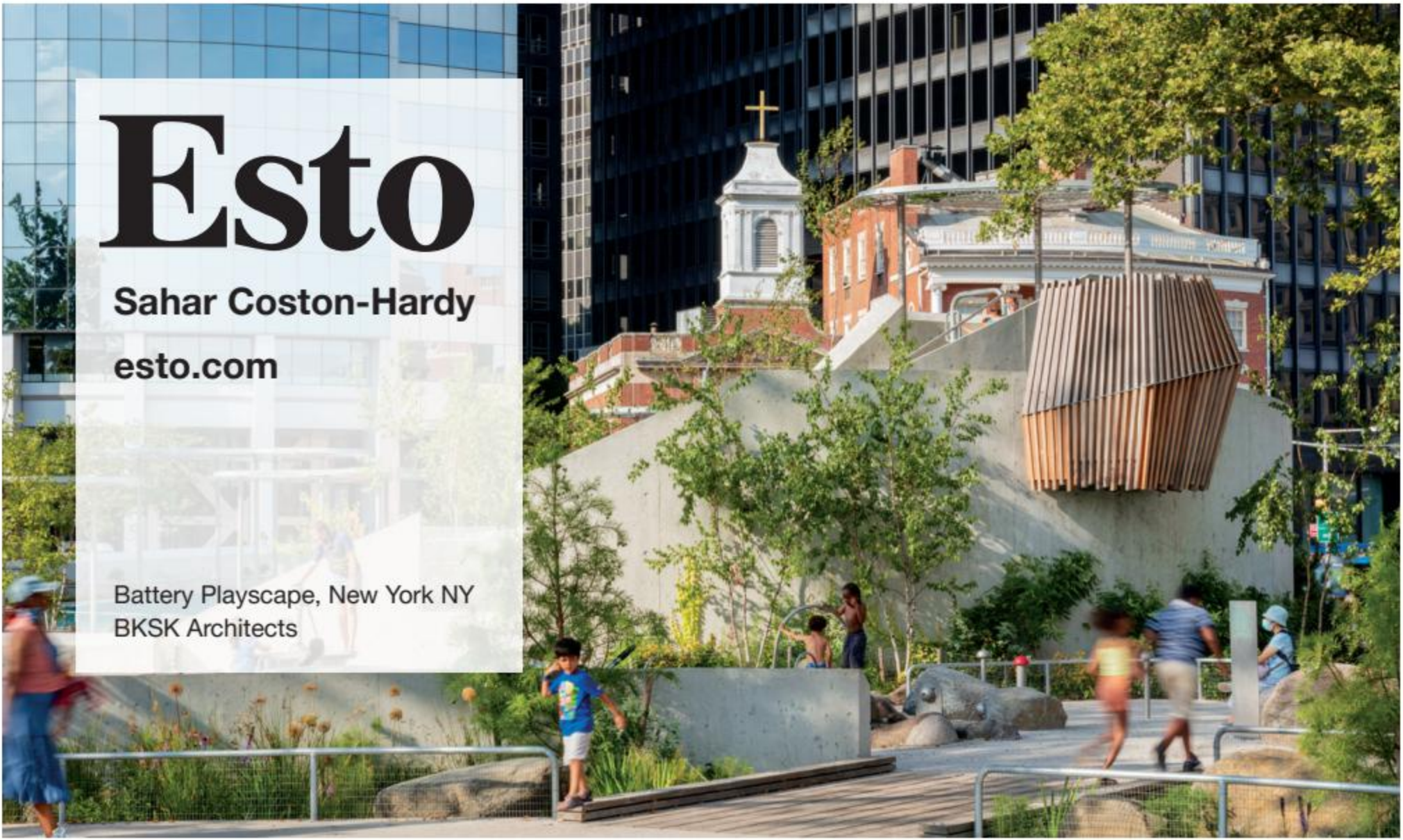
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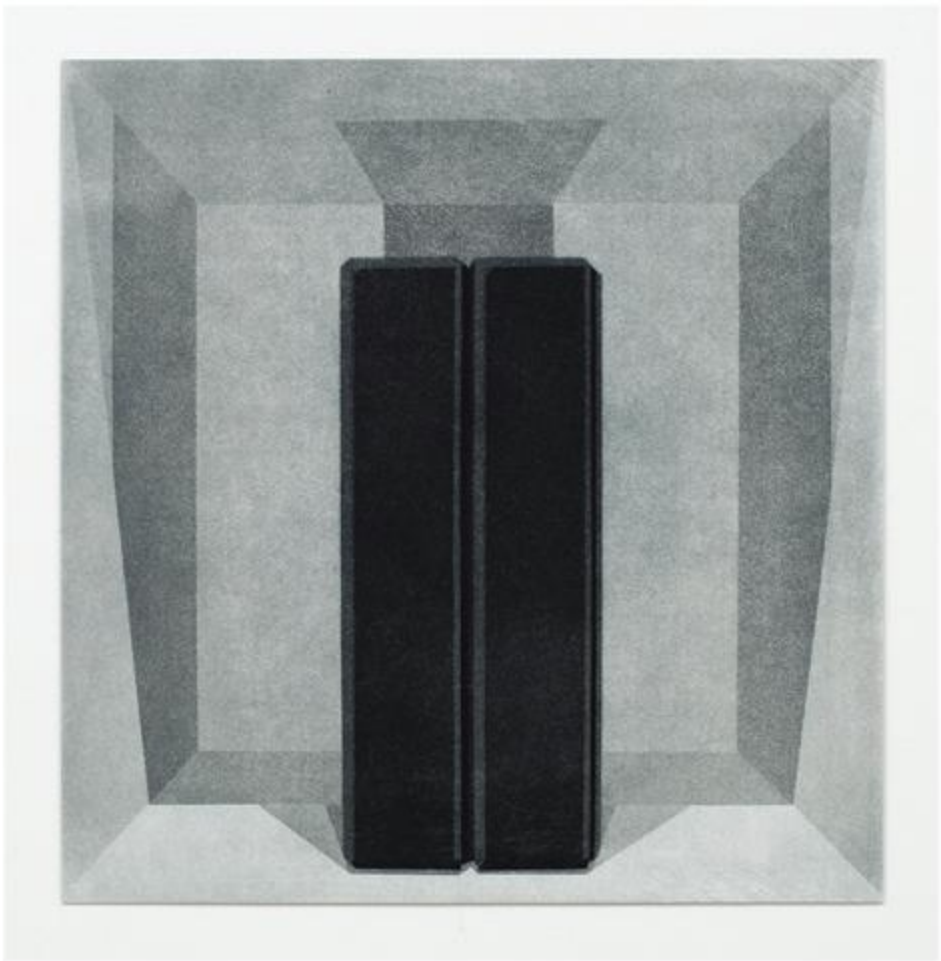
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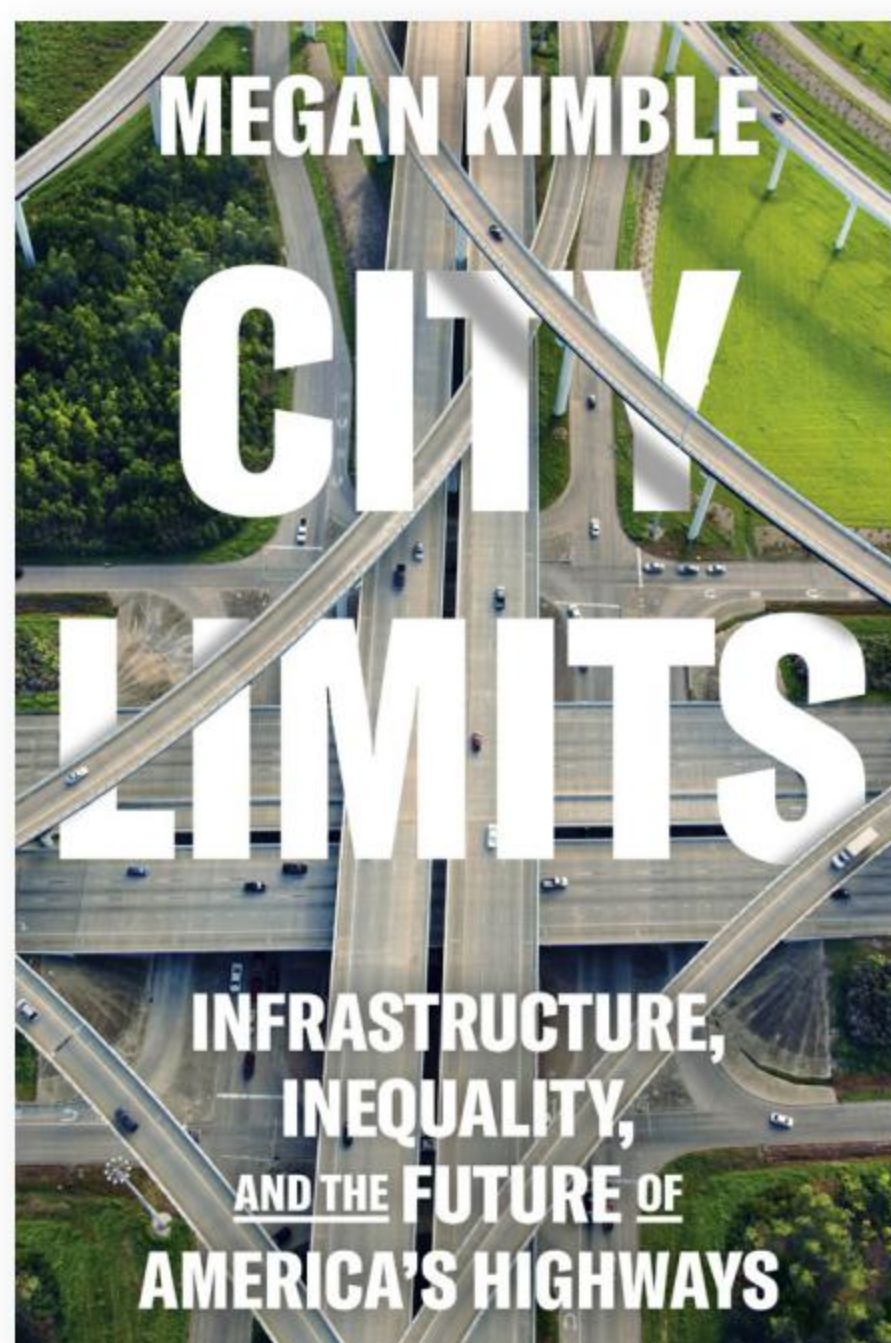


80 Review

City Limits

Infrastructure, Inequality, and The Future of America's Highways

Megan Kimble
Penguin Random House
\$30



It was pouring rain the day I moved to Chicago, finishing a grueling 17-hour drive to become a new resident of a sprawling metropolis. Entering the city limits from I-90, a freeway that is somehow packed with traffic while also serving as a de facto race course for impatient drivers, I was greeted by massive digital billboards that I would later learn broadcast the Illinois Department of Transportation's (IDOT) public service announcements. These billboards sometimes cheekily read, "No texting, no speeding, no ketchup" (a Chicago joke) or, during Halloween season, "Speed demon, I cast thee out; drive the limit." But on this day, the billboard was programmed to tell drivers precisely how many car wrecks had occurred in the county that year.

I don't remember the precise count—certainly in the thousands—but I do recall being astonished. Not by the number, but that the department responsible for freeways would so candidly demonstrate how deadly it is to use the product it builds. Since that rainy day in 2012, I-90 and myriad other freeways running through the city have continued to expand—adding a few lanes here, a flyover there, and general confusion: Why do we continue expanding infrastructure that increases the likelihood of injury or death, especially when we know it won't decrease commute times?

Megan Kimble tackles this and similar tensions in her new book, *City Limits: Infrastructure, Inequality, and the Future of America's Highways*. In its 400-ish pages, the book is a fiery critique of urban interstate developments. Something so ubiquitous and widely accepted as freeways requires a nuanced exploration of the infrastructure's counterintuitiveness. For anyone whose interests or political views might make them believe "freeways are bad," much of those supporting arguments could be condensed into an email: Freeways are dangerous for drivers; they've divided our cities in ways that reinforce segregation; they spew toxic materials into the air we breathe and produce life-altering noise. But instead of relitigating such realities, Kimble brings together tender, first-person accounts of community organizing, discovery, and tragedy interspersed with rich research into how our 85-mile-per-hour world came to be.

City Limits focuses primarily on three Texas cities and their traffic behemoths:

Houston's I-45, Austin's I-35, and Dallas's I-345. Each urban freeway has its challenges to be addressed by the Texas Department of Transportation (TxDOT). According to TxDOT, Houston's population growth and traffic concerns—that I-45 "was the most dangerous stretch of highway in the state"—required an enormous and offensive 50 percent expansion. Austin's I-35 also needed to expand to a 20-lane road, including frontage roads, that would displace more than 100 homes and businesses to manage daily traffic congestion. I-345, which connects South Dallas with northern neighborhoods, was one of the only freeways without a planned rebuild noted in the city's 2011 master plan. While Austin and Houston activists sought alternative solutions to expansion, activists in Dallas hoped to have the stretch removed and turned into a boulevard.

The book's braided structure dips in and out of each locale. Kimble introduces readers to "freeway fighters" over three sections, one in each city, by recounting their personal histories. With this approach readers don't learn about, say, the history of Dallas's I-345 through a Wikipedia-esque recounting of historical events, but instead through the lens of a longtime resident's relationship to the city itself, interwoven with relevant past events. In Chapter 6, titled "Expand," the author attends a community meeting led by the Houston-Galveston area's transportation policy council discussing TxDOT's I-45 expansion plan.

Here, we meet two organizers—Susan Graham, a retired nurse, and Molly Cook, the daughter of an oil and natural gas executive—at the beginning of their fight against the I-45 project. While Graham and Cook will reappear several times throughout the book, Chapter 6 tells Cook's story: Her parents lived in the Houston suburbs, moving increasingly farther away from the city center as freeways made suburban life more expansive, eventually landing in a planned community called the Woodlands. Though it's an idyllic suburb, "half the community's workers still commuted daily to jobs in Houston," Kimble wrote, citing *The Houston Post*. When she moved to Baltimore for college, Cook discovered that "car dominance was a choice." Through Cook's story, we begin to build compassion for her desire to reconcile her father's oil fortune through antifreeway organizing, while also gaining a spatial history of Houston's

I-45—illustrative of both an unrighteous urgency to expand freeways and how our personal histories tie into infrastructure itself.

Among the dozens of activists we meet in Kimble's book, we get to know O'Nari Burleson, a 76-year-old resident of Houston's majority-Black historic Fifth Ward neighborhood, which was ripped apart by a freeway in the 1960s; Burleson's childhood home was demolished as part of the freeway's construction. We encounter Patrick Kennedy, a Dallas transplant advocating to remove I-345 entirely, and later, Adam Greenfield in Austin, who was inspired by Kennedy's strategy. Modesti Cooper, a former military contractor affordably renovating distressed Houston homes, was living in limbo as her own home was in the demolition zone for the I-45 expansion. Diana Flores had founded and operated Escuelita Alma, a beloved early childhood education school in Austin, for nearly two decades. Her school was threatened by the freeway expansion, thrusting her into the fight to save it.

I understand why Kimble structured the book this way, darting across Texas's major metropolitan areas to produce an ethnographic, narrative-driven account of histories and conflicts, yet these personal stories become blurry. I devoured this book in two

sittings, but even so, I often lost track of city woes, the backstory of each organizer, who their allies were, lawsuits filed, and the particular arguments TxDOT lobbied against their causes. It becomes tedious reading, but such a strategy speaks to the multilayered reality of living under urban freeway oppression—segregation, infrastructure failures under climate change, the imminent destruction of crucial housing during national and local shortages, and inadequate and unjust funding for public transit. Each story touches on an interconnected constellation of systemic injustices pressed upon these individuals and their neighbors.

If one idea is clear throughout the book, it's that TxDOT is a villain whose power stems from broader funding, investigatory, and approval processes. Kimble addresses the history of the interstate system in chapter 3, beginning with early-20th-century automobile marketing efforts, led by Shell Oil, that induced consumer demand, prompting new infrastructure construction that led to President Dwight D. Eisenhower's demand for a national highway. It was deemed a national defense effort during Cold War anxieties—freeways were made to literally bring people out of cities, first as a nuclear evacuation method and later as a means to expand a city's economic progress.



LEONID FURMANSKY



LEONID FURMANSKY

The author later elaborates on the Highway Trust Fund, created to finance highway projects through gas taxes. The fund not only set forth the notorious 80/20 ratio—80 percent of fund dollars go toward roads, 20 percent is allocated for public transport—but also ensures that its structure is “sacrosanct and untouchable...billions of dollars flowed directly to states to do with what they pleased,” writes Kimble. “Until and unless the federal government put conditions on that funding, a state like Texas could do whatever it wanted, so long as it didn’t violate civil rights and environmental law.” And, as Kimble later elaborates, TxDOT is allowed to conduct these environmental reviews internally due to an overburdened federal system. Many of the organizers turned to civil rights lawsuits, alleging that these projects use federal dollars to further segregate their city.

But if DOTs are villains, they are also the most banal evil: Simply put, states must spend the dollars they are given, and as Kimble notes, they are “agnostic to what happens to the highway—whether it’s torn down or expanded, elevated or buried....Everything happens in passive voice: Agencies are engaged, stakeholders are consulted. Elected officials will be ‘visited with,’ while public feedback ‘is considered.’” Kimble seems to take special

care in describing bureaucratic motivations as hollow and untethered to lived reality.

While TxDOT collects such public feedback, the book’s community-organizing ethnography reveals it is fraught. Kimble follows these individuals on their door-knocking routes, and it becomes apparent that many residents are unaware of forthcoming freeway projects until postcards from TxDOT’s community outreach companies provide “moving assistance.” There is confusion when lawsuits pause demolitions—nobody knows if or when they will be forced to relocate or if they will receive housing vouchers or fair compensation. And regardless of these pauses, TxDOT will begin demolition elsewhere, almost as a way to ensure their freeway expansion moves forward. Moving personal testimonies are provided at obligatory community meetings. Protests mount, somewhat impotently and tragically, while bulldozers roll in or men in suits place a shovel in the ground. Kimble writes somberly of these events; the protesters’ chants are no match for the roar of the freeway, and the reader feels the frustration of not being heard. It’s precisely where Kimble’s chops and capacity for documentation shine: These are moments for all of us who have stood in front of Goliath, not just the 60 protesters standing beside an overpass.

There are, however, some success stories shared in the book. Kimble writes extensively in Chapter 16 about Rochester during New York’s 2013 Inner Loop freeway removal, applying the same interviewing and exposition used throughout. While the project is conventionally cited as a successful “stitching together” of a community divided by a freeway, Kimble also speaks with residents critical of the dense, multifamily developments infilling the former freeway footprint. Some feel their needs were not properly attended to. In one community meeting addressing plans for the Inner City Loop North removal, some expressed a desire for single-family homes and a business district.

The author includes these conflicts not to harshly critique residents who shrug away multifamily developments or revenue-driving placemaking strategies as many a Twitter urbanist might; rather, the Rochester project serves as a reminder that freeways have eroded our sense of collective agency, a wound so deep that even the most diligent organizing or mightiest of successes cannot heal or repair it. It’s why President Biden’s Reconnecting Communities plan might feel promising but more likely will yield urban freeway projects akin to lipstick on a pig.

Back to those Chicago billboards: Staring at IDOT’s safety reminders from an overpass spanning a stretch of I-94 currently undergoing a massive facelift, I realize that the question isn’t why we continue to expand these miles-long death traps; we no longer need to ask if two or ten new lanes will speed up commutes. We know they won’t. Kimble’s *City Limits* exposes the limited rationale and existential meaninglessness of those guiding principles that make freeways inevitable. What’s essential are the lives of those thrust into the futile work of stopping a bureaucratic Mack truck with no brakes. Facing the monster rushing toward you at 85 miles per hour, fueled by generations-old stalwart policy, what matters most are the people holding the line with you.

Anjolie Rao is a journalist and critic covering the built environment.

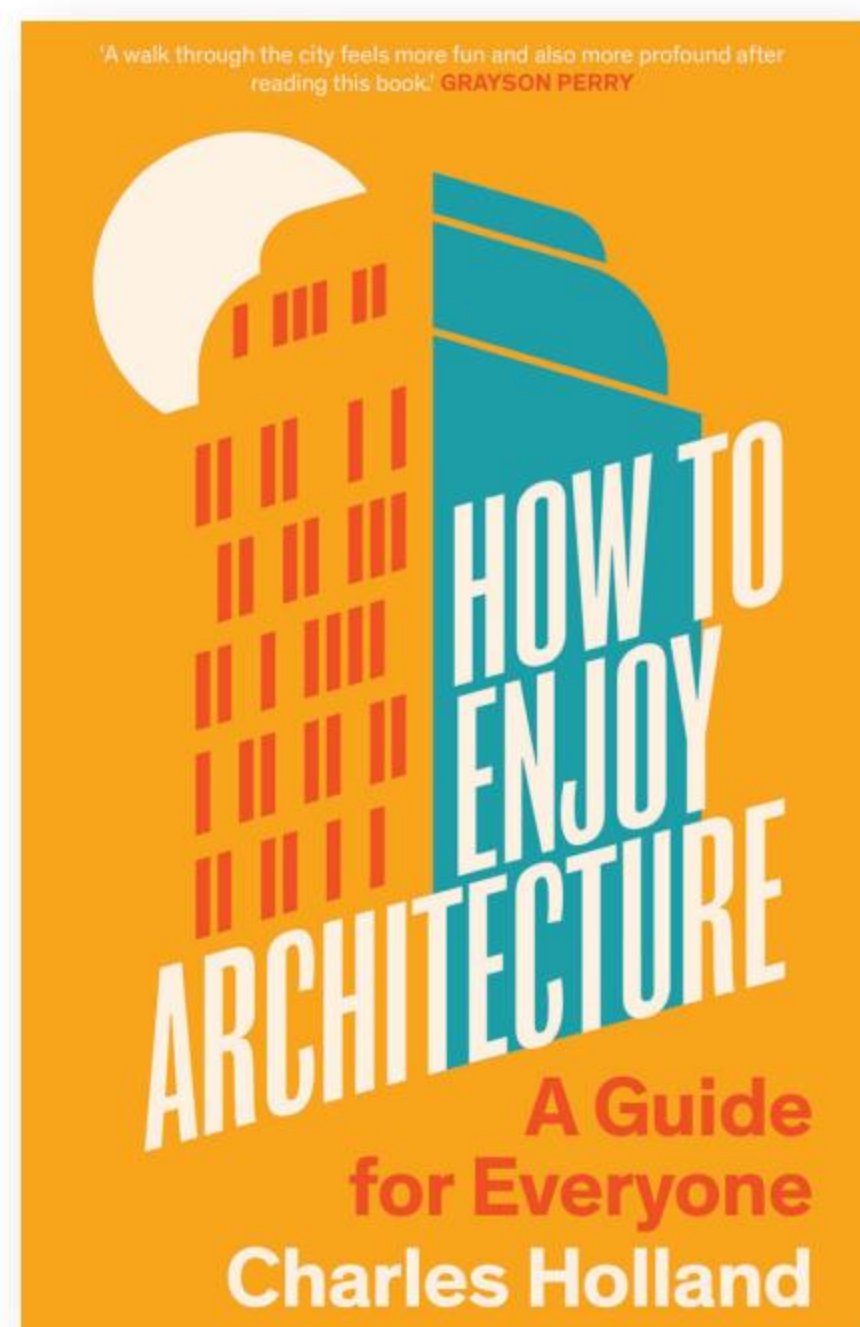
These photographs by Leonid Furmanskyy, shot on film in 2023, depict freeways in Austin, one of the locations where Megan Kimble chronicles the fight over highway expansion.



How to Enjoy Architecture

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Sometimes a friend or family member will send me a picture they have taken of a building. “You’ll like this!” they might say, or “One for you!” It’s nice to be thought of. And nice, too, that I have inspired them to appreciate the built environment a little bit more than they might have done so before.

But why might I enjoy that building more so than they? What is it about it that apparently appeals to me more than it does to them? While writing this article, I quizzed my friends on this very matter, with the general consensus being that the buildings were either “unusual,” “weird,” or had “lots of concrete.”

Maybe this says more about me than it does them, but it did bring to light two things: that the enjoyment of architecture is seemingly gatekept and that much architecture—the good, the weird, and the unusual—goes sadly *unenjoyed*.

Unpicking the reasoning behind this can be a tricky business. But on hand to help is *How to Enjoy Architecture: A Guide for Everyone* from British architect Charles Holland. As its title suggests, this isn’t a book solely for those already deeply entrenched in the annals of architectural history. This is a book for those who are aware that architecture exists and is all around us and who might want to appreciate it a bit more.

Holland gives the reader a personal, non-exhaustive guided tour through the history of architecture and sheds welcome light on the facets that are sometimes hidden from view. “It is about the ideas that lead to buildings and the ideas that they generate. In opening our experience of buildings, we might enjoy those ideas, too,” he writes.

Holland’s perspective is filtered through the lenses of style, composition, space, materials, structure, and use—all of which have their own dedicated chapters. Naturally these overlap, but that’s a good thing. Throughout the book we learn that things are often not as they seem. The composition of a building can lead us to think spaces are arranged in certain, sometimes deliberately misleading, ways. Materials can be deliberately deceptive, too: Mathematical tiles, most famously used in southeast England, were employed to mimic bricks in the 18th and 19th centuries.

But Holland argues that it’s all OK. *How to Enjoy Architecture* rebukes architectural dogmas and instead opens up all the ways a building can result in good architecture.

What might be missing here, though, is the means to appreciate sustainable ways of building. The logic behind material selection isn’t ignored, but sustainability goes beyond materials, and it could be addressed with the same fervor Holland applies elsewhere. That said, he takes time to introduce architecture to the reader, always first at a fundamental level (e.g., describing how a loadbearing wall and timber floor structure work).

The best aspect of the book is that it has given Holland license to write freely about the architecture he loves. There’s no better recipe for good prose. All of which, however, makes the reader yearn for a photo of what is being described. Don’t worry, there are images, and even an axo (of Loos’s House Müller), but it would be nice if there were more to save the reader reaching for their phone every now and then.

While reading it, I also recalled the idea of the purist and tourist, put forward by the late Virgil Abloh. For the purist, in this context, visiting architecture in real life is the final checkbox in their experience of it. The tourist, however, experiences architecture when they stumble across it for the first time. *How to Enjoy Architecture* caters to both: If you haven’t been to the buildings mentioned, you’ll no doubt want to enjoy them now. And if you have, you’ll be able to spot and enjoy even more.

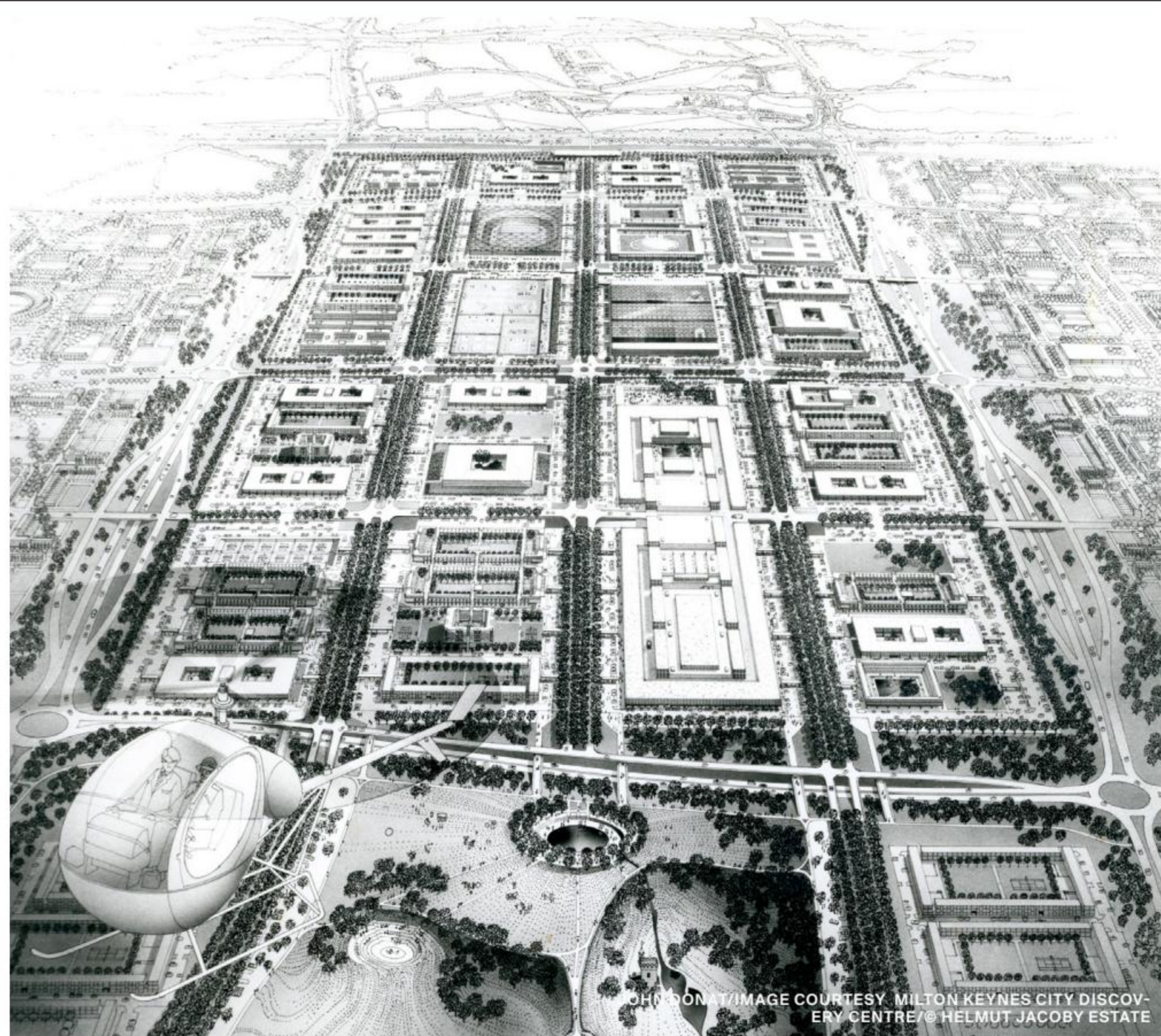
While sometimes the first book a budding architect may read these days is *101 Things I Learned in Architecture School*, perhaps *How to Enjoy Architecture* is a better option. For if you can’t enjoy it, what’s the point?

Jason Sayer is a writer and teacher based in London.

Top: An aerial view of Milton Keynes City Discovery Center by Helmut Jacoby.

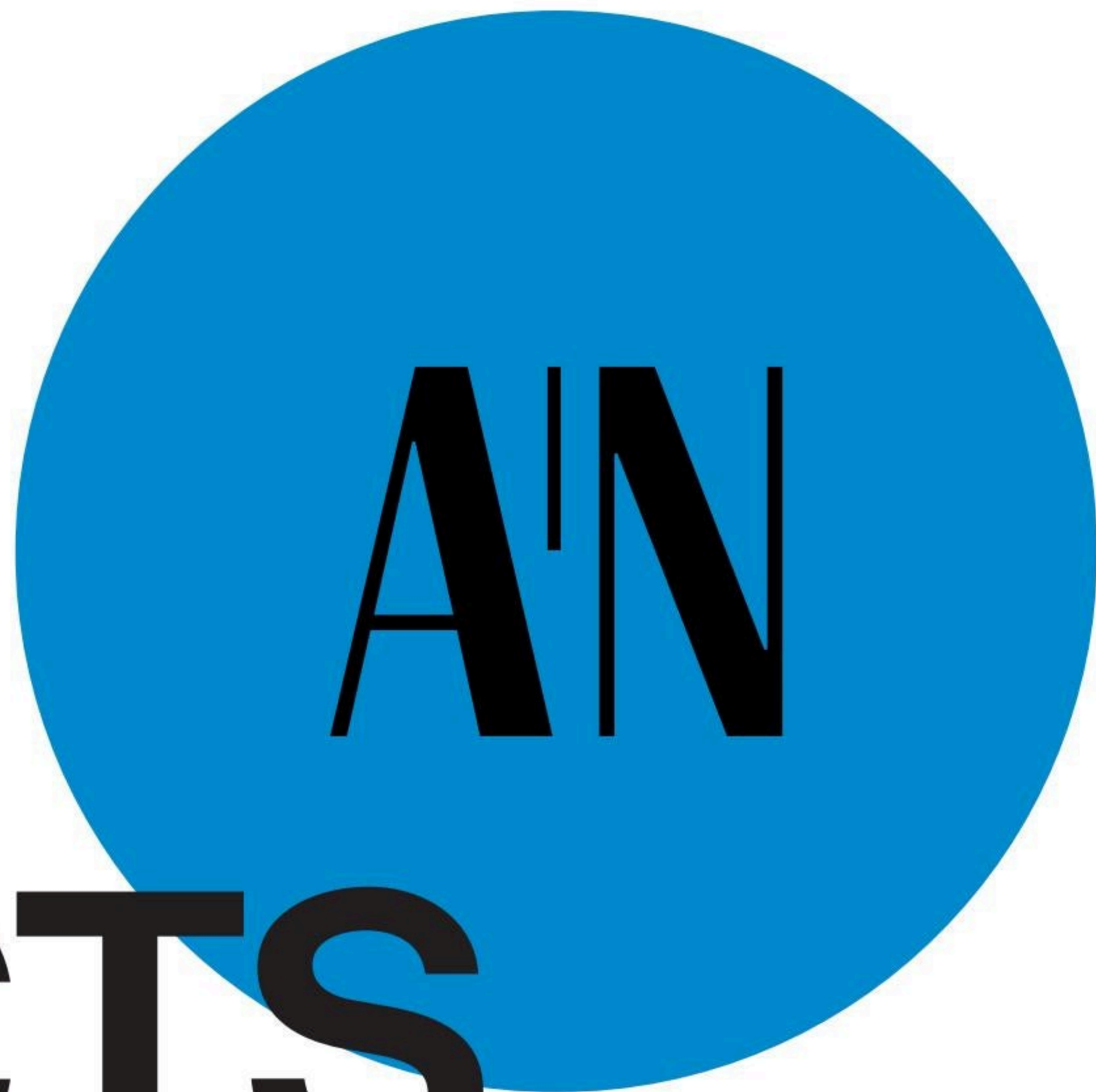
Above: A House for Essex by Charles Holland, FAT, and Grayson Perry.

Right: São Paulo Museum of Art, Brazil, designed by Lina Bo Bardi.



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