

The Architect's Newspaper

January 2019

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The Unbearable Lightness of Being (Landmarked)

Snøhetta goes back to the drawing board with revised AT&T Building plans.



COURTESY SNØHETTA

In early December 2018, Snøhetta released a new set of renderings that showed how the firm plans to update the base of Philip Johnson and John Burgee's (now land-marked) 550 Madison Avenue.

After taking flak over its initial plans to peel the granite facade back from the post-modern tower's base and replace it with glass, Snøhetta's new release presents an alternate vision that would instead infill the entrance colonnade with retail.

The biggest change would be to the rear passage that runs between East 55th and 56th Streets. During a 1994 renovation, Gwathmey Siegel Kaufman had fully enclosed the lot within an arched glass-and-steel canopy, with retail installed inside; Snøhetta would replace this structure with a slimmer, open-ended alternative, scrap the retail, and turn the space into a 21,000-square-foot public garden with a waterfall.

Snøhetta's design proposes a glass awning supported by Y-shaped steel columns that would open to the street at either end. In 1994, Gwathmey Siegel Kaufman had covered one of the rear yard's windows with a steel plate so an HVAC system could be run through, but that window would be restored if Snøhetta's scheme is approved.

550 Madison Avenue, originally built to headquarter **continue reading on page 15**

It's all wood, man

Mass timber is gaining steam and will get another major boost as code updates passed in 2018 are set to allow structural timber up to 18 stories high. We've mapped out the major timber players and feature the big issues, completed projects, and boundary-pushing proposals. **See page 16**



COURTESY CHAD DAVIES/IMELK

Factory-Built Taking Off

With an infusion of innovation, talent, and investment, California is embracing prefab architecture.



OFFICE OF MOBILE DESIGN

With a long history of mass-produced housing experiments going back to the 1920s Sears, Roebuck & Co. mail-order homes, and the post-World War II suburban mass-housing experiments, California has a rich legacy of prefab hits—and misses. In recent years, a new generation of builders have arrived on the scene seeking to surpass this legacy by exploiting emerging mass-customization techniques and new technologies to streamline production.

But these aren't your grandparents' prefab units. The days of rigid space-age designs are long gone, replaced by new designs that instead focus on diverse aesthetics and material flexibility. These new designs tend toward a pervasive adaptability that not only bolsters their widespread appeal, but **continue reading on page 14**

Architectural Record

Mixtape collects the stylings of America's most musical architects.



COURTESY MELISSA J. FROST

"Last Night I Dreamt I Was a Robot"
"Selfies on Parade"
"Dadwhyareyousonegative"

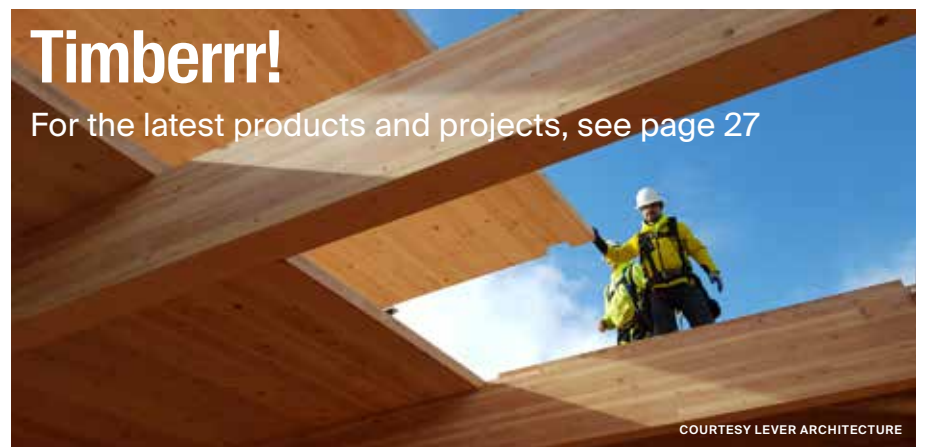
No, these are not leaked track titles from Beyoncé's next album. They are songs from *Practicing Spaces*, a mixtape that collects the work of much lesser-known musicians who have one conspicuous thing in common: They're all architects.

Readers may know Michael Meredith of MOS Architects and Florian Idenburg of SO-IL by their day jobs, but by night, these architects unleash their true passions: They plug in the amp and let the music play.

Melissa J. Frost, a designer and studio instructor at California State Polytechnic University, Pomona, compiled and produced *Practicing Spaces* after a conversation with Eric Bunge of nARCHITECTS made her realize that several of her architect friends had bands on the side. "Eric was saying that he tries to get together to play music with Florian Idenburg and Michael Meredith, and he still has a practice space in his basement," Frost said. She quickly tracked down music from other figures in the field, like Michael Young, her master's thesis adviser at Princeton, and Wendy Gilmartin, a colleague at Pomona. Frost, a musician herself, declined to include her **continue reading on page 5**

Timberrr!

For the latest products and projects, see page 27



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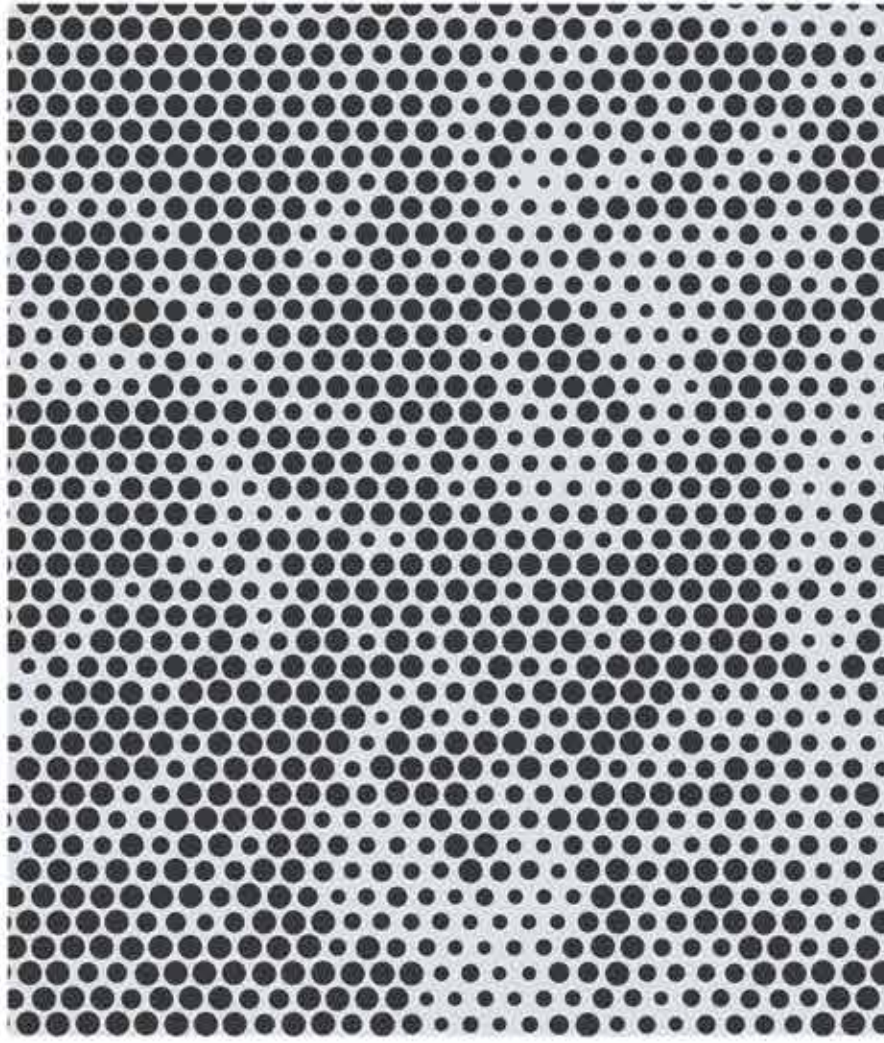


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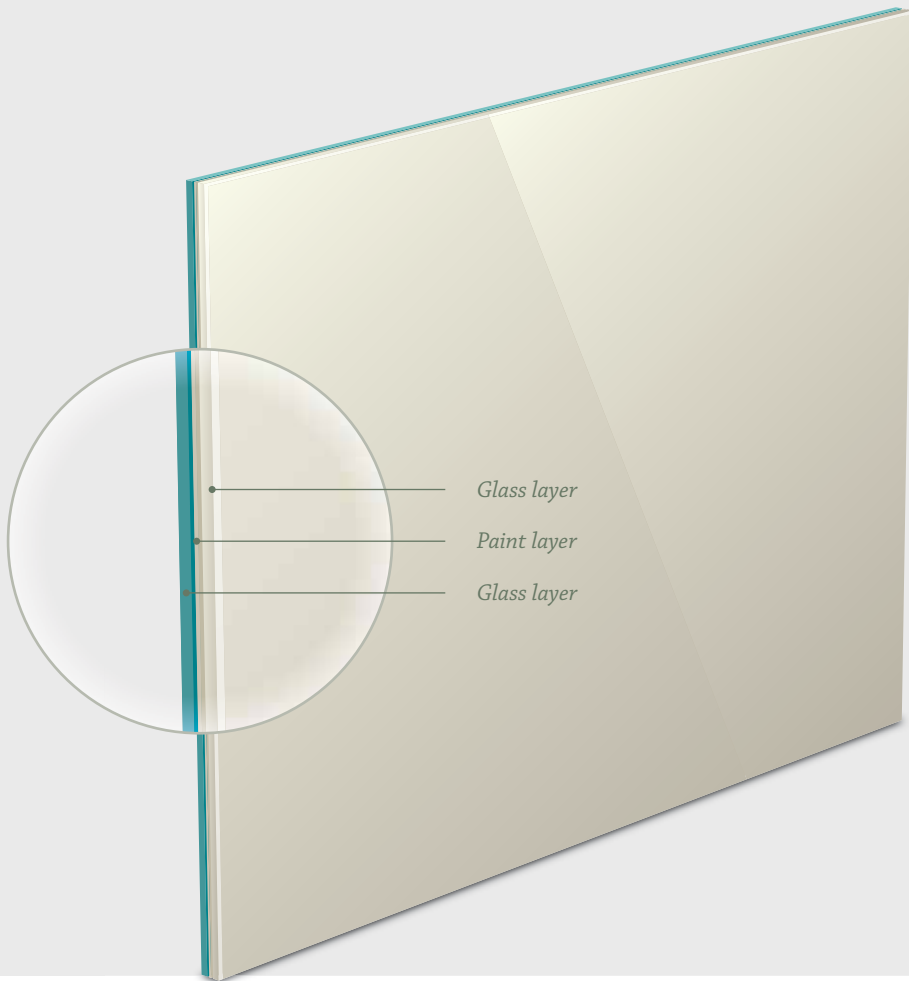
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Editors' Note

Yet another design nonprofit leaves the street.



The Van Alen Institute has sold its space on West 22nd Street in New York City.

In April 2015 we heard that the AIGA in New York City was giving up its 5th Avenue storefront headquarters to move into an upper floor of the Woolworth Building. In response, we published an editorial, “Design Orgs Need to Meet the Street,” that argued it was a mistake, at least in New York, for design organizations to give up street frontage, and more importantly, that as architects and designers, “they should also realize the value and need for public space in New York.” AIGA’s 5th Avenue storefront held ambitious, scholarly exhibitions with cutting edge graphics that were visible to the street. This gave them a powerful street presence and the city’s news outlets covered the organization’s projects.

The idea that design nonprofits needed a public presence was a hangover from the 2003 loss of the Urban Center in the Villard Houses on Madison Avenue that housed the Architectural League of New York, the Municipal Art Society, the Parks Council, the local AIA, and a constantly programmed gallery and bookstore. The Center did not have a direct street presence but was open and easily accessible off Madison Avenue, and it quickly became a meeting place for the city’s design community.

The AIA eventually opened in the Center for Architecture, a public-facing storefront on LaGuardia Place, which quickly became a success in a way that was unimaginable before the AIA had a street presence. Sadly for New York, design organizations have not learned from these examples and, caught up in the rapidly gentrifying and expensive real estate environment of Manhattan, seem willing to give up their “public” spaces and move into the background.

The 2015 editorial mentioned that the Van Alen Institute had recently given up its large upper-floor office, which contained a gallery and meeting space, along with its short-lived ground floor bookstore, in exchange for a small storefront that did not allow dynamic public programming. When

it did this, the Van Alen gained an office off the street that held a dysfunctional, inconvenient space that was hardly fit to host public events. But its ground floor space had access to the basement, and there was hope that the lower level would be opened up for the office so that the ground floor could be converted into a public event or gallery space. This never happened.

Now we have word that the Van Alen has sold its 14-story headquarters at 30 West 22nd Street as a way of substantially increasing its endowment.

The Van Alen staff, according to the organization’s statement, is now “spending an increasing portion of their workday dealing with property management issues.” Furthermore, it argued Van Alen is no longer a New York City-centric organization as it sponsors programs and initiatives across the globe. With the rise in real estate values in New York and the rent they are bringing in from the building, it made sense to the organization to sell the building to support its international programming.

We are not in a position to decide what is best for the Van Alen, which claims it was “uncommonly diligent and methodical in its decision to turn a real estate asset into a resource that gives the organization broad geographic and programmatic flexibility.” But still, one can feel sad for New York City that organizations like the Van Alen are giving up the possibilities of ground floor public space, with little assurance that they can one day get another space with that kind of presence in the city.

When AIGA left its 5th Avenue headquarters, it disappeared from public view, and though its new office is two blocks from the *AN* office, we have heard virtually nothing from the organization. Let’s hope that the Van Alen Institute stays engaged with the New York public and doesn’t disappear like AIGA did. **William Menking**

Masthead

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Vol. 17, Issue 1 | January 2019

The Architect’s Newspaper (ISSN 1552-8081) is published 12 times a year (monthly) by The Architect’s Newspaper, LLC, 21 Murray St., 5th Fl., New York, NY 10007.

Presort-standard postage paid in New York, NY. Postmaster, send address change to: 21 Murray St., 5th Fl., New York, NY 10007.

For subscriber service: Call 212-966-0630 or fax 212-966-0633

\$3.95 a copy, \$39.00/year; International \$160.00/year; Institutional \$149.00/year

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5 News



Architectural Record continued from front page work in the mix. “It was a little too weird to put myself on it,” she said, “so I decided not to.”

Some of the tracks are deep cuts that date back to youthful experimentations. Daniel Barber, now an associate professor at the University of Pennsylvania School of Design, closes out the tape with its oldest inclusion: a recording from a Lollapalooza stage, where Barber performed in 1995 with the band Blowhole. Other tracks prove that some architects are actively writing, recording, and performing music today. Neil Denari’s track, “Music for One,” comes fresh from 2018.

The tape pulls from over a dozen different acts, but they all hew to a similar aesthetic. Many are nonvocal, with electronic and guitar instrumentation and meandering song structures. “I think, like, a more instrumental or abstracted relationship to a song is inherently connected to spatial awareness or spatial perception,” Frost

hypothesized. “I do think there are aesthetic connections between each person’s individual song, and their individual work,” she continued. “I think with most of them it’s extremely obvious...Michael Meredith’s kind of pared down electronic awkward sampled song really looks like their, I think they call it, their 1983 Atari-style drawings.”

Frost released the tape as part of her IIIII Columns project, an online platform where she has published other work that falls outside traditional disciplinary boundaries, such as a harm-reduction guide for performance venues or “a catalog of Marxist modernist home goods.”

The mixtape, which is being published in a limited run on physical cassette tapes, “is supposed to be kind of difficult to get a hold of,” said Frost, but she is planning a series of listening parties across the country. **Jack Balderrama Morley**

To order the mixtape, visit iiiiicolumns.com.

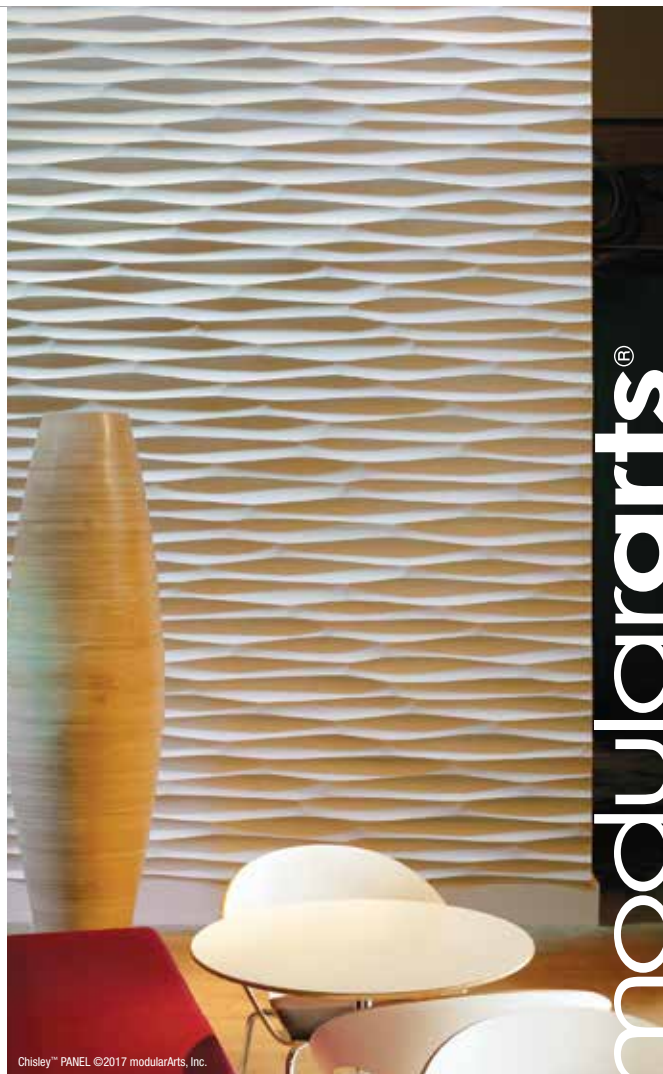


COURTESY MELISSA J. FROST

The mixtape, which is being published in a limited run, comes in carefully designed packaging.



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6 In Case You Missed It...

We corralled the top architecture and design stories buzzing about the internet this month—check out the highlights.

Amazon drops down in Queens, Crystal City, and Nashville

Amazon's long search for its HQ2 location is over, as the tech behemoth decided to split its second headquarters between two locations: Long Island City, in Queens, New York, and Crystal City, a suburb just outside of Washington, D.C. The two cities will take on 25,000 employees each, while Nashville will pick up an "East Coast Hub" expected to employ 5,000.

Patrik Schumacher sues to become sole executor of Zaha Hadid's estate

Schumacher has filed a motion before London's High Court to remove the other three executors from the late Zaha Hadid's \$90 million estate. Those executors include Zaha's niece, Rana Hadid, artist and friend Brian Clarke, and developer and current Pritzker Prize jury chairman Lord Peter Palumbo.

Foster + Partners proposes a tulip-shaped observation tower that will change London's skyline

The Gherkin may be getting a sibling, as Foster + Partners and billionaire Jacob J. Safra revealed renderings of a 1,000-foot-tall observation tower for Central London. If the planning application for "The Tulip" is successful, the rod-shaped building would become the tallest tower on the northern side of the Thames.

Florida residents demand border wall around Habitat for Humanity housing

Habitat for Humanity announced that an upcoming 23-acre affordable housing development in East Naples, Florida, will be built with a concrete border wall. Residents within the nearby communities have called for a physical barrier separating them from the new property, drawing complaints from affordable housing advocates.



DBOX/FOSTER + PARTNERS



COURTESY SNØHETTA

Snøhetta selected to design El Paso Children's Museum

The El Paso Children's Museum has chosen Snøhetta to design its brand-new home in the heart of the city's Downtown Arts District. The firm beat out Koning Eizenberg Architecture and TEN Arquitectos for the honor and will be raising an elevated museum on "stilts" above ground-level community gardens.

Arakawa and Gins' legendary Bioscleave House faces the wrecking ball

The Bioscleave House in East Hampton, New York, designed by the late Japanese architect Arakawa and his wife Madeline Gins, is listed for sale for \$2,495,000. If purchased by a developer, the experimental, supposedly life-extending home could be destroyed and replaced with a standard spec house.

Chicago culls its O'Hare expansion shortlist to five big-name firms

Five finalists have been selected in the competition to design the new \$8.7 billion expansion of Chicago's O'Hare International Airport. The shortlist features a mix of local names and international studios: Skidmore, Owings & Merrill (SOM), Santiago Calatrava, Foster + Partners, Chicago's own Studio Gang, and Colorado's Fentress Architects.

Miami approves David Beckham's soccer stadium site in ballot vote

Miami residents voted to approve a referendum that will bring David Beckham's Freedom Park soccer complex one step closer to fruition after a five-year battle. The referendum eliminated competitive bidding for the property where Beckham and his partners were looking to build the 131-acre, city-owned Melreese golf course.

\$100 million solution could save San Francisco's Millennium Tower

San Francisco's Millennium Tower has been slowly but surely sinking and tilting westward toward the adjacent Mission Street. Now, the developers and structural engineering firm Simpson Gumpertz & Heger have submitted a \$100 million proposal to retrofit the tower with a new system of piles reaching the bedrock below.

Calgary votes not to host 2026 Winter Olympics—only two cities remain

Residents of Calgary, Canada, voted no on a special plebiscite to host the 2026 Winter Games, making it the fifth city to drop out. Stockholm, Sweden, and a joint bid between Milan and Cortina d'Ampezzo, Italy, remain the only two finalists. However, Stockholm's new City Council has threatened to withdraw all public funding from its bid.

Atlanta council members greenlight controversial \$5 billion Gulch project

In a midnight vote before the 2018 midterm elections, the Atlanta City Council approved a \$5 billion proposal to redevelop The Gulch, a 40-acre swath of sunken rail yards and parking lots in downtown Atlanta. The Los Angeles-based CIM Group will now likely receive a large government subsidy as the sole bidder on the project.

Virgin Hyperloop One hits major bumps in the wake of Saudi controversy

One of the world's most dogged transportation professionals—and former head of New York's Metropolitan Transportation Authority—will now head up Virgin's venture into high-speed rail service. Jay Walder has left his role as CEO of bike-sharing company Motivate in order to lead Los Angeles-based Virgin Hyperloop One.

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7 In Case You Missed It...

For more information and images for all of these stories, visit: archpaper.com/ICYMI

Snøhetta and DIALOG complete a railroad-straddling central library in Calgary

The Calgary Central Library has opened its doors to the public, a joint project between Snøhetta and Canadian studio DIALOG. The crystallized, aluminum-and-fritted-glass facade of the building's upper portion belies a warm wood interior, and the entire library rises over an active light rail transit line.



COURTESY SNØHETTA

Florida's tallest tower will be a vertical theme park for gravity-defying fun

Florida's soon-to-be tallest building, SkyRise Miami, is on track to become the country's sole vertical theme park, complete with a dramatic sloping outer wall that will offer thrill-seekers the option to try gravity-defying stunts. After years of setbacks, the 1,000-foot-tall building will tower over the edge of Biscayne Bay by 2023.

University of Cincinnati plans to demolish the Brutalist Crosley Tower

The University of Cincinnati's Crosley Tower, a 16-story Brutalist concrete structure designed by local firm A.M. Kinney, is slated for demolition. The tower, initially built for chemistry and biology labs in 1969, has fallen into a state of near-disrepair, and its inflexible cruciform design means that it can't be easily repurposed.

Foster + Partners' Mexico City airport scrapped by public referendum

Mexico City's new Foster + Partners-designed airport has been canceled although it is under construction. In a referendum, voters rejected the partially completed project, which has been beleaguered by accusations of corruption, ecological irresponsibility, and lack of community involvement.

Two-thirds of architects experience sexual harassment, new survey says

Architectural Record and *Engineering News-Record* interviewed over 1,200 architects on their experiences of sexual harassment in the field. Of the two-thirds who had experienced sexual harassment, almost 30 percent experienced sexual assault in the form of inappropriate physical contact.

Brad Pitt denies responsibility in Make It Right Foundation lawsuit

After a class action lawsuit against Brad Pitt's Make It Right Foundation over leaks and other construction defects was moved from civil to federal court on November 7, Pitt's lawyers have submitted a motion asking that he be removed as a defendant in the case, claiming he played no part in the construction.

Sasaki wins competition to plan a capital city for pandas in China

International design firm Sasaki has been selected to develop a master plan for the Chengdu Panda Capital, beating out 98 other entrants. Chengdu is also the capital city of China's Sichuan province, one of the largest and fastest growing cities in the country, and the giant panda's only native habitat. The "city" will be split up into three distinct sites.

OPEN Architecture buries a cave-like museum in China's Gold Coast

New York City and Beijing-based OPEN Architecture recently completed a cave-like museum carved into a sand dune along China's Gold Coast. The UCCA Dune Art Museum is a 10,000-square-foot facility featuring ten galleries, studios, and a cafe tucked inside an all-white, unassuming structure beside the sea.

BIG completes a curvaceous school for WeWork in Manhattan

WeGrow, which BIG describes as a "10,000-square-foot learning universe," resides inside of WeWork's Manhattan headquarters in Chelsea. The completed WeGrow space is full of soft, biomorphic forms with rounded edges, and clad in soft materials, usually felt.



DAVE BURK

Norman Foster and other leaders suspend participation in Saudi Arabian megacity

As the link between the alleged killing of *Washington Post* journalist Jamal Khashoggi and the Saudi Crown Prince Mohammed bin Salman grew stronger, architects and design leaders on the advisory board of NEOM, a \$500 billion smart megacity announced last year, have bowed out of the project.

Apple announces a new \$1 billion campus in Austin, Texas

Not to be left out of the headquarters expansion game, Apple has announced that it will be opening a \$1 billion, 3-million-square-foot campus for 5,000 employees (with room for up to 15,000) in Austin, Texas. The company will also be opening satellite offices with up to 1,000 employees in San Diego, Seattle, and Culver City, California.

Waymo's self-driving taxi service goes live in Arizona

After a year of setbacks for the self-driving car industry, the Alphabet-owned Waymo has rolled out its autonomous taxi service in Arizona. Waymo Go is now available to riders in the Metro Phoenix area, including Tempe, Chandler, Gilbert, and Mesa, with plans for a wider rollout. However, Waymo is starting small with a pool of invite-only riders.

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COURTESY PRIME MINISTER'S OFFICE OF NARENDRA MODI

Michael Graves Architecture completes the world's tallest statue

Gujarat, India, now boasts the tallest statue in the world. The nearly 600-foot-tall *Statue of Unity* is a bronze image of India's first deputy prime minister, Sardar Vallabhbhai Patel. It was designed and master planned by Michael Graves Architecture & Design to anchor what will eventually become a resort.

Human blood sculpture coming to New York City in a Norman Foster cage

British contemporary artist Marc Quinn has envisioned a sculpture made of human blood, intended as a commentary on the ongoing global refugee crisis. *Odyssey* will debut on the steps of the 5th Avenue branch of the New York Public Library in fall 2019 in a Norman Foster-designed structure.

Mecanoo completes the world's largest performing arts center in Taiwan

A grand opening ceremony and concert signaled the official debut of Taiwan's National Kaohsiung Centre for the Arts—the world's largest, single-building performing arts center under one roof. Mecanoo used undulating curves to carve out cavernous voids that encourage natural ventilation throughout and create public gathering places.

BIG unveils designs for new Oakland A's stadium featuring a rooftop park

Bjarke Ingels Group and the Oakland Athletics have unveiled designs for a transformative scheme that would bring a new baseball park, housing, recreational areas, and a business campus to the city. As one might expect, the project is being pitched as a double play for the community.

Elon Musk's planned tunnel for L.A.'s Westside is cancelled

After settling a lawsuit with community groups over environmental concerns in Los Angeles, Elon Musk's Boring Company has agreed to halt its plan to build a 2.7-mile test tunnel underneath the city's Westside.

World's first underwater hotel opens in the Maldives—for only \$50K a night

In the Maldives, the Conrad Maldives Rangali Island has officially announced the opening of the world's first underwater hotel residence, a two-story villa more than 16 feet below sea level. The elaborate suite isn't cheap. It costs \$50,000 per night and is only available for a four-night, \$200,000 vacation package.

L.A. might repurpose its General Hospital as affordable housing

The Los Angeles County Board of Supervisors approved a motion to study the feasibility of reusing the county's abandoned General Hospital for affordable, low-income, and mixed-use housing. The General Hospital is joined by Charity Hospital in New Orleans as one of two major abandoned Art Deco-style hospitals in the United States.

Airbnb expands into ground-up housing with the help of architects and more

Airbnb cofounder Joe Gebbia announced that the tech company would begin recruiting architects, engineers, industrial designers, roboticists, and more to join Backyard, its housing prototype initiative. More than just a design exercise, Airbnb is looking to create sustainable, flexible units to infill a wide variety of unused spaces.

U.S. Pavilion from Venice Biennale announces upcoming debut in Chicago

The seven installations in the United States entry to the 2018 Venice Architecture Biennale will make their stateside debut on February 15 in Chicago. *Dimensions of Citizenship: Architecture and Belonging from the Body to the Cosmos* will be on view for the first time outside of the Biennale at Tadao Ando's Wrightwood 659.

Cryptocurrency mogul taps California architects for tech-powered desert utopia

Millionaire lawyer Jeffrey Berns has bought up 100 square miles in the Nevada desert and tapped Tom Wiscombe Architecture and Ehrlich Yanai Rhee Chaney Architects to design an as-of-yet-unnamed, futuristic city. Complete with homes, offices, a college, and a research campus, the city will allow citizens to vote on the blockchain.

Richard Rogers wins the 2019 AIA Gold Medal

Lord Richard Rogers has been awarded the American Institute of Architects' 2019 Gold Medal, the highest honor the institution offers. In recognizing the English architect's storied career, which spans more than 50 years, the AIA singled out Rogers's Centre Pompidou in Paris and his commitment to social and environmental progress.

Louvre Abu Dhabi dome fabricator declares insolvency over late payments

A year after the Jean Nouvel-designed Louvre Abu Dhabi opened its doors in the Saadiyat Island Cultural District, the Austrian steel engineering conglomerate Waagner Biro, responsible for building the intricately latticed, double-layered dome over the museum, has reportedly declared insolvency due to spiraling costs and late payments.



COURTESY EYRC ARCHITECTS AND TOM WISCOMBE ARCHITECTURE

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Do the Okeechobee

Louis Kahn's floating concert hall finds a permanent home in Palm Beach County.



COURTESY THE LOUIS KAHN ESTONIA FOUNDATION



COURTESY THE AMERICAN WIND SYMPHONY ORCHESTRA

Top: The *Point Counterpoint II* docked in 2011. **Above:** The boat heading to Leningrad in 1989.

Don't count out Louis Kahn's floating concert hall just yet. The 42-year-old *Point Counterpoint II* has found a new life in Florida, only a year after fears were raised that the boat might have to be scuttled.

Although the speed of the 195-foot-long, 38-foot-wide boat tops out at a measly six to eight knots, the seagoing vessel has still managed to perform all over the world. The *Point Counterpoint II* lies flat, a stark departure from Kahn's distinctive use of striking geometric forms in his buildings, but also includes a hydraulic-powered steel cover capable of rising 25 feet into the air, topping the barge with a center stage.

The American Wind Symphony Orchestra (AWSO), founded in 1957 by Robert Austin Boudreau, has called Kahn's maritime arts center home since 1976. Kahn and Boudreau were personal friends and discussed replacing the first *Point Counterpoint* (a repurposed barge incapable of independent movement) throughout the 1960s. The resulting *Point Counterpoint II*, designed by Kahn, eventually set sail in 1976 for a 76-city tour as excitement for the Bicentennial was reaching a fever pitch—two years after Kahn's death in 1974.

By AWSO's 2017 tour, 91-year-old Boudreau had been looking to step down as director for some time, and without a successor lined up, he put the boat on the market. Following a bidding war to lure the boat to a new permanent home between the city

of Kingston in upstate New York and a private entity in Florida, the concert hall went to the latter, and has since been brought to Lake Okeechobee in Palm Beach County. Boudreau blames the high cost of towing the boat up to the Great Lakes to get to Kingston in part for his selection of the Florida bidder, claiming that it would have cost over a \$100,000 to comply with the Coast Guard's regulations.

In Boudreau's view, if the boat isn't serving the community, it might as well be scrapped. That's part of the reason that *Point Counterpoint II* will become a center for music education for local children, including those from Pahokee, one of the poorest communities in Florida. For Boudreau, who grew up on a chicken farm in Massachusetts during the Great Depression, a music scholarship was his ticket to college, and now he hopes to guide hundreds of students out of poverty and into college through music in much the same way.

But maintaining the educational programming aboard *Point Counterpoint II* will require fundraising. This year, Boudreau has pledged \$50,000 from his own pocket to kickstart an endowment. He acknowledges that he won't be around forever, and so the maestro is looking to raise \$1 million to make sure that *Point Counterpoint II* will continue to live on as a public institution. **Jonathan Hilburg**



Facade Designer: SHoP Architects
Structural Engineer and Facade Consultant: Thornton Tomasetti

Instant Replay

With four consecutive Stanley Cup victories in its history, the **Nassau Veterans Memorial Coliseum** is a beloved fixture of Long Island life. When the owner of the 1972 arena decided to reward fans with a renovation worthy of its storied past, it reimagined the venue with an overcladding that would bring new life to the facility. With a design by **SHoP Architects** and **Thornton Tomasetti**, the new folded-ribbon facade of composite aluminum fins connects to the original structure with a minimum of intervention, ensuring thoughtful reuse of a venue that still has a lot of wins in its future.

Read more about it in **Metals in Construction** online.

 **Ornamental Metal Institute of New York**

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10 Open

East

Ford Foundation Center for Social Justice



RICHARD BARNES

The landmark headquarters of the renowned Ford Foundation reopened in December after an extensive renovation by Gensler. Newly dubbed the Ford Foundation Center for Social Justice, the 415,000-square-foot building has expanded public meeting spaces designed for enhanced accessibility.

The 51-year-old building has been reconstructed in compliance with updated city safety codes and designed with an increased attention to energy efficiency. Gensler restored the historic interior to near-original condition, and added an open office plan. Thanks to this inclusive design, employees and visitors have more access to daylight and ample views of the lush atrium garden designed by Dan Kiley. The project also includes over 1,500 pieces of restored

furniture, repurposed fixtures, and refinished wood pieces by Warren Platner.

The foundation building houses permanent tenants, including Philanthropy New York and the United Nations Foundation. The project is pursuing LEED Platinum certification. **Sydney Franklin**

320 East 43rd Street 212-573-5000
New York

Architect: Roche-Dinkeloo (1967); Gensler (2018)

Landscape architect: Raymond Jungles in collaboration with SiteWorks

Midwest

National Veterans Memorial and Museum



JEREMY BITTERMAN

Columbus, Ohio's new National Veterans Memorial and Museum (NVMM) seems to gently lift off from the banks of the recently redeveloped Scioto River like a 3-D spirograph drawing. Allied Works Architecture, in collaboration with OLIN, sculpted seven acres of the riverbank to accommodate a building composed of intersecting bands of structural concrete that thread down into the earth and coil upward. This spiral banding leaves room for a processional ramp that winds from the ground level to a rooftop sanctuary from which one can take in the views of OLIN's reflective landscape of memorial groves. As the concrete bands cross to form the building's exterior structure, a custom dark wood acoustic ceiling—not unlike the underside of a mushroom—creates a comfortable gallery space inside. The museum galleries,

designed by Ralph Appelbaum Associates, are filled with the personal stories of veterans. While other museums are dedicated to individual branches of the military or specific conflicts, the NVMM is the first museum of its kind in the United States that tells the story of American veterans as a whole, focusing specifically on how they, as civilians, continue to affect their communities. **Elizabeth Blasius**

300 West Broad Street, Columbus, Ohio 43215 614-362-2800

Architect: Allied Works Architecture

Landscape Architect: OLIN

East

Kasmin Gallery



COURTESY STUDIOMDA

The new flagship location for the Kasmin Gallery opened next to the High Line last October, sporting a boxy, angled exterior of white concrete with a subtle wood texture. Designed by studioMDA, the 3,000-square-foot building features a column-free interior that can smoothly showcase large-scale sculptures beneath a coffered ceiling full of skylights. The super-waffle grid not only diffuses natural light into the space below, but also creates a pattern for the gallery's rooftop sculpture garden.

The undulating landscape, designed by Future Green Studio, allows plants and artwork to be set deeply in the soil. The outdoor gallery is visible from the elevated park next door, and is part of Related Companies' latest efforts to broaden the artistic and architectural appeal of Zaha

Hadid's adjacent 520 West 28th Street condominiums. Kasmin Gallery's rooftop garden attracts High Line visitors and condominium residents alike. Notably, the High Line Nine, an elongated, multitenant gallery directly underneath the rail park, was also designed by studioMDA. **SF**

509 West 27th Street 212-563-4474
New York

Architect: studioMDA

Landscape architect: Future Green Studio

West

Stoneview Nature Center



PAUL TURANG

Of all the vistas the recently completed Stoneview Nature Center provides, the one overlooking an active urban oil field is perhaps the most arresting.

The hillside nature center by Ehrlich Yanai Rhee Chaney Architects (EYRC) and AHBE Landscape Architects is sandwiched on a former brownfield site between two popular recreational hiking areas, a residential neighborhood, and the Inglewood Oil Field, the largest urban oil field in the country. The nature center connects a string of existing trails while also providing educational and community spaces focused on healthy living.

EYRC describes the 4,000-square-foot community center as low-slung and "almost residential" in character. The center is anchored by a red and black steel awning that provides covered out-

door space for hosting outdoor cooking demonstrations, gardening sessions, and landscape history classes, as well as more conventional recreational activities.

Next to this structure is an edible community garden and an outdoor classroom by AHBE. In the garden, sitting logs encircle an open plaza from which to explore nearby demonstration gardens. The gardens dissolve into the scrubby hillside trails that crisscross the mountainside and frame overlapping views of L.A.'s agricultural and industrial landscapes. **Antonio Pacheco**

3017, 5950 Stoneview Drive Culver City, California 310-202-3001

Architect: Ehrlich Yanai Rhee Chaney Architects

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11 Eavesdrop

Gay for Hitler

According to Mark Lamster's recent book, *The Man in the Glass House*, Philip Johnson attended a Nazi victory rally in Poland in 1939 and was spellbound by Adolf Hitler, wholly inspired by thoughts of what the dictator might achieve if provided with a surge of modern, artful design. He also developed an insatiable desire for men in tight-fitting polished jackboots. "The German green uniforms made the place look gay and happy," Johnson reported, describing what we now know as the uniforms of the land forces component of the Wehrmacht. Johnson dined, drank, and socialized with Nazis in Europe in the hope that they would eventually come around to a Miesian aesthetic. But with the Bauhaus long closed under political pressure and Mies himself fleeing from Germany to the Illinois Institute of Technology, Johnson's efforts were ultimately in vain. Under investigation by the FBI, he would later justify his attraction to the Nazis as one driven by sexual desire, not political ideas—to eye-rolling effect.

(Obvious) Questions

It's a rookie mistake to try and ease Rem Koolhaas into a conversation. That's what we learned during a recent interview with the notoriously cantankerous architect, who stopped himself midway into his first response to say, "I don't know why Americans ask such obvious questions."

"Be a bit more ambitious," Koolhaas said. "Seriously."

We never got a chance to ask him why his latest American project—the Audrey Irmas Pavilion for Wilshire Boulevard Temple in Los Angeles—looks like a project lifted from BIG.

Speaking of the "Rem," did you catch Jack Self's epic takedown of Koolhaas in his November 16 *Architectural Review* essay? Self's best lines about the imperious Koolhaas:

"No question, Rem is a genius. Nonetheless, his wake is toxic: stained by Randroid egos (both triumphal and crushed), the intense interpersonal competition, and the exploitation of intellectual and manual labor. How does it all end, you wonder. In some ways, Tomas Koolhaas's documentary was a preemptive eulogy. Death is present in every shot, tugging at the great man's sleeve. The film is also suffused by an intense melancholy. It is the peculiar sadness of endings: when a family line is extinguished, when change erases beauty and meaning, when an entire world order disintegrates. Starchitects are still with us, even though their era is over. Koolhaas himself called time on it in the mid-aughts. It is no contradiction to honor them, while admitting that we must give ourselves permission to abandon the figure of the heroic architect, and along with it the Western blueprint for greatness."

Fifth Season?

At a recent gathering at the new Four Seasons Restaurant, organized by The Glass House, Paul Goldberger and Frank Gehry reflected on Gehry's career. Isay Weinfeld's not-so-critically-acclaimed, \$30 million Four Seasons on 49th Street references Philip Johnson and Mies van der Rohe's iconic Seagram Building interior in some zombified ways, with its glass-bead window curtains and vertical teak wall vaguely reminiscent of the former space. In the spirit of awakening the past, Gehry and Goldberger had a fun back-and-forth about Philip Johnson, who was a close friend of Gehry's. Highlights of the conversation included a story about how Johnson told Gehry that his fish vase was a terrible idea and then, two weeks later, after a successful launch at a local gallery, called him up to order one. Gehry also told a tale of how when Johnson was on his death bed, asleep, someone was discussing the Brick House, and Johnson popped up from his slumber and said, "That's the stupidest idea I have ever heard!"

Is some funky seniors up in here?

Hello, foxy grandpa.

Senior housing could always use an upgrade, but we're not sure about the latest press release we got from a PR firm that began: "When people think of senior living communities, they probably don't think of them as being 'funky.'"

"Funky" is an odd way of dressing up the new digs at The Arbor at Bridgemill in Canton, Georgia, by StudioSIX5 and WDG Architecture.

With private guest cottages featuring voice-activated fireplaces, built-in closets that display outfits styled by staff, and on-call maids with nightly turndown service, the amenities at the Arbor are undoubtedly deluxe.

But the look? Still more mid-budget motel (tweed + leather anyone?) than funky-fresh. It's a bit of a hodge-podge, with dizzying patterns covering the dining hall banquettes, golden bar stools, and tufted velvet chairs by Mitchell Gold + Bob Williams. Or, as the press release states, "At every turn, people will find a combination of textures, contrasting colors and statement pieces resulting in a fun-yet-sophisticated vibe."

While the project is undoubtedly intended to address senior living design challenges (like including firm-cushioned seating that makes it easy to sit and stand up without assistance), the interior aesthetic is more what you might expect from a passable VRBO listing than an all-inclusive resort and spa.

"Putting the funk into senior living design?" We just don't see it.

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Fully Scully

Daniel V. Scully, the son of historian Vincent Scully, works as an architect and has built an auto-inspired compound near Dublin, New Hampshire.

The houses architects build for themselves often reveal much about their makers—just think of Thomas Jefferson's Monticello, Frank Lloyd Wright's Taliesin, or Sir John Soane's 13 Lincoln's Inn Fields. The homes of architectural auteurs are testaments to their philosophies, their religions, their gods. And Daniel V. Scully's compound in the shadow of Mount Monadnock near Dublin, New Hampshire, is a fascinating, if little known, example of a self-referential project that consumed half of its designer's life.

A slab of Vermont slate—the tombstone of the architectural historian, Vincent Scully—lies in wait on the ground for a sketch of the temple of Juno at Agrigento to be carved into it. Vincent Scully—Dan's father—glimpsed the Greek ruin from a warship during World War II, a sighting that marked the beginning of his love affair with architecture. Another relic of the classical world on Dan's compound is his sheet metal interpretation of the *Winged Victory of Samothrace*.

Living and working in the shadow of a famous parent can be intimidating, but Dan Scully gamely embraced the world of architecture. He worked for Louis Kahn during the summers of his college years, and at the Yale School of Architecture, Scully was a member of Charles Moore's socially responsible Yale Building Project class of 1970. He also joined Robert Venturi and Denise Scott Brown's groundbreaking Las Vegas seminar, and, from then on, pop culture—particularly cars—crucially informed his design aesthetic. Scully finally settled in the mill town of Harrisville, New Hampshire, designing homes, schools, and commercial buildings throughout the Monadnock region.

Scully is also something of a motor head; automobiles are integral to his vision of America as “a fast and restless place carved out of wilderness.” In 1980, he bought eight acres of land in the neighboring town of Dublin and began to create his own world of “carchitecture.” It should come as no surprise that Scully's impact on the property was informed by his dynamic, “road runs through it” *raison d'être*. Today, Scully's multistructure tableau is recognized as a notable addition to Dublin's remarkably rich collection of American architecture.

Scully's house in Dublin is a stylistic combination of regional Greek Revival, Shingle Style, and an early 1950s Pontiac. The kitchen, for example, boasts shingles and a Greek entablature, and on the whole resembles the hood of a car, complete with a giant Chieftain emblem hood ornament. The interior walls are sheathed in corrugated metal, while the dining room table is a “roadway” inlaid lengthwise with passing lines, and a gas-pump handle caps off the stairway banister. Scully's house, within hearing range of New Hampshire Route 101, was featured in the 1987 issue of Ripley's *Believe It or Not*, where it was labeled “Highway 101-Two-Lane Blacktop.”

Scully's whimsically serious work is more idiosyncratic than frivolous. His temple to the Gods of Speed faces the house down an alley lined by silver gazing balls.

The heart of this didactic folly is a solid-fuel dragster, the engine of which has been replaced by a woodstove. As in 18th-century picturesque landscapes, the compound's buildings are about memory and evoking associative emotions in viewers.

This neoclassical trope continues with the garage, where Scully prepares vintage Volvos for races. Giant piston-columns composed of silver-painted, 55-gallon drums flank the main entrance, and license plates serve as frieze decoration between the metopes of the full entablature. The plates are arranged from east to west, beginning with New Hampshire and ending with California, echoing the vector of American expansion. Atop the garage—where in classical Greece, a statue of Athena may have stood as the venerated icon—is a Mobil gas pump.

There are a variety of smaller outbuildings and objects that catch the eye: a 1950 Ford pickup originally bought for 50 dollars 50 years ago, a chicken-coop homage to the Quonset hut, a rusted-out truck with a snow plow attachment. A 1957 Cooper Formula 3 racing car hovers over file cabinets in Scully's latest and perhaps final structure on the compound, the Archives Studio, a 20-by-24-foot shed wrapped in plastic roofing tiles that have been manufactured to

resemble slate. Inside the shed, a 1968 Dan Scully painting of a Maserati engine faces Giambattista Nolli's 1748 map of Rome. A 20-foot-long drafting table sits beneath a strip window that, Aalto-like, frames a view of the lake and neighboring forest.

This seemingly humble cube, although reminiscent of Le Corbusier's Cabanon de Vacances in size and function, is a nod to the Enlightenment—more Jean-Jacques

Rousseau than Henry David Thoreau.

The primitive hut can surely be thought of as man's earliest temple, but Scully's Archives Studio also defers to the Yankee aesthetic of utility and thrift. After decades of work echoing the movement of cars and trains, this idyllic shack is just the place for a restless genius to contemplate his contributions to the manmade environment.

William Morgan



Top: Scully's classically columnar garage, workshop for half a dozen vintage Volvos, at night. **Above:** The main facade of Scully's house is an echo of the local Shingle Style, as well as of an American car's hood, grille, and moniker—a Yankee version of *l'architecture parlante*.

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...continued from front page

Factory-Built Taking Off

also helps builders meet the onerous local design restrictions that define many California communities.

LivingHomes, based in Santa Monica, California, offers a variety of factory-made designs for single- and multifamily units, including models designed by prominent architects and firms such as Yves Béhar, Ray Kappe, and KieranTimberlake.

LivingHomes' designs are built by its spinout firm, Plant Prefab, which focuses on construction and assembly. Founder and CEO Steve Glenn is hoping Plant Prefab will lead the way in creating a national network of home-building factories where "homes are built like airplanes" rather than as one-off works, as is currently the case. Plant Prefab bills itself as the nation's first sustainably minded home factory, and recently garnered a \$6.7 million investment from Amazon, which is looking to expand the market for the company's Alexa smart home technologies.

Seattle-based Blokable, on the other hand, pursues vertically-integrated projects with the help of their in-house development team's business model, which seeks to treat "housing development as a service." By controlling planning, design, and production, Blokable is able to offer turnkey development services for local nonprofits and other housing providers at a lower cost. The firm offers standardized building systems along with customizable windows, doors, and finishes in order to meet a variety of price points. Earlier this year, Blokable delivered a 70-unit housing complex in Seattle and has several California-based projects in development as well.

At the smaller end of the building scale, Gardena, California-based Cover is working to boost the availability of backyard Accessory Dwelling Units (ADUs) in Los Angeles. Owing to a 2016 state law that legalized these backyard structures, Cover has developed unique zoning analysis software that can give potential clients a view of what type of ADU they can build. Cover offers sleek custom designs and uses its own modular building systems, fabricating units in a new factory in southern L.A. County.

While many of these outfits are relatively new, legacy prefab designers are also making strides. Office of Mobile Design (OMD) principal Jennifer Siegal has been working at the intersection of portable architecture and housing for over two decades, pioneering a distinct approach to modular design that is flexible enough to include additions to existing buildings, as well as develop modular commercial structures. Siegal recently partnered with builder Bevyhouse and premium kitchen designer Tortoise to develop her own line of prefab ADU models, and is also currently working on a modular design for the Sanderling Waldorf School in Carlsbad, California.

If OMD's continued experiments in non-housing prefab building types are any indication, factory-made structures of all types could soon make their way off the assembly line and to a community near you.

AP



COURTESY FUSEPROJECT / LIVINGHOMES



Top: Global designer Yves Béhar has developed a "fully customizable" Accessory Dwelling Unit prototype with LivingHomes and Plant Prefab. **Middle:** It is designed on a four-foot module for maximum flexibility. **Bottom:** Designs for the ADU can vary from 250 to 1,200 square feet with each model featuring variable window arrangements, options for modern and semi-traditional aesthetic treatments, as well as the option for double-height spaces.

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On the Rise

MoMA picks five finalists for the Young Architects Program 2019.



COURTESY TO/MUSEO EXPERIMENTAL EL ECO, CDMX

Mexico City-based firm TO was selected for MoMA's 2019 Young Architects Program. Shown here: The studio's recent installation for Museo Experimental El Eco utilized an array of metal rods and copper plates.

The Museum of Modern Art and MoMA PS1 have announced the five finalists for next year's 20th annual Young Architects Program (YAP). Each finalist is invited to make a preliminary proposal. The winner will be revealed in early 2019, and the design will be installed inside PS1's outdoor courtyard in the summer.

The selection below hints at MoMA's commitment to showcasing forward-thinking architects who use eye-catching design, strategic planning, and social media to garner global influence. Not only do these teams create innovative spaces and experiences, but they also incorporate imaginative materials and movement into every project they pursue. Meet the young architects below.

Pedro & Juana

Ana Paula Ruiz Galindo and Mecky Reuss are the minds behind the Mexican firm Pedro & Juana. Established in 2012, they create furniture-driven designs using many of their own furnishings and fixtures. For the 2017 Chicago Architecture Biennial, they designed a festive and colorful ceiling full of lanterns and planters at the Museum of Contemporary Art Chicago. In all of their projects, their furniture and installations are aimed at transforming public space and engaging passersby.

DK Osseo-Asare, LOWDO

DK Osseo-Asare, cofounder of the Austin-based Low Design Office (LOWDO), explores the links between sustainability, technology, and geopolitics. In 2017, together with French architect Yasmine Abbas, he and his team created the Agbogloboshie Maker-space Platform (AMP), a transnational project that helps bolster maker ecosystems in Africa by teaching young professionals how to reuse recycled materials. He has also designed and planned two new cities in Ghana and Nigeria.

Oana Stanescu & Akane Moriyama

Romanian architect Oana Stanescu helped found New York-based design firm Family and is cofounder of the Friends of +Pool nonprofit. She recently stepped out to start a practice under her own name and will submit a design to MoMA in collaboration with Stockholm-based artist and designer Akane Moriyama, who weaves the fields of architecture and textiles together in her work.

Brandon Clifford, Matter Design

Matter Design, led by cofounder Brandon Clifford, is a design and research studio in Boston. It recently published *The Cannibal's Cookbook*, a guidebook for constructing walls from interlocking pieces of scrap masonry, which led to the exhibit *Cyclopean Cannibalism*, a real-world realization of a "recipe" from the book. Carving, stacking, and discovering new twists on ancient craft techniques have driven much of the firm's research.

Carlos Facio and Jose G. Amozurrutia, TO

TO is a three-year-old Mexico City-based practice that blends handcraft with architectural ideals. Most recently, it designed a multi-tent pavilion for an international culture fair within Mexico City's main public square, as well as an installation for El Eco Experimental Museum's inner courtyard featuring rows of standing metal rods topped with copper plates. **SF**

Fatal Flaws

Design errors potentially responsible for deadly bridge collapse in Miami.

Last November, the National Transportation Safety Board (NTSB) revealed that design errors could have resulted in the deadly March 15 collapse of the Florida International University (FIU) pedestrian bridge that killed six in Miami. The bridge, which hovered over eight lanes of traffic at an already hazardous intersection, was designed to minimize disruptions to the transportation below and featured an amenity deck and bicycle lane for students.

Authorities from the Federal Highway Administration found crucial errors at the northern end of the bridge, where two load-bearing trusses connected diagonally to the bridge deck. According to the reports, the bridge's designers misjudged the amount of weight that the trusses would have to carry and overestimated its capacity. Cracks then began to form along the 174-foot-long, 950-ton span—triggering a catastrophic chain of events.

In August, the NTSB tested the concrete and steel used for the bridge, finding that there were no flaws in either material. The report also included detailed pictures of the cracks, which were minor before the span's installation but transformed into deep crevices by the time the structure was placed over the bustling highway. Investigators believe these fractures contributed significantly to its failure.

On March 15, the day of the collapse, five contractors sent employees to inspect the bridge and implement repairs, including FIGG Bridge Engineers and Munilla Construction Management. At least one of FIGG's consultants was aware of the cracks at that time. On that day, employees were asked to strengthen the overall structure by tightening its tension rods. But the road was left open to traffic, despite the cracks and the danger they represented. It remains unclear why the employees were sent to work in such dangerous conditions, or why the road was not shut down, knowing the precarious status of the bridge.

In September, the Occupational Safety and Health Administration (OSHA) also determined that the contractors had sent their employees to work on the site despite the fact that collapse was imminent, and fined the companies for employee endangerment after six employees were injured or killed by the bridge's collapse. The companies were cited for seven violations, with a fine totaling over \$86,000.

The NTSB report is preliminary, and investigators are still searching for other design and technical flaws that led to the bridge's failure. **Ali Oriaku**

Unbearable Lightness continued from front page AT&T in 1984, became the youngest landmarked building in New York City this past July, but owing to a secret demolition suffered in January, the lobby is ineligible for landmarking.

Prior to the lobby demolition, four elevators at the back wall of the lobby would take employees and guests 65 feet up to the office tower's sky lounge, from where they would be routed to the rest of the building. Under Snøhetta's scheme, the two elevator bays will be rotated 90 degrees, one to the north and one to the south, creating a passageway to the rear garden. The rear wall will only be gaining

a window; a separate side door will allow access to the garden through the lobby.

The Madison Avenue-facing loggias, originally public arcades that were enclosed in 2002 when Sony owned the building, will also be getting an overhaul. Under the new scheme, the gridded windows will instead be replaced with a system that uses 12-foot-tall panes.

Overall, Snøhetta claims that its updated plan would only touch six percent of the building's facade. The new scheme was approved on December 4 at a Manhattan Community Board 5 Landmarks Committee meeting. Now it's in the Landmarks Preservation Commission's hands. **JH**



COURTESY SNØHETTA

Front page: The revised facade. Above: The proposed atrium would replace the 1994 enclosure.

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16 Timber Feature

Mass timber is gaining steam and is set for another major boost, as recently passed code updates will allow structural timber up to 18 stories high. To keep up with the industry and its quickly changing landscape, we have mapped out the major players (page 18) and the big issues surrounding wood innovation, from completed projects to boundary-pushing proposals (page 22) that could shape the future of wood construction.

It's all, wood, man

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Codes-Are-A-Changin'

International Code Council moves to embrace taller mass timber buildings.

After over two years of testing and several rounds of deliberation, the International Code Council (ICC) has settled on a batch of modest code changes that will embrace tall timber buildings in the United States.

The changes are due to take effect in 2021, after approval from ICC's Ad Hoc Committee on Tall Wood Buildings (TWB) in December 2018. The 18-member TWB group is made up of fire, concrete, steel, gypsum, and wood specialists as well as architects, engineers, and code officials from around the country who have been working to craft the new codes and prove that tall wood structures can be built safely. Current regulations allow mass timber construction for only six-story structures and under, although a handful of taller mass timber buildings have been built internationally, including the 18-story Brock Commons Tallwood House in Vancouver, Canada, among others.

The officials conducted research and performed multiple fire tests—including controlled burns of five two-story CLT structures at the National Bureau of Alcohol, Tobacco, Firearms, and Explosives in Baltimore—to

back the safety of their proposed changes.

The new regulations, aside from officially defining mass timber construction types and specifying minimum dimensions for timber elements, will also include three additional construction types in the "heavy timber" (Type IV) category—dubbed "IVA," "IVB," and "IVC"—that establish building codes for 18-, 12-, and 9-story mass timber buildings, respectively. In 2018, Washington State became took the lead by incorporating tall timber codes into its building codes.

Seattle-based architect and mass timber specialist Susan Jones of atelierjones spent two and a half years crafting these new standards with the TWB committee. As an architect who has spent ample time proving the safety of mass timber construction on a project-by-project basis, Jones welcomes the new regulations as a potential jumping-off point that might allow for even taller timber structures in the future. "The codes are solid and very conservative, given the performance the material showed," Jones said. "But we had to start somewhere." **AP**



ANDREW POGUE

New International Code Council tall timber building standards could streamline the approval of projects that once required extensive testing and review, like the recently completed Carbon12 tower in Portland, Oregon, by developer Kaiser Group and Path Architecture.

(Mass)ive Growth

As the U.S. mass timber industry matures, it also branches out.

President Donald Trump's tariffs, enacted in November 2017, have not yet made a significant impact on the U.S. mass timber industry. But if Trump chooses to take more aggressive action in the next two years of his administration, this could dramatically change.

This urgency, coupled with the recent global obsession with building tall wood structures, newly motivates American wood manufacturers to become independent of foreign suppliers. This would entail American manufacturers catching up in machine technology and production capacity to bolster domestic trade and support innovative architecture sourced from home.

What's clear is that U.S. demand for wood buildings is there. The country's largest producer of cross-laminated timber (CLT), SmartLam, has experienced such rapid growth since opening six years ago that it is building a new headquarters in Columbia Falls, Montana, and planning a second facility in Maine to supply what the industry thinks will be an influx of midrise construction in New York and other cities along the Eastern seaboard.

"The expansion here is simply driven by need," said SmartLam CEO Casey Malmquist. "There's always been a grassroots support for CLT in the U.S. and a recently increased interest in research and testing. But now we're no longer speculating about whether it will work—it's going mainstream."

While similar Pacific Northwest companies like DR Johnson and Kattera, as well as firms such as LEVER Architecture and Michael Green Architecture, have long led the field, production is growing in uncharted territories. South Carolina-based LignaTerra is adding another plant in Maine, while Canadian leaders like Nordic Structures in Montreal and Structure Fusion in Québec City, which already supplied CLT to projects across the country, are now focusing more attention on supplying the eastern U.S. market. Production is even swelling in the South with Texas CLT LLC, which is reopening a mill in southwest Arkansas.

But pioneering European companies, which have historically dominated the market and supplied American developers, are now putting down roots in the U.S. Austrian giant KLH is partnering with International Beams' new factory in Dothan, Alabama, by supplying it with glulam blanks. Having opened this past September, it is the first plant east of the Rocky Mountains to produce CLT in the country and will primarily utilize the unique Southern Yellow Pine native to the region.

These investments show that the race to build such production facilities is vital to the U.S. market becoming competitive with other countries. But many experts say we need to increase cultural acceptance of mass timber as well as get investors on board before the industry starts churning up a sizable profit.

"The real strategy is that the big manufacturers in Europe are focused on making franchises here," said Alan Organschi, principal of Gray Organschi Architecture in New Haven, Connecticut. "They can produce higher quality products cheaper, even with overseas shipping, than manufacturers can in the U.S. and Canada."

Organschi's firm has been at the forefront of timber innovation for 20 years. He is confident the market is growing and will prove that by designing 6- to 14-story buildings, the sweet spot for mass timber construction. Dominique Briand, general manager of Canadian structural engineering firm Structure Fusion, is also optimistic about North America's future, but feels certain that product-specific issues still need to be addressed before wood can match the quality of other structural materials like steel and concrete.

"The problem is the tools are not there," Briand said. "There's not enough manpower or knowledge to make or sell mass timber in the United States. Plus it's a disorganized market, which creates a big gap between the product and the project."

Briand believes that as long as timber is trendy, it will take young U.S.-based companies about five to ten more years to be competitive with Europe. In the meantime, architects, engineers, and educators are working to imagine groundbreaking designs at modest scales to ramp up domestic interest and encourage policy changes.

Many U.S. states are using financial incentives to entice manufacturers to locate to their respective regions. In Maine, both the state and federal governments have provided funding for the University of Maine's extensive research to advance timber assemblies. Russell Edgar of the university's Advanced Structures & Composites Center says the ultimate goal of this work is to organize the state's supply chain in order to make Maine viable for these companies.

"People are talking a lot about South Carolina and Georgia since they grow trees like corn at such rapid rates," he said. "But in Maine, we have proximity to these huge markets in New York and Boston, so we're busy trying to find ways to get these companies here now."

Sourcing timber products within 250 miles of a project is a huge advantage to practicing sustainability and boosting regional economies—not to mention a reason for rarely crossing borders for building materials. But a little competition is healthy, especially for lumber producers who want to bid in a fair marketplace.

"The more people there are, the better it will be," said Briand. "I only worry that because we're such a fast-evolving industry, a lot of companies will build huge facilities and focus solely on making and selling products. It's not just about the products; it's about creating strong business plans so the investment pays off." **SF**

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18 Timber Feature

The timber industry has long thrived on its small-scale, local nature due to the sourcing of its materials as well as the limits on project size set by the building code. With this has come a good deal of fragmentation and disorganization, so we decided to map out the different schools, organizations, and manufacturers that are leading the way in the research and development of mass timber across the United States and Canada.

Schools

1 Yale University New Haven, Connecticut

In 2018, for the Yale School of Architecture's long-running Jim Vlock First Year Building Project, students built a multifamily home using cross-laminated timber (CLT) panels—a first for the program. Further, the university's School of Architecture offers a joint degree with its School of Forestry & Environmental Studies that focuses on sustainable architecture alongside ecology and policy. The two schools have also partnered with local architecture firm Gray Organschi to support the Timber City research initiative, which is funded by the United States Department of Agriculture (USDA).

2 Washington State University Pullman, Washington

At Washington State University's Composite Materials & Engineering Center, students get hands-on experience with the design, fabrication, and construction of CLT panels. The Center has partnered with construction company Kattera to design and test mass timber systems and create regulations for their use.

3 Virginia Tech Blacksburg, Virginia

Researchers at Virginia Tech have been experimenting with mass timber for more than a decade. In 2018, faculty and students at the School of Architecture + Design designed and plan to build a CLT train-watching tower as part of the city's tourism development plan. Their project was recognized by the AIA Blue Ridge Design Awards.

4 Colorado School of Mines Golden, Colorado

Working in collaboration with industry partners and other schools mentioned on this list, researchers at the Colorado School of Mines are using a \$1.5 million National Science Foundation grant to develop mass timber structures designed for seismic performance in earthquake-prone regions. With the goal of proving that sustainable timber buildings are just as resilient and safe as those built with more conventional materials, the group has successfully tested a two-story building on UCSD's "shake table," and plans to test a full-scale 10-story structure soon.

5 Oregon State University Corvallis, Oregon

Oregon State University's College of Forestry is home to the Tallwood Design Institute, a collaboration with the university's College of Engineering and the University of Oregon's College of Design. The College of Forestry was also recently awarded a USDA-funded grant to study

the effects of moisture on mass timber structures and, to unite pedagogy and place, will be opening the CLT-built Oregon Forest Science Complex in fall 2019.

6 University of Arkansas Fayetteville, Arkansas

The Fay Jones School of Architecture and Design at the University of Arkansas will have a new mass timber dormitory by Boston-based architect Leers Weinzapfel Associates. Peter MacKeith, dean of the program, is spearheading the Wood Lab, which specializes in building and design with wood. It is part of the school's FAY Fabrication Laboratories.

7 Clemson University Clemson, South Carolina

Clemson University's multidisciplinary Wood Utilization + Design Institute was created to leverage the school's programs in architecture, engineering, forestry, and construction to design and advocate for wood structures. The university's School of Architecture is also developing an ongoing research project—the sim[PLY] Framing System—an innovative wood construction system all their own.

8 University of Maine Orono, Maine

The University of Maine is working with its home state to revitalize old industrial mills by attracting a new mass timber industry. Their efforts include the construction of the Maine Mass Timber Commercialization Center, funded in part by a federal grant, as well as extensive research by students at the university's Advanced Structures & Composites Center, which recently tested a hybrid CLT beam made from two native tree species.

9 University of British Columbia Vancouver, Canada

The University of British Columbia's campus is home to one of the tallest mass timber buildings in the world, the 18-story Brock Commons Tallwood House. Part of the country's Tall Wood Building Demonstration Initiative, the Tallwood House is a living lab where researchers will study the long-term performance of mass timber structures.

10 Laurentian University Greater Sudbury, Canada

In 2018, Laurentian University's McEwen School of Architecture completed a new building with an entire wing constructed of cross-laminated timber. The school, founded in 2013, places an emphasis on both timber architectural design and hands-on knowledge of wood craftsmanship. The school will be hosting the first International Wood Educators Forum in September 2019.

11 University of Toronto Toronto

The University of Toronto is currently building a Patkau Architects and MacLennan Jaunkalns Miller Architect's designed timber-and-concrete hybrid tower. The tower, partially funded by Canada's Tall Wood Building Demonstration Initiative, will reach a height of 14-stories. Once completed, the building will feature a research laboratory for Canada's Mass Timber Institute.

12 George Brown College Toronto

The Arbour, a new 14-story academic building on George Brown College's campus, will be constructed of mass timber sourced within Canada. The building will house the Tall Wood Research Institute, a forum for students and faculty to research and develop ideas related to mass timber construction. The school offers undergraduate and graduate certificate levels in construction management; with research covering wood technology, and green building, among other topics.

13 Lakehead University Thunder Bay, Canada

A department within Lakehead University's Faculty of Natural Resources Management, the school's Forestry program focuses on the technology behind contemporary forest management. Along with research related to the technological tools of forest management, ranging from GIS to satellite imagery. Currently, the university is collaborating with the Province of Ontario by leading an intensive tree mapping of the region's woodlands.

14 University of Ottawa Ottawa

The University of Ottawa's Faculty of Engineering provides a fourth year undergraduate class focusing on timber design. In total, over 1,000 alumni have received training in individual aspects of timber construction.

15 University of Massachusetts Amherst Amherst, Massachusetts

Within the Building and Construction Technology department at the University of Massachusetts Amherst, a special division researches the design and use of hybrid wood-concrete composite systems. Fittingly, its research is conducted inside the largest CLT academic building in the United States by Leers Weinzapfel Associates.

Organizations

1 Forest Business Network (FBN) Missoula, Montana

The Forest Business Network (FBN) helps businesses that manufacture, design, and sell products made from both hard and soft wood materials. FBN lends its expertise in "underutilized-timber and woody timber biomass" with its timber consulting services, which include business assistance, grants, and custom reports (including white papers).

2 American Forest and Paper Association (AF&PA) Washington, D.C.

The AF&PA helps advance public policies and funds research to support the production of wood products in the U.S.—particularly pulp, paper, and packaging. It also supports wood manufacturing across the globe, and works to promote sustainable growth of the U.S. forestry industry.

3 Softwood Lumber Board (SLB) Washington, D.C.

Established to promote the use of softwood

lumber in U.S. construction projects, the SLB funds several programs, organizations, and initiatives, including the U.S. Tall Wood Building Prize Competition, which is organized by the USDA, as well as many of the other organizations mentioned on this list.

4 American Wood Council Leesburg, Virginia

The American Wood Council (AWC) is the leading voice for America's wood products industry, representing more than 85 percent of the North American structural wood products industry. In addition to advocating on public policies that benefit the wood industry, and for sustainable practices and appropriate environmental regulation, AWC has had the lead role in advancing opportunities for wood products and mass timber in codes and regulations. AWC also provides ANSI-accredited design specifications along with education and training on proper wood use and design in construction. (Partially funded by the Softwood Lumber Board.)

5 WoodWorks: Wood Product Council Washington, D.C.

WoodWorks is dedicated to providing architecture, engineering, and construction professionals with free technical support and assistance in designing and constructing commercial and multifamily wood buildings, including mass timber structures. WoodWorks also helps educate professionals about wood construction through symposiums, workshops, lunch-and-learns, and other events. (Partially funded by the Softwood Lumber Board.)

6 Think Wood Washington, D.C.

Think Wood's objectives are outreach and education. In addition to its online research library, which includes continuing education units about tall wood and mass timber, the organization identifies and publicizes projects and professionals that are using North American softwood products in exciting and innovative ways.

7 United States Forest Service Washington, D.C.

As part of its mission to manage and protect national forests and grasslands, the U.S. Forest Service works with public and private agencies to build markets for wood products that promote sustainable growth. One such product is CLT, which can be produced from dead and dying trees, the harvesting of which could help control the spread of forest fires. (Partially funded by the Softwood Lumber Board.)

8 Canadian Wood Council Ottawa

Much like its American counterpart, the Canadian Wood Council represents wood product manufacturers, develops design and technical standards, and works to ensure their resources are available to professional and academic communities.

9 Wood WORKS! Ottawa

Wood WORKS! was created by the Canadian Wood Council to increase the use of wood construction for midrise and tall buildings in Canada. Wood WORKS! is also a resource for education, training, and the technical issues of building tall with timber.

10 APA—The Engineered Wood Association Tacoma, Washington

This nonprofit trade association pushes the structural wood industry forward by representing and regulating engineered wood manufacturers in North America, and by promoting innovative solutions and improved practices.

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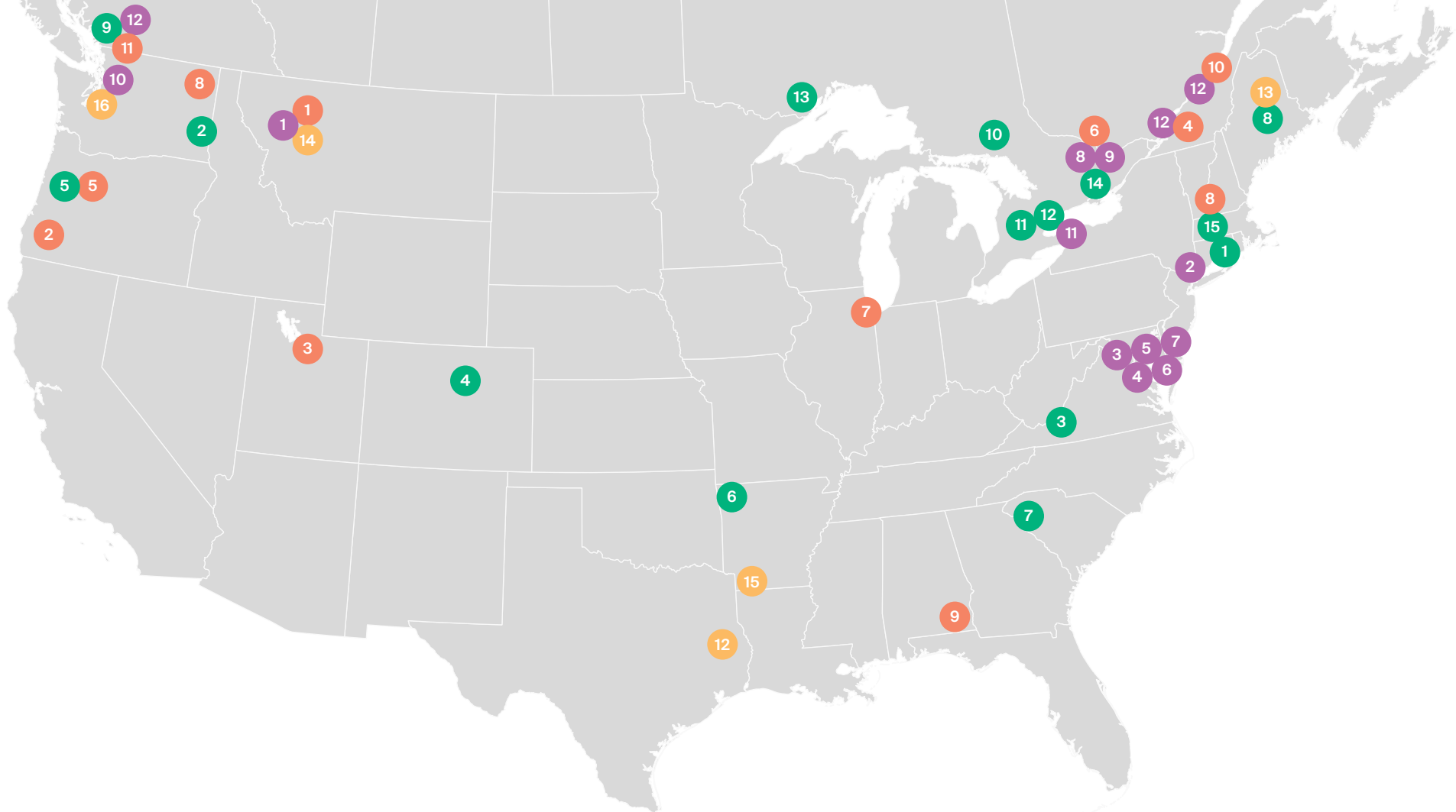


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19 Mapping the Industry



11 Mass Timber Institute Toronto

The Mass Timber Institute is a Canadian consortium of public and private institutions, mainly universities. The MTI researches, develops, and promotes high-rise wood construction across the country. Current projects include the tallest concrete-and-timber hybrid in North America being built by the University of Toronto, and George Brown College's 14-story cross-laminated timber Arbour.

12 FP Innovations Quebec City, Montreal, Vancouver

FP Innovations, located in Quebec City, Montreal, and Vancouver, Canada, is a not-for-profit research institute covering the entire gamut of the industry, from forestry management to construction products. Currently, FP Innovations has an entire team devoted to advanced timber building systems, finding acoustical, structural performance, and efficiency solutions for projects of every scale.

Manufacturers

1 SmartLam Columbia Falls, Montana (CLT panels)

SmartLam produces CLT panels for floors, walls, roofs, and elevator shafts, and supports its products with design, engineering, and consulting services.

2 DR Johnson Riddle, Oregon (CLT panels, glulam beams)

DR Johnson was the first company in the U.S. to obtain ANSI certification to manufacture CLT panels. Its affiliate company, Riddle Laminators, has been making glulam beams from Douglas fir and Alaskan Yellow Cedar for over 50 years.

3 Euclid Timber Frames Charleston, Utah (ICLT panels)

Euclid manufactures interlocking cross laminated timber (ICLT) for walls and roofs. Unlike CLT, ICLT panels are produced without the use of fasteners or adhesives, relying instead on tongue-and-groove and dovetail joints.

4 Nordic Structures Montreal, Canada (I-joists, CLT panels, glulam beams)

Nordic Structures manufactures sustainably produced architecture and industrial grade CLT panels, I-joists, and glulam beams.

5 Freres Lumber Co. Lyons, Oregon (mass plywood panels)

Freres Lumber's mass plywood panels (MPPs) are a composite, veneer based engineered wood product that can be produced using 20 percent less wood than CLT panels.

6 Element5 Ripon, Canada (CLT, NLT, LVL, glulam beams)

Element5 produces the widest format panels of any CLT plant in North America. Its macro CLT product is 12 feet wide by 34 feet long and ranges from 2 to 16 feet thick. It also makes a thin panel product called nano.CLT and the curved free.CLT.

7 Sterling Lumber Company Phoenix, Illinois (CLT timber and CLT mats)

Sterling is a 70-year-old family company that manufactures cut-to-length lagging lumber, industrial lumber for transportation project shielding, and pallets and skids for shipping and unloading. Specializing in CLT, Sterling also offers design and build services for custom work.

8 Bensonwood Walpole, New Hampshire (CLT, NLT, glulam, fabrication)

Bensonwood collaborates with architects and engineers to build small and large projects in mass timber and CLT from suppliers like Nordic Structures. A special division uses off-site manufacturing to build timber frames with CNC milling machines that are assembled by hand.

9 International Beams Dothan, Alabama (CLT panels, glulam beams)

Florida-based International Beams recently opened its third factory in North America where it's producing CLT panels and glulam beams using Southern Pine lumber. Home to the company's new IB X-LAM USA label, it's the first site in the Eastern U.S. to manufacture CLT.

10 Structure Fusion Quebec City (glulam, hybrid timber beams, fabrication)

Structure Fusion is a Canadian company that specializes in intelligent wood construction. As structural engineers, they partner with Simonin SAS to design and manufacture adapted wood products, including their patented Sapisol® and Résix® systems.

11 StructureCraft Abbotsford, Canada (CLT, DLT, NLT, glulam beams, LVL, LSL, PSL)

StructureCraft is an engineer-led construction firm that creates a multitude of mass timber products including its signature DowelLam (DLT), the first all-wood panel manufactured without glue or nails in North America.

Factories announced/under construction

12 Sterling Lumber Company Lufkin, Texas (CLT mats)

As America's largest CLT mat manufacturer, Sterling is opening a massive new facility in Lufkin in 2019, where it will continue to make its signature TerraLam mat.

13 LignaTerra Maine Millinocket, Maine (CLT panels, glulam beams)

LignaTerra Maine is LignaTerra's northeastern offshoot, where it will soon become the state's first CLT and glulam manufacturer. It plans to open its 300,000-square-foot facility in 2019.

14 SmartLam Flathead Valley, Montana, and TBD, Maine (CLT)

SmartLam plans to quadruple production by moving its operations to the former Weyerhaeuser lumber mill in Flathead Valley. It also plans to open a factory in Maine, becoming the second producer of CLT there after LignaTerra.

15 Texas CLT LLC Magnolia, Arkansas (CLT panels)

Texas CLT LLC is an investor group that just reopened the defunct Arkansas Laminating mill in Magnolia, where it will begin producing CLT products made from southern pine and Douglas fir this month.

16 Kattera Spokane, Washington (CLT, glulam beams)

Northern California-based Kattera is opening a 250,000-square-foot mass timber manufacturing facility this year. Its products are developed and tested in collaboration with the Washington State University Composite Materials & Engineering Center.

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20 Timber Feature

Shigeru Ban

Known for experimenting with paper tubes and bamboo, the firm is now establishing itself as a leader in mass timber.



La Seine Musicale, a performing arts center in the Paris area, is wrapped in a timber and glass skin.

Histories of innovation in modern building materials typically recount how muscular substances are sculpted in the hands of masters: Eiffel and his iron, Corb and his concrete, Gehry and his shiny titanium scales. Shigeru Ban Architects (SBA), on the other hand, has sought out some of the less heroic products of our age, sometimes literally picking through the trash in search of the next big thing in structural solutions; the firm works with humble materials, but its final creations are no less accomplished for it.

Wood is one of these seemingly humdrum materials that SBA has long played with, but in the past decade or so, it has skillfully taken advantage of the material's flexibility. SBA is quite literally taking timber structures to new heights, and is currently at work on both the tallest hybrid timber structure and the largest mass timber development in the world. With work in three continents, the firm has pushed the possibilities of what glulam, cross-laminated timber, and other wood products can do—both formally and functionally—proving to skeptical local administrators that timber is a material that can meet and even exceed their building codes.

It's not every firm that has clients with the appetite to replicate some of SBA's more adventurous projects, but still, the firm has some basic advice for working with timber: Dean Maltz, the partner in charge of SBA's New York office, said that "timber forces you to collaborate with trades closely," which, he stressed, is both a challenge and an opportunity. Because mass timber products are prefabricated off-site and still something of an anomaly in much of the United States, it is crucial from the beginning of the design process to work with experienced fabricators. That early investment in collaboration can pay off later, though—Maltz claimed that even the firm's more complex timber designs were built much faster than comparable steel or concrete structures because timber components can be prefabricated with incredible dimensional precision.

The firm's use of timber is not arbitrary—rather, it uses wood tactically, albeit sometimes extravagantly, to meet aesthetic and practical goals. While international building codes can be something of a jungle when it comes to mass timber, SBA is blazing trails through the wilderness. **JM**

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21 Studio Visit



1. The Aspen Art Museum's timber roof features rounded members that connect with minimal hardware. 2. Kentucky Owl Park blends bold geometry with historically inspired detailing.

3. The Swatch buildings compose the world's largest timber project. 4. For a new hotel in Japan, SBA created a lightweight folded timber roof.

1 Aspen Art Museum

The Aspen Art Museum, which is essentially a big-box building, doesn't go wild with formal gyrations. Instead, for this low-key Rocky Mountain ski town, SBA let the structure steal the show. A basket-woven wooden screen dapples circulation spaces along the perimeter with Colorado sun, and the firm's trademark paper tubes make an appearance as playful interior walls and seating. But the firm's ingenuity really shines in the massive exposed timber roof truss. The space frame-like system is cleverly composed of interlocking planar timber members that curve gently at corners, a detail that allows components to be joined by a single fastener. The resulting mesh allows light to filter down to the spaces below while bolstering the roof against the winter snowfall.

2 Kentucky Owl Park

SBA's most recent commission in the U.S. is for a 420-acre distillery and recreational campus themed after Kentucky Owl bourbon. Like much of the firm's work, the park's design blends bold geometry with nods to historical motifs and materials: While the trio of identically sized pyramids at the center of the complex contrasts with the surrounding big sky bluegrass landscape, these exposed timber structures are redolent of 19th-century metalwork, the kind that might have enlivened the original Kentucky Owl distillery. Further, wood columns will be girded by metal loops as in traditional barrel construction, and trusses webbed with curves and loops will add a stylized flourish.

3 Swatch Headquarters and Omega Facilities

SBA's forthcoming trio of Swiss buildings for a pair of watch manufacturers (sister companies under the Swatch Group) are a study in contrasts. The new production facilities for Omega are rectilinear and formal, structured by a precisely gridded matrix of exposed engineered timber. The new Swatch headquarters, however, snakes along the Suze River under an arched wood canopy that is punctuated by periodic distortions before leaping across a street to connect to the joint Swatch-Omega Museum, also designed by SBA. Upon its completion later this year, the complex will be the largest timber development in the world.

4 Shonai Hotel Suiden Terrasse

No single SBA project displays the versatility and formal possibilities of hybrid timber structures as much as the Shonai Hotel Suiden Terrasse, completed in September 2018 in northern Japan. The hotel's spa sits under a low dome supported by timber beams spectacularly interwoven in the same pattern used in La Seine Musicale, while the hotel itself showcases a sober mix of timber, concrete, and brick components. But in a shared central building, a long, open space is covered with a thin pleated wood roof that floats as though it were nothing more than a piece of folded paper.

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22 Timber Feature

As mass timber becomes more viable, it is being envisioned for a wider range of project types and structures. Here are three designs from around the world that signal what wood's future could look like.

Quayside

Can Sidewalk Labs realize a totally timber smart city?

Can one of the world's oldest building materials form the foundation of a sensor-integrated "smart" neighborhood? Alphabet subsidiary Sidewalk Labs is making a go of it on the Toronto waterfront, and has enlisted wood advocates and Katerra partner Michael Green Architecture (MGA) to design flexible, mixed-use timber buildings for its 3-million-square-foot Quayside project.

If the 12-acre site is developed as planned, it would become the largest timber project in the world.

The ground-up development in Quayside is leaning on mass timber because Sidewalk Labs has touted the material as sustainable and as tough as steel, as well as because cross-laminated timber (CLT) panels work well in prefabricated structures. MGA has designed a kit-of-parts that can be used for buildings of every scale, and Sidewalk Labs is reportedly looking at constructing a collection of 12 mass timber towers, with the tallest topping out at 30 stories.

Sidewalk Labs is aiming to build within Quayside's existing zoning, which would entail 90 percent residential development.

The neighborhood will encourage street-level interaction through a combination of

design and environmental control. MGA has anchored the base of each building with a "stoa," or an open-air covered walkway supported by a colonnade (in this case, V-shaped heavy timber columns) that will contain retail and communal gathering places.

Of course, Toronto's winters are especially punishing, and doubly so on the waterfront. Sidewalk Labs tapped the architecture studio PARTISANS to design an "outdoor comfort toolkit," including a computer-controlled retractable canopy that will clad the stoas. The umbrella-like structures will block out wind, rain, and snow while heated pavers will keep snow off of the streets; the company claims that both advancements will double the amount of time residents will be able to spend outdoors.

Beyer Blinder Belle is responsible for the site's master plan and Toronto-based PUBLIC WORK will be designing the landscape. Sidewalk Labs also reached out to the Ontario-based gh3*, Toronto's Teeple Architects, and Toronto-based Dubbeldam Architecture + Design to create residential unit concepts. Sidewalk Labs will submit its final Master Innovation and Development Plan for public comment sometime this spring.

JH



From top: A diagram of the 12 timber towers and waterfront access that Sidewalk Labs is proposing. **Bottom:** The base of each building will be fringed with a smart, weather-responsive canopy. In this rendering, the tower is set back and the base topped by a public rooftop garden.

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23 Future Case Studies

LongPoint Bridge

CRÈME's floating timber bridge offers a pedestrian-friendly connector between Brooklyn and Queens.

Currently the only link between the rapidly developing neighborhoods of Long Island City, Queens, and Greenpoint, Brooklyn, is the Pulaski Bridge, a six-lane drawbridge with a narrow pathway where pedestrians and bikers jostle for space. Brooklyn-based CRÈME/Jun Aizaki Architecture & Design wants to change that by proposing the LongPoint Bridge, a 250-foot-long crossing dedicated to foot and bike traffic.

The bridge is distinguished from its counterparts across the city for its lightweight, floating timber construction. It is anchored on either end by a concrete and steel mast embedded into the waterbed of Newtown Creek (the East River canal that divides Queens and Brooklyn). Glulam beams joined by galvanized steel braces and pins rise in two trussed peaks of armature around the nearly 50-foot-tall masts. The structure is a nod to the area's industrial past and present while also referencing the iconic profiles of other bridges in the city. Its height above the canal allows smaller vessels to pass underneath, but for larger boats, the bridge pivots open in the middle, with each section moving on propeller-driven pontoons. This floating feature also allows the bridge to rise and fall with the tides.

According to Jun Aizaki, the firm's founder and principal, the bridge's design and timber composition allows it to be assembled off-site and installed quickly and inexpensively; in the long term, it will require only minimal repairs. CRÈME also proposes public parks and loading docks to flank the bridge on both ends, along with a pedestrian crossing over the Long Island Railroad commuter rails just beyond the canal. Together with the timber bridge, the pathway would connect commuters to the G and 7 trains on either side.

With the impending L train shutdown in 2019 and the predicted growth of Long Island City as it hosts Amazon's HQ2, the timing of a quickly constructed, relatively affordable bridge seems ideal. Aizaki and his team, which includes a community organizer, are busy raising support and funds through meetings with public officials and local community members. For Aizaki, the bridge is intended as "a grassroots, rather than developer-initiated, project," which he hopes will "be a symbol of something the community can be proud of."

Sukjong Hong



COURTESY CRÈME/JUN AIZAKI ARCHITECTURE & DESIGN



The timber bridge proposed by CRÈME/Jun Aizaki Architecture & Design is intended to be lightweight and relatively inexpensive, and pivots open in the middle to allow larger vessels to pass through.

National Stadium

Japan's timber temple to sports is climbing right on time for the 2020 Olympics.

Kengo Kuma's \$1.4 billion National Stadium is over 25 percent complete and should open in November 2019 for six months of testing before the Tokyo 2020 Summer Olympics kickoff. The three-tiered stadium is expected to seat 68,000 during the games and 80,000 when it's converted into a home field for the Japan National Football Team.

Utilizing a half-covered roof and an abundance of overflowing greenery, Kuma's flat structure is a far cry from the yonic stadium designed by Zaha Hadid Architects, which was originally chosen in 2015. The distinct layers and open-air columns of Kuma's stadium are references to the 1,300-year-old Gojunoto pagoda at Horyuji Temple in Ikaruga, the oldest timber building in the world.

Kuma has pledged that the stadium will source over 70,000 cubic feet of larch and

cedar wood from nearly all of Japan's 47 prefectures, with an emphasis on areas hit hardest by the 2011 earthquake and tsunami.

The steel roof over the ovoid stadium will be supported by a lattice of exposed timber beams and joists. Kuma has rimmed the track and field building with open-air loggias and clad the edges in a screen of vertical wood, creating a breezy, naturalistic setting that's perfect for the summer games. It's not all smooth sailing for the Tokyo 2020 commission, however, as the U.S.-based Rainforest Action Network has accused the group of sourcing endangered tropical timber from Malaysia and Indonesia to build the 2020 stadiums. A Tokyo 2020 spokesman has denied the claims, but the commission is working to further tighten up its sourcing standards regardless. **JH**



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Top: The center of the stadium has been left open both to allow in natural light and to create a chimney effect where hot air can escape. **Middle and Above:** The stadium is ringed with breezy colonnades, a reference to Japan's historic timber pagodas.

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25

Timberrr!

This year we bring you the very first special section featuring timber. With a focus on interior surfaces, decking, cladding, and mass timber, the product pages feature tried-and-true timber manufacturing authorities as well as new and creative solutions that debuted at the International Timber Conference, the International Builder's Show, and Greenbuild. The accompanying case studies demonstrate how mass timber is being used in new feats of engineering and environmental sustainability, from the world's tallest mass timber structure to a double-cantilevered GLT canopy to a carbon-zero retrofit of a century-old timber-framed home.



Brock Commons Vancouver, Canada

Design Architect: Acton Ostry Architects
Construction: Urban One Builders
Structural Engineer: Structurlam
Mass timber fabricator: Centura Building Systems
Facade fabricator and installer: Phoenix Glass
Punched Window Manufacturer: Phoenix Glass
Custom Interior Millwork: JSV Architectural Veneering & Millwork
Drop Ceiling Fabricator: Linea Ceiling & Wall Systems
Door Manufacturer: McGregor & Thompson

When it came time for Acton Ostry Architects to select a manufacturer for the mass timber components of the 18-story Brock Commons Tallwood House at the University of British Columbia in Vancouver, Canada, Structurlam stood out.

"Experience, qualifications, supply, schedule, cost" all worked to Structurlam's benefit, according to Russell Acton, principal at Acton Ostry. Acton explained that along with supplying mass wood structural components, Structurlam provided end-to-end oversight and support by "[collaborating] with the structural engineer, construction manager, and mass wood erector to refine the design and optimize cost, quality, and constructibility considerations for the mass wood components."

As a result of Structurlam's comprehensive

approach, the hybrid concrete-and-mass-timber structure building was erected in record time: just 66 days. The tower features 1,302 10-inch-by-10-inch Douglas Fir Glulam columns and 464 Douglas fir CLT panels of varying thicknesses, all fabricated by Structurlam.

But don't think that all that wood is going to be hidden behind the project's fire-resistant Type X gypsum wallboards. Instead, wood finishes cover the building inside and out. That includes the dormitory's shared spaces, where JSV Architectural Veneering & Millwork has crafted maple veneer panels and wood grilles for the project. In other areas, 24-inch-by-24-inch albus wood ceiling panels by Linea Ceiling provide a "decorative and functional" alternative to conventional acoustic drop-down ceilings. **Antonio Pacheco**



MICHAEL ELKAN

The 18-story Brock Commons tower is a monument to mass timber, containing 464 CLT panels, including repeating facade panels manufactured by Centura Building Systems and Phoenix Glass.



The project features custom maple veneer paneling by JSV Architectural Veneering & Millwork as well as slatted albus wood ceiling panels by Linea Ceiling & Wall Systems.

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Photo: Corey Gaffer
courtesy Perkins + Will

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T3 Minneapolis
MGA | Michael Green Architecture, DLR Group

photo Corey Gaffer, courtesy Perkins + Will

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- Energy-efficient detailing
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Wood That Does You Good

Design facades that can endure the elements and look better with time. These exterior wooden claddings offer sustainability, durability, and a touch of charm.
By Gabrielle Golenda



1 Thermowood Lunawood

Made by glue-laminating panels of Scandinavian pine together, Lunawood's cladding boards are made in a thermal manufacturing process where wood is processed using only heat and steam, a technique nearly as natural as the wood itself. Available in planks with horizontal or vertical textures, the natural brown color of the wood can be retained with surface finish or left untreated to patina. lunawood.com

2 Scots Pine Kebony

Ideal for both cladding and decking, Kebony's planks are treated with a biobased coating that makes them last much longer than typical tropical hardwood. Over time, the rich, chocolate-colored stain will weather in sun and rain and develop a silvery-gray patina. kebony.com

3 WOODWORKS Linear Solid Wood Panels Exterior Armstrong Ceiling & Wall Solutions

Available in six custom finishes and stains, WOODWORKS Linear Solid Wood Panels are made of western hemlock. The 12" x 96" linear panels attach to Armstrong's Prelude EL Exterior system via screw fasteners. Perfect for creating seamless indoor to outdoor transitions, the exterior panels are designed to withstand outdoor elements and make great overhang and soffit applications. armstrongceilings.com

4 Exterior Wood Cladding Accoya

Made of durable tropical woods, Exterior Wood Cladding is optimal for both large scale commercial projects and detail-oriented residential designs. Linked together by joints, Accoya's external wood siding is extremely durable, and it is available custom profiled to fit specific building design and specifications. accoya.com

5 Alu Siding Technowood

Pairing the charming aesthetic qualities of wood with the strength and resilience of aluminum, Technowood's aluminum panels are laminated with natural wood veneers. Using less wood than typical siding applications, AluSiding is environmentally sustainable, lightweight, and recyclable. technowood.com.tr

6 Nature - Pure FunderMax

Characterized by the clearly defined lines naturally occurring in solid wood, Pure is FunderMax's new color collection in its Nature collection wood cladding. Stark yet soft in its straight-forward design, Pure is offered in four thicknesses and six finishes. fundermax.at

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courtesy Perkins + Will

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30 Case Study

Timber Waves Sacramento, California

Architect:	!melk
Structural Engineer:	Magnusson Klemencic Associates
Architect of Record:	BIMtech
General Contractor:	Brown Construction
Shingle Supplier:	Gudgel Yancey Roofing
Glulam supplier:	Wood Tech Services
Glulam wood type:	Douglas fir and Larch woods
Insulation:	InterWrap Roofing Products, Carlisle Residential

The Barn, designed by New York-based landscape architecture practice !melk, is a parametrically designed wooden canopy constructed in June 2016 with an unfinished interior to be filled in by the occupants (a restaurant and beer hall have occupied the space a year later). Located in the city of West Sacramento, the project is the linchpin of the larger 178-acre Bridge District developed by Fulcrum Property.

The undulating building rises from two concrete-and-steel "pods" occupying 900 square feet and 2,300 square feet, respectively. Each pod sits atop a 3-foot-thick concrete foundation that extends 6 feet outward from the circular glass curtain wall. A colonnade of concrete-filled, 14-foot-tall steel structural sections ring each pod, with each column strategically spaced to support the 16-ton wooden canopy above.

Rising up to 20 feet from these two structural foundations is the canopy, a double-cantilevered superstructure built of glue-laminated

timber supplied by Oregon's Wood Tech Services. According to !melk director Ian Hampson, a system of custom-designed steel "buckets" and timber rivets are used "to tie together the intersections of the glulam beams and help to brace for lateral load and torquing. Hampson noted that the bucket plates both bear and rest on the glulam trusses depending on their location, and "allow for the attachment of a structural lattice, which makes each glulam truss function similar to the trestle of a bridge."

The secondary system, protruding from the superstructure's glulam trusses and brackets, is composed of standard 4x4 and 6x6 wood beams that are topped with nearly inch-thick plywood sheets insulated with synthetic polymer roofing. Over 7,000 Class A cedar shingles, produced by Sacramento's Gudgel Yancey Roofing, cascade across the roofline and soffits and toward the base of each podium. **Matthew Marani**



COURTESY CHAD DAVIES/!MELK

The Barn is an undulating wooden canopy, rising from a concrete-and-steel foundation, designed by New York-based firm !melk.

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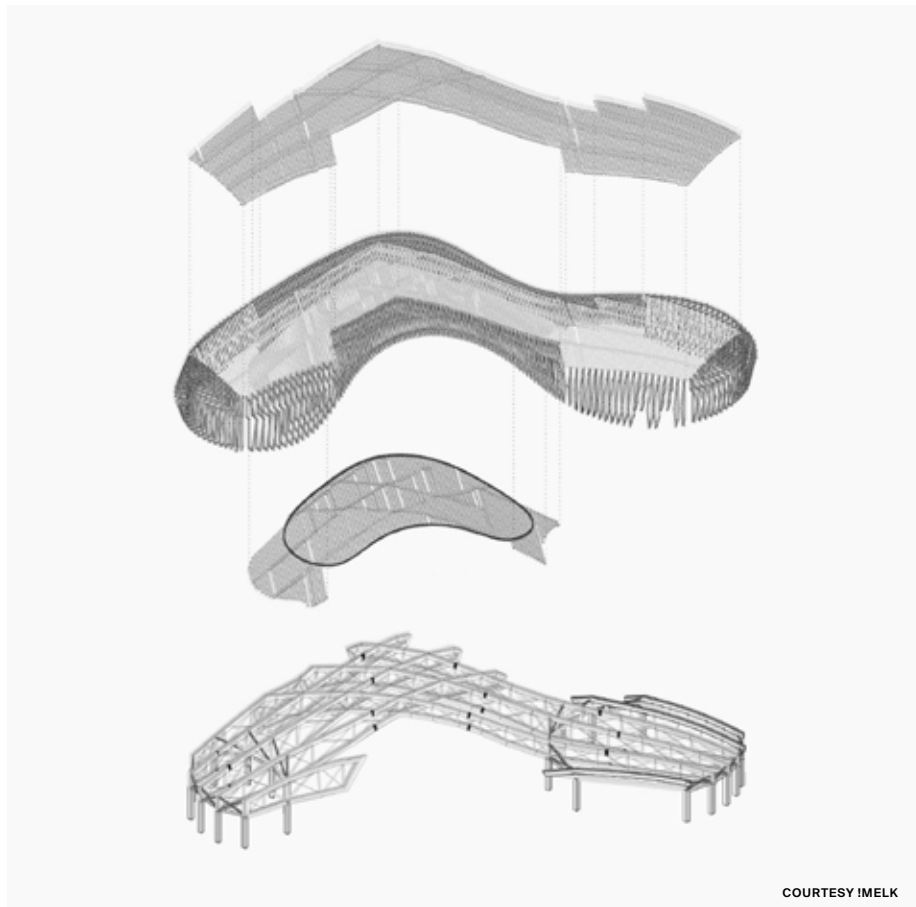


Photo: Corey Gaffer
courtesy Perkins + Will

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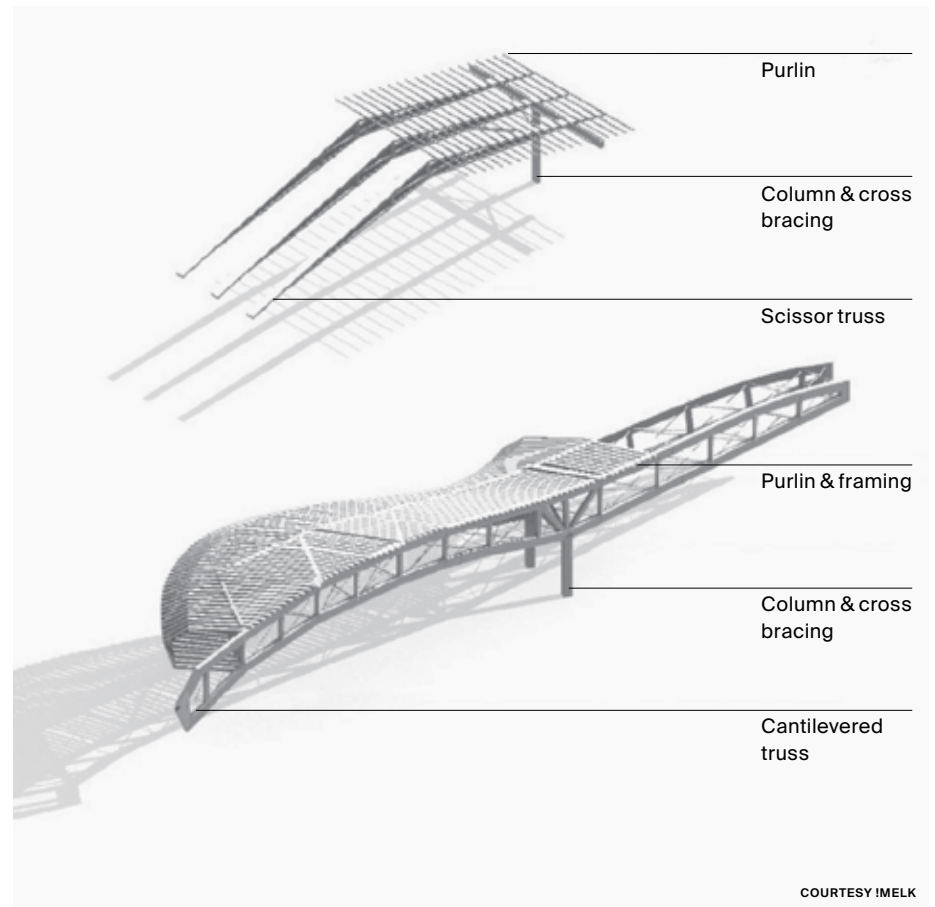
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COURTESY IMELK

The secondary system, a lattice of standard wooden beams and plywood, protrudes from the cantilevered glulam truss column structure below.



COURTESY IMELK

The design is partially inspired by traditional barn design, but abandons the standard scissor truss.



COURTESY CHAD DAVIES/IMELK

Two thirds of the 9,100-square-foot canopy's footprint is public space.

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Photo: Corey Gaffer
courtesy Perkins + Will

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Harvard HouseZero Cambridge, Massachusetts

Lead Architect: Snøhetta
Landscape Architect: Snøhetta
Interior Designer: Snøhetta
Energy/Climate Engineer: Skanska Teknikk (Norway)
Structural Engineering: Silman Associates
BAS/Controls/Natural Ventilation System: WindowMaster
Acoustics: Brekke & Strand Akustikk
Code & Accessibility: Jensen Hughes

How do you retrofit a 97-year-old timber frame home to be an energy-positive living laboratory and office? When Snøhetta was asked to renovate the Harvard Center for Green Buildings and Cities—part of the Graduate School of Design (GSD)—the answer was to work around the limitations of timber. The passively heated and cooled house, dubbed HouseZero, operates without electric lighting during the day, is entirely naturally ventilated, and produces zero carbon emissions.

Because the building is in the Mid-Cambridge Neighborhood Conservation District, Snøhetta was limited in how much they could change the exterior. The house was re clad in off-the-shelf Forest Stewardship Council (FSC)-certified Eastern White Cedar shingles sourced from southern Quebec. Cedar naturally contains rot-resistant oils, so the shingles were left unfinished and will eventually weather to a grayish color.

HouseZero's interior was stripped back to

the rough-sawn hardwood support structure, but the original timber was kept in place to minimize the project's carbon footprint in the construction process. A central staircase was installed around the framing members as the primary vertical circulation path. To reduce the noise in the stairwell and adjacent meeting rooms, Snøhetta worked with acoustic consultants Brekke & Strand Akustikk to design custom-milled timber acoustic panels. The triangular panels, designed to fit together radially, were robotically milled by GSD students on ¾-inch-thick, FSC-certified, no-added-urea-formaldehyde plywood with yellow birch face veneer. The perforated pattern reveals the acoustic insulation—made from recycled denim—behind the panels, and each is attached to a CNC-milled, FSC-certified plywood scaffolding structure with soy-based glues. To avoid off-gassing, Snøhetta left all of the interior timber surfaces unfinished and only used natural glues. **Jonathan Hilburg**



MICHAEL GRIMM

Above: A central, naturally lit staircase acts as HouseZero's vertical circulation core.



Top: Snøhetta poured a concrete floor slab that passively absorbs and releases heat. **Above:** Sculptural solar shades and solar panels were added to the house's exterior.

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Photo: Corey Gaffer
courtesy Perkins + Will

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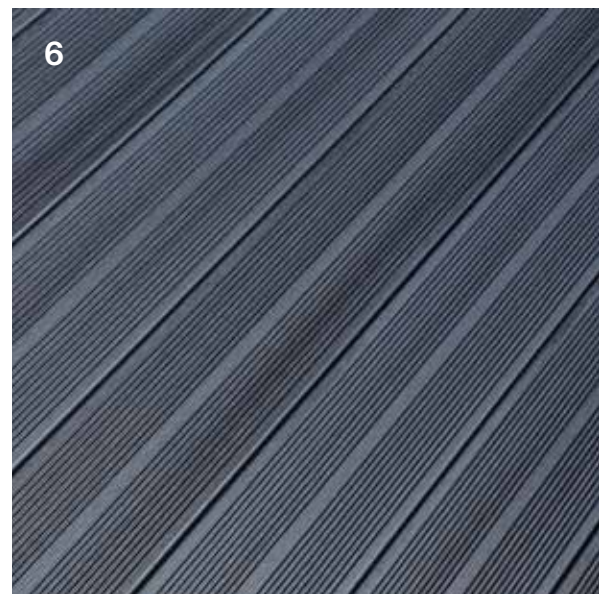
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All Hands on Deck

From recycled composite boards to raw timber panels, these wooden decking solutions are strong and made to last. *By Gabrielle Golenda*



1 Mahogany Wood Tiles Bison Innovative Products

FSC certified, Bison's Mahogany Wood Tiles are fashioned from hardwood sourced from government-regulated plantations in the Fiji Islands. After being harvested, the tiles are manufactured in Vietnam, where they can be stained to match existing interior flooring or, if desired, to match a particular color. bisonip.com

2 ExoTile Wood Deck Tiles Nova

Formed using nine 3" x 1" boards of matching hardwood, Nova's 24" x 24" tiles are offered in Batu and Ipe wood. Each tile is secured with a clip system that prevents sagging. Both wood species are perfect for residential or commercial applications. novausawood.com

3 Black Walnut Robi Decking

Robi's Black Walnut Decking is characterized by gritty wood grains that cause naturally occurring contrasts in color. It is available unfinished for a raw look and oiled to achieve a more polished appearance. robidecking.com

4 Exterior Cladding Richlite

It's actually paper?! Made from 100 percent recycled resin-infused paper, Richlite manufactures skatepark ramps, musical instruments, and exterior cladding/decking from the same material. Incredibly durable, Richlite is similar to hardwood with a dense layered composition that is both water- and fire-resistant. richlite.com

5 Black Locust Hardwoods of Wisconsin

Ideal for patios and outdoor areas alike, Black Locust is a permeable paver with a raised-joint interlocking system that allows water to slip through and drain away. Left unstained, it will last up to 100 years and develop a naturally occurring silvery gray patina. hardwoodsofwisconsin.com

6 Skyline Series Sylvanix Outdoor Products

Made from recycled plastic and wood, Sylvanix's composite decking lasts longer than traditional lumber. Each plank features two patterns, a natural wood grain on one side and a line motif carved into the other. The Skyline Series is available in two neutral colors: teak and graphite. sylvanixdecking.com

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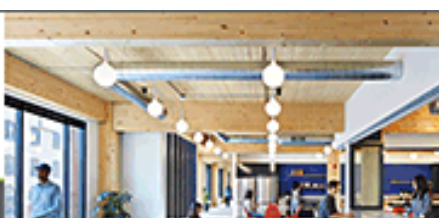


Photo: Corey Gaffer
courtesy Perkins + Will

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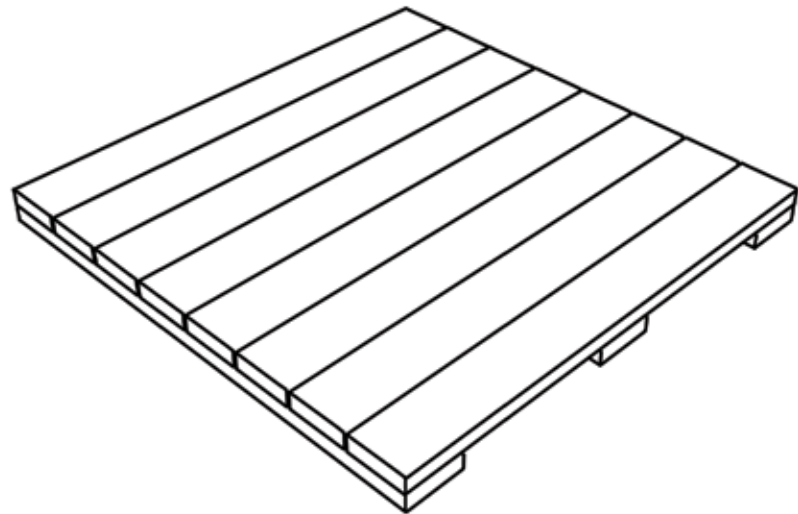
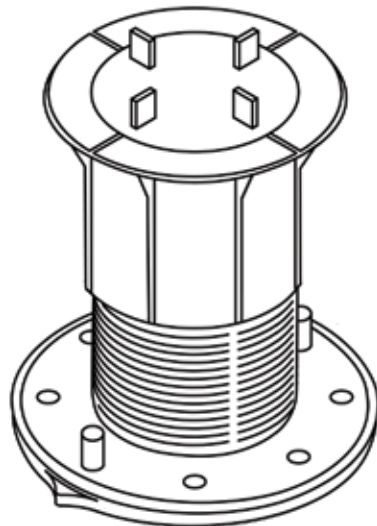
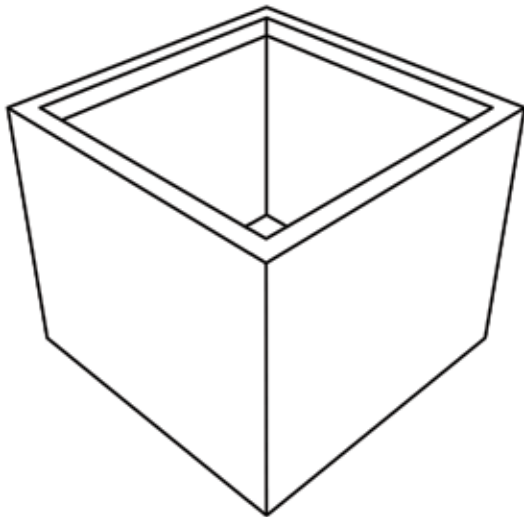
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REDEFINING ROOFTOPS

CREATING ROOFTOP ENVIRONMENTS

project: Partners Healthcare Administrative Campus (Boston, MA) | architect: Gensler | landscape architect: OJB Landscape Architecture | photographer: Kyle J Caldwell

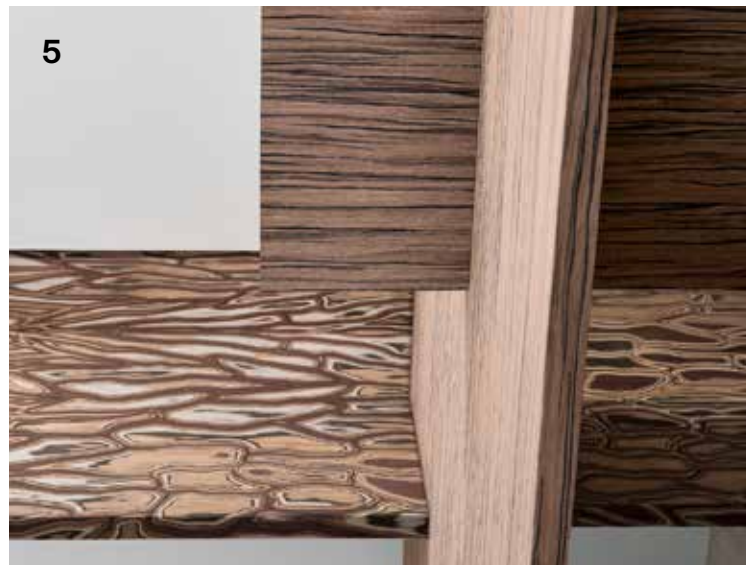
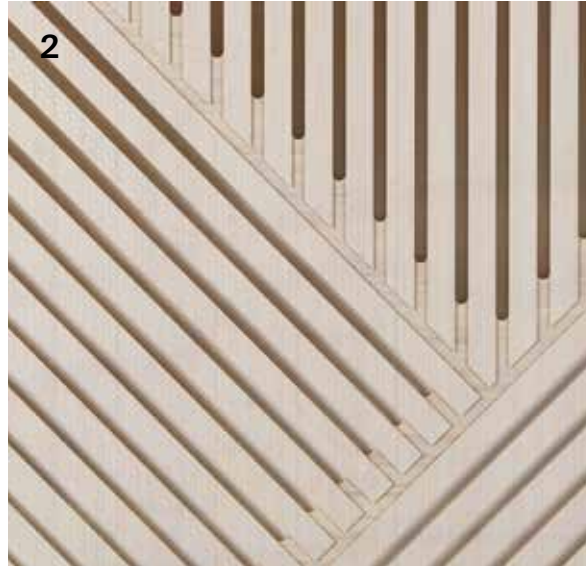
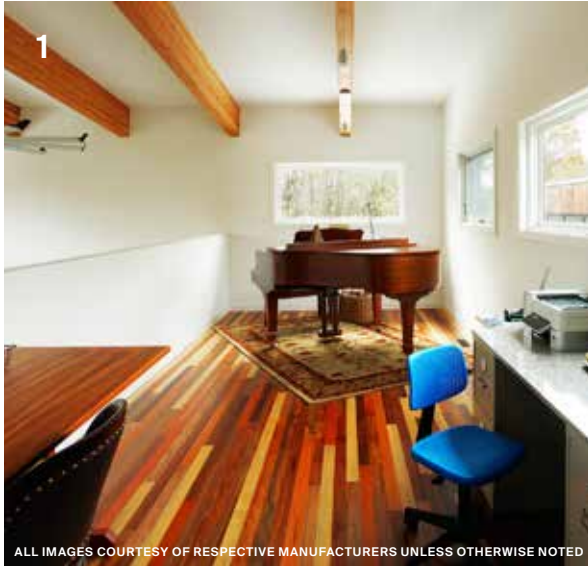


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36 Interior Surfaces

Knotty and Nice

Highlighting the natural knots of the timber, these interior surfaces will “spruce up” any room. From carbon-zero hardwood to pine designed by Kengo Kuma, we bring you the best in new wood surfacing. *By Gabrielle Golenda*



1 Jungle Mix Solid Hardwood Whole Forest

These hardwood planks are actually carbon negative, meaning that the wood Whole Forest sources from Ecuador is from 30 to 50 tropical tree species in a forest that's remained sustainably intact. Put simply, large amounts of carbon are prevented from being released into the atmosphere through long-term conservation efforts. Available in a range of eclectic finishes, Jungle Mix flooring can be mixed and matched to create completely nontoxic flooring and walling. wholeforest.com

2 Futura Sound Fractal Wall Panels Plyboo

Modular by design, Futura Sound by Smith & Fong is a system of acoustic bamboo panels featuring geometric motifs that, when combined, diffuse sound. Plyboo offers the collection in a handful of charming monotone hues, from soft maple to warm birch to gray ash. plyboo.com

3 Coco Palm Plywood and Veneer Durapalm

Characterized by deep, rich mahogany tones and gritty, naturally occurring graining, these planks made from coconut palm trees are perfect for both commercial and residential applications. From somber gray to aggressive beige, Durapalm offers a variety of colorways in plywood and veneer. durapalm.com

4 Aromatic Cedar Columbia Forest Products

Bye-bye pests and mildew! Cedar protects kitchens, pantries, basements, and indoor spaces alike from odors with its inherent natural properties (especially its scent). Columbia Forest Products ¼" x 4' x 8' aromatic cedar plywood panels are offered in both mirrored and symmetrical styles. columbiaforestproducts.com

5 Maritime Pine by Kengo Kuma ALPI

Japanese architect Kengo Kuma teamed up with Italian wood veneer manufacturer ALPI on a collection that emulates the ruggedness of pine native to the Mediterranean. Accentuated with deep cracks and “natural” irregularities in the veining, the bark design looks like it has a life force of its own. alpiwood.com

6 Handcrafted Collection Nydree Flooring

Nydree combined marine-grade birch core with an acrylic finish to create real hardwood flooring that is ideal for high traffic areas. Perfect for those buildings that want or already have LEED standard certification, the benzophenone-free lamination actually strengthens the flooring by making it more dent-resistant than standard wood. The Handcrafted Collection is made by hand in both white oak and walnut. nydreeflooring.com

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courtesy Perkins + Will

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37 Mass Timber

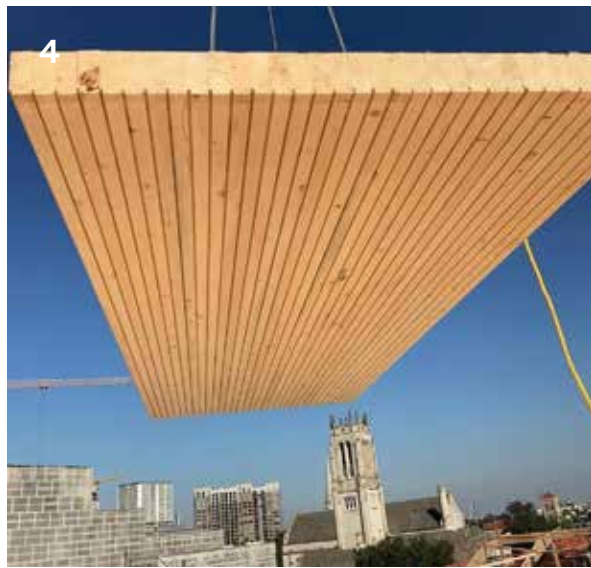
Fake Plastic Trees

CLT, GLT, NLT, DLT, and all the other LTs: You'll find our favorite laminated timbers made by U.S.-based manufacturers and suppliers below. You're welcome!

By Gabrielle Golenda



3



1 Douglas Fir Glulam Beams Western Structures, Inc.

Western Structures fashions Douglas fir glulam beams by gluing panels of lumber together to make extraordinarily deep proportions. Ranging from 3" to 60" deep, with widths of up to 17", these beams are ideal for a variety of projects. westernstructures.com

2 CrossLam CLT Structurlam

Significantly lighter than the usual alternative, concrete, CrossLam CLT is made by layering panels of timber in two directions into a strong building solution for flooring, walls, roofs, and coring. Made with a material make up of wood sourced from sustainably managed forests, StructurLam's CLT is carbon negative. Alongside its reduced carbon footprint, its durable, easy-to-assemble system makes it ideal for public and commercial buildings, schools, healthcare facilities, and multifamily housing. structurlam.com

3 TerraLam CLT Sterling Lumber Co.

Sterling's CLT mats, made out of renewable southern yellow pine, rely on a cross-grain technology that allows them to be durable and strong. They are made in three- and five-ply construction, which makes them lighter and stronger than mass timber alternatives. TerraLam is available in three sizes: 300 (8' x 14'), 504 (4' x 16'), and 508 (8' x 16'). sterlingsolutions.com

4 DowelLam DLT StructureCraft

This all-wood mass timber Dowel Laminated panel system is incredibly versatile and offered with five different profiles: kerf, chamfered edge, square edge, fluted, and acoustic. Fully customizable, each format allows for a range of benefits, including sound absorption, aesthetic considerations, and structural performance. structurecraft.com

5 Plywood CDX Panels Freres Lumber Co.

Touch-sanded in Lyons, Oregon, Freres bonds plywood veneers with glue to form a range of plywood panels available in a variety of sizes: 5/16" 3-ply, 3/8" 3-ply, 15/32" 4-ply and 5-ply, 19/32" 4-ply and 5-ply, 23/32" 5-ply, and 1 1/8" 7-ply. Certified by the APA, the panels meet the standards of the U.S. Product Standard PS 1-95. frereslumber.com

6 CLT Panels and Glulam Beams DR Johnson Wood Innovations

Manufactured in a factory in Riddle, Oregon, DR Johnson specializes in CLT made of Douglas fir in 3" and 6" panels. Meanwhile, the Riddle laminators fabricate and glue structural glulam beams made of both Douglas fir and Alaskan Yellow Cedar at the same facilities. drjlumber.com

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38 Resources

Cladding

Accoya
accoya.com

Armstrong Ceiling & Wall Solutions
armstrongceilings.com

Centura Building Systems
centurabuilding.com

FunderMax
fundermax.at

Gudgel Yancey Roofing
yanceyroofing.com

Kebony
kebony.com

Louisiana-Pacific Corporation
lpcorp.com

Lunawood
lunawood.com

Technowood
technowood.com.tr

Murphy Company
murphyplywood.com

Nydree Flooring
nydreeflooring.com

Plyboo
plyboo.com

Whole Forest
wholeforest.com

Mass Timber: CLT/NLT/GLT

Boise Cascade
bc.com

Brisco Wood Preservers
briscowood.com

DR Johnson Wood Innovations
drjlumber.com

Euclid Timber Frames
euclidtf.com

Freres Lumber Co.
frereslumber.com

International Beams
internationalbeams.com

Katerra
katerra.com

LignaTerra
lignaterra.com

Nordic Structures
nordic.ca

Pacific Woodtech
pacificwoodtech.com

SmartLam
smartlam.com

Sterling Lumber Co.
sterlingsolutions.com

StructureCraft
structurecraft.com

Structurlam
structurlam.com

Tolko
tolko.com

Vaagen Brothers Lumber
vaagenbros.com

Western Structures
westernstructures.com

West Fraser
westfraser.com

Wood Tech Services
glulams.com

Decking

AZEK
azek.com

Bison Innovative Products
bisonip.com

Hardwoods of Wisconsin
hardwoodsofwisconsin.com

Nova
novausawood.com

Richlite
richlite.com

Robi Decking
robidecking.com

Roseburg
roseburg.com

Sylvanix Outdoor Products
sylvanixdecking.com

WoodCo
woodco.com

Interior Surfaces

ALPI
alpiwood.com

Columbia Forest Products
columbiaforestproducts.com

Durapalm
durapalm.com

Havwoods International
havwoodsusa.com

JSV Architectural Veneering & Millwork
jsvmillwork.com

Linea Ceiling & Wall Systems
lineaceilings.com



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40 Calendar

East

Jan. 23 6:30 p.m. **Barry Bergdoll**
Heavy Lightness: Marcel Breuer and Brutalism
 Lecture
 University of Pennsylvania
 Meyerson Hall
 210 South 34th St.
 Philadelphia
 design.upenn.edu

Jan. 25 8:30 a.m. **Diana Anderson, MD, MARCH**
The Architecture of Health
 Lecture
 Design Museum Foundation
 Optum
 1325 Boylston St.
 Boston
 designmuseumfoundation.org

Feb. 7 **Ambiguous Territory:**
Architecture, Landscape, and the Postnatural
 Exhibition Closing
 Pratt Institute
 Pratt Manhattan Gallery
 144 West 14th St.
 New York
 pratt.edu

Feb.13 through May 26 **Nari Ward: We the People**
 Exhibition Opening
 New Museum
 235 Bowery
 New York
 newmuseum.org

Feb. 15 **Yilmaz Zenger**
Studio-X Istanbul
 Exhibition Closing
 Columbia University GSAPP
 1172 Amsterdam Ave.
 New York
 arch.columbia.edu

Mar. 20 1:00 p.m. **2019 Design and Technology Expo: Progression**
 Event
 AIA Westchester Hudson Valley
 Westchester Marriott
 670 White Plains Rd.
 Tarrytown, NY
 aiawhv.org

Mar. 20 6:30 p.m. **Matthias Hollwich**
Architecture Can!
 Lecture
 University of Pennsylvania
 Meyerson Hall
 210 South 34th St.
 Philadelphia
 design.upenn.edu

Mar. 24 through Apr. 1 **Portugal: Tour Historic Gardens and New Urban Landscapes in Porto and Lisbon**
 Tour
 The Cultural Landscape Foundation
 1711 Connecticut Ave., NW
 Washington, D.C.
 tclf.org

Mar. 28 through Mar. 30 **107th ACSA Annual Meeting**
 Event
 Carnegie Mellon University
 5000 Forbes Ave.
 Pittsburgh, PA
 acsa-arch.org

West

Jan. 12 through Mar. 2 **#FROMWHEREISTAND**
 Exhibition Opening
 Asaf Gam Hachohen, Gidon Levin, Yair Barak
 Winston Wächter Seattle
 203 Dexter Ave. N
 Seattle
 seattle.winstonwachter.com

Jan. 23 7:00 p.m. **Daniel Libeskind**
Edge of Order
 Lecture
 The Getty Center
 Harold M. Williams Auditorium
 1200 Getty Center Dr.
 Los Angeles
 getty.edu

Jan. 24 6:00 p.m. **Smoke Goddess: Judy Chicago on Land Art and the Desert**
 Lecture
 Judy Chicago and Philip Kaiser
 Nevada Museum of Art
 160 West Liberty St.
 Reno, NV
 nevadaart.org

Jan. 24 through Jan. 25 **Business Development & Marketing Academy**
 Event
 AIA Los Angeles
 Wood Concepts Showroom
 747 North La Brea Ave.
 Los Angeles
 aialosangeles.org

Jan. 25 through Jan. 27 **Portland Fine Print Fair**
 Event
 Portland Art Museum
 1219 SW Park Ave.
 Portland, OR
 portlandartmuseum.org

Jan. 31 6:00 p.m. **Level of Development for BIM + Project Documentation**
 Panel
 AIA San Francisco
 130 Sutter St. #600
 San Francisco
 aiasf.org

Feb. 1 through Feb. 3 **I'm Rarely Home: A Note on Micro-Units in Downtown**
 Exhibition Opening
 Farmers & Merchants Bank
 401 S. Main St.
 Los Angeles
 navel.la/events/rarely-home/

Feb. 12 through Mar. 23 **Sterling Ruby**
 Exhibition Opening
 Sprüth Magers Los Angeles
 5900 Wilshire Blvd.
 Los Angeles
 spruethmagers.com

Feb. 26 12:00 p.m. **Ann Edminster**
Examining Carbon Impacts of Tall Buildings in Dense Urban Settings
 Lecture
 12:00 p.m.
 AIA San Francisco
 130 Sutter St. #600
 San Francisco
 aiasf.org

East Highlight



BRUCE NAUMAN/ARTISTS RIGHTS SOCIETY

Bruce Nauman: Disappearing Acts

Museum of Modern Art and MoMA PS1
 New York and Queens, NY

Through February 18 at MoMA
 Through February 21 at MoMA PS1

The Museum of Modern Art (MoMA) has pulled out all of the stops for *Bruce Nauman: Disappearing Acts*—quite literally, in some instances. The walls of MoMA's sixth floor have been cleared so the whole floor can be dedicated to Nauman's larger, more architectural explorations of space, while the entirety of PS1 in Queens has been handed over to smaller installations. All told, MoMA has put 165 pieces of sculpture, drawings, video art, neon work, soundscapes, paintings, and more on display. In Midtown, visitors are guided through a

chronological tour of Nauman's larger work. Across the river, MoMA PS1 holds Nauman's more intimate—and more terrifying—pieces. The former classrooms of PS1 have been transformed into private enclaves for his audiovisual pieces. MoMA will also be presenting live performances of the 1965 performance piece *Wall/Floor Positions* from 12:00 to 4:00 p.m. every Thursday and Sunday, and at PS1, every Friday and Saturday from 1:00 to 5:00 p.m.

West Highlight



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The World of Charles and Ray Eames at the Oakland Museum of California

The Oakland Museum of California
 1000 Oak Street
 Oakland, California

Through February 17

The World of Charles and Ray Eames, a sprawling exhibition focusing on the life and works of the one of the 20th century's most iconic design duos, is making the final stop of its worldwide tour at the Oakland Museum of California.

The Eames Office-produced exhibition aims to re-present Charles and Ray Eames's oeuvre for a new generation, and includes over 400 objects, including project prototypes, photography, toys, and other design objects.

The show also contains some never-before-seen items on loan from the Eames Office. Billed as an "intimate and inspiring" reappraisal of the Eames's legacy, the exhibition will also screen the newly restored *Glimpses of the U.S.A.*, a short film highlighting the commonalities between daily life in the United States and what was then the Soviet Union.

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41 Calendar

Southwest

- Jan. 8 through Jan. 11 **The International Consumer Electronics Show**
Multiple venues
Las Vegas
ces.tech
- Jan. 26 **Kambui Olujimi: Zulu Time**
Exhibition Opening
Blanton Museum of Art
200 East Martin Luther King Jr. Blvd.
Austin, TX
blantonmuseum.org
- Jan. 29 **Sir David Adjaye Ruby City: A Living Legacy Program with Architect Sir David Adjaye**
Talk
Trinity University
Laurie Auditorium
One Trinity Place
San Antonio
rubycity.org
- Jan. 31 through Feb. 1 **Prosperity Summit: Building Economic Resilience in Practice**
Event
AIA Houston
609 Main Conference Center
Houston
aiahouston.org

Southeast

- Jan. 5 10:30 a.m. **Design Discourse: Design for Women's Equality**
Talk
Museum of Design Atlanta
1315 Peachtree St. NE
Atlanta, GA
museumofdesign.org
- Jan. 28 5:30 p.m. **Lola Sheppard of Lateral Office**
Lecture
University of Tennessee
College of Architecture and Design
McCarty Auditorium, Room 109
1715 Volunteer Blvd.
Knoxville, TN
archdesign.utk.edu
- Oct. 30 6:30 p.m. **Michael Maltzan Technoglass Lecture Series**
Lecture
University of Miami School of Architecture
Glasgow Hall, Perez Architecture Center
1215 Dickenson Dr.
Coral Gables, FL
news.miami.edu/soa-now/
- Feb. 6 5:00 p.m. **Barry Bergdoll James A.D. Cox Distinguished Lecture**
Lecture
University of Virginia School of Architecture
Campbell Hall 153
110 Bayly Dr.
Charlottesville, VA
arch.virginia.edu

Midwest

- Jan. 18 6:00 p.m. **Eyal Weizman**
Lecture
University of Michigan
A. Alfred Taubman College of Architecture and Urban Planning
200 Bonisteel Blvd.
Ann Arbor, Michigan
taubmancollege.umich.edu
- Jan. 25 6:00 p.m. **Mabel O. Wilson Lecture**
Lecture
University of Michigan
A. Alfred Taubman College of Architecture and Urban Planning
200 Bonisteel Blvd.
Ann Arbor, Michigan
taubmancollege.umich.edu
- Feb. 3 **My Building, Your Design: Seven Portraits by David Hartt**
Exhibition Closing
Art Institute of Chicago
111 South Michigan Ave.
Chicago
artic.edu
- Mar. 30 **Jenny Kendler & Brian Kirkbride: The Playhead of Dawn**
Exhibition Closing
Arts Club of Chicago
201 East Ontario St.
Chicago
artsclubchicago.org

International

- Jan. 18 through Jan. 27 **Toronto Design Offsite Festival**
Fair
Multiple locations
Toronto
designto.org
- Jan. 19 through Jan. 22 **Digital Life and Design 18**
Conference
Alte Kongresshalle
Theresienhöhe 15
Munich
dld-conference.com
- Jan. 24 **David Hockney: New Photographic Drawing**
Exhibition Opening
Galerie Lelong & Co
13 Rue de Teheran
Paris
galerielelong.com
- Jan. 28 through Feb. 1 **Cevisama Expo**
Fair
Feria Valencia
Avinguda de les Fires
Valencia
cevisama.feriavalencia.com
- Feb. 5 through Feb. 7 **Surface Design Show**
Fair
52 Upper St.
London
surfacedesignshow.com

Southwest Highlight



JAMES FLORIO

Dior: From Paris to the World

The Denver Art Museum
100 W 14th Avenue Parkway
Denver

Through March 3

American lovers of both fashion and architecture can get their fix in one hit this winter at the new Office for Metropolitan Architecture (OMA)-designed exhibition on Dior, the French fashion house. *Dior: From Paris to the World* showcases the label's work in chronological order and unveils its history with various high-profile designers, including Yves Saint Laurent, John Galliano, Raf Simons, and its current creative director, Maria Grazia Chiuri.

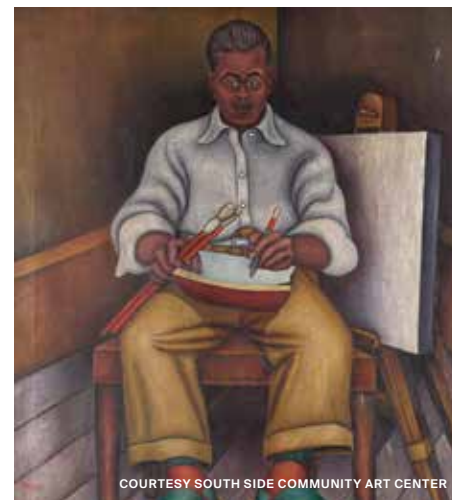
Shohei Shigematsu led OMA in creating an exhibition concept that visually bridges Dior

garments with the Daniel Libeskind-designed Denver Art Museum. The design team takes advantage of the building's angular aluminum structures as a backdrop for the high-end garments; the contrast between Dior's full shapes and the museum's stark titanium-clad interior at once emphasizes and softens the building's architectural features. A sinuous path links the dark Anschutz Gallery with the Martin and McCormick Gallery, where Dior's global inspirations are revealed: pops of color set atop a series of metal pedestals.

Midwest Highlight



COURTESY SOUTH SIDE COMMUNITY ART CENTER



COURTESY SOUTH SIDE COMMUNITY ART CENTER

Change the Canvas, Change the World: A Landscape of Cultural Discovery

South Side Community Art Center
3831 South Michigan Avenue
Chicago

Through March 2

Founded in 1940 by a group of artists devoted to capturing images of black life in flux during the Great Migration, Chicago's historic South Side Community Art Center became a designated Chicago Landmark in 1994 and was given National Treasure status by the National Trust for Historic Preservation in 2017. As the only Works Progress Administration (WPA) Art Center still operating in its original building, for nearly 80 years the South Side Community Art Center has been a sanctuary for emerging African American artists, many of whom have

gone on to become icons. *Change the Canvas, Change the World: A Landscape of Cultural Discovery*, sponsored by the Terra Foundation for American Art, explores the work and careers of artists who made the center and the South Side their creative home, including Gwendolyn Brooks, Margaret Burroughs, Langston Hughes, Gordon Parks, Katherine Dunham, Elizabeth Catlett, Archibald Motley, and other contributors to the center's legacy.

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Garage

Olivia Erlanger and Luis Ortega Goveia

\$21.95, MIT Press



Mood board by Luis Ortega Goveia comprising photographs of garage doors from John Divola's 1970s San Fernando Valley Series, a nativity scene by Lorenzo Costa, and a detail from an installation by Olivia Erlanger and Luis Ortega Goveia of a photograph of a couple kissing held down by a lavender dumbbell.

The garage is one of the most fascinating and misunderstood spaces of the American home. Unfortunately, it is ill-served by the pretentious and scattershot *Garage*, a combination of loosely organized essays and vague art projects put together by Olivia Erlanger and Luis Ortega Goveia.

It doesn't help that the duo has a fondness for using edgy, trendy concepts and terms to project their own narratives onto the garage rather than actually analyzing the complex history of the typology, or declare on the first page of the book that they have discovered a "conspiracy." What that plot actually intends to accomplish or who its perpetrators are is not completely clear, but the authors link Frank Lloyd Wright, Steve Jobs, and many others in an effort to affirm the nuclear family in its exclusive, racist, sexist, and classist ways. They also claim that those conspirators are using financial and regulatory methods to exclude the car, the very emblem of American technological achievement and freedom, from the bosom of the home.

This is a shame because the authors are perceptive and have a deft way with small revelations that apparently neither they nor the editors at the otherwise rigorous MIT Press sought to connect or discipline. They start with a beautiful description of what is so important and so confounding about the suburban home's garage.

Unlike the emotionally charged monogamous double bed or the enslaving oven sheltered by the bedroom or kitchen, the car was never truly at home in the garage. Once the machine was taken outside, onto the street, the garage was cleansed of its original purpose, leaving an emptiness behind that was

waiting to be occupied. Physically it is the only room in the household that reaches out onto the street, a threshold between the heteronormative space of reproduction and the productive spaces of the city, a semidomestic chamber away from the emotional pressures of the private familial realm and the social demands of professionalism.

That void, the authors go on to show, was first filled with the large surplus of stuff the suburban home produced (although the source and character of that surplus is one of the many avenues left unexplored in this slender volume), and then with teens and nonconforming adults seeking to escape the restrictions they found in the house. Finally, garages were workspaces for musicians, who started bands in them, a very few of which were vehicles to stardom, and entrepreneurs, ranging from Walt Disney to Hewlett and Packard, who used the empty space to start their companies.

While there are a host of ways to find significance in the garage, Erlanger and Goveia keep coming back to this one: "Ultimately *Garage* is not a book about garages but about the power of constructing a space for fluid otherness." Unfortunately, they do not really explain what that means, other than finding idiosyncratic moments in popular culture, such as the way the character played by Kevin Spacey in the film *American Beauty* uses the garage to escape from his family to live out his sexual fantasies and define his self-worth. Along the way, the pair make claims that are intriguing, such as that the garage is "less punk than queer"—even though we associate the garage with rebellious punks who either play music too loudly or drop out of school and invent computers.

But they claim that somehow it is a place that poses as one thing but is another, that is odd and elegant rather than rebellious. I just don't see it, but I would have loved a bit more explanation or, heaven forbid, proof.

The authors also claim that the conversion of the garage, made possible by the invention of the carport, was the prototype for the "garageification" of America. But they fail to include such factors as the move to the suburbs, where there are fewer fears about leaving the machine outdoors, and the improvement in the car's mechanics. Furthermore, they trace the conversion back to an obscure Italian art gallery, a commercial facility, and fail to include the long tradition of lofts that were designed for flexibility. These, in truth, were the true source of the emergence of such hybrid spaces for living and working.

Part of the issue is that the book is just too fast and impressionistic. Erlanger and Goveia note the emergence of the Ford Model T automobile and the first purpose-built garage at Frank Lloyd Wright's Robie House in roughly the same year (but not the same, as they claim), and make some interesting claims about the equivalence in size between the house's place for social gathering and for storing cars, but they move very quickly on to other issues. While others have studied the implications of the Federal Housing Administration (FHA) rules mandating enclosed garages as a prerequisite for guaranteeing mortgages after World War II, describing how such rules shaped the nature of sprawl, the development of transportation systems dominated by cars, and the homogenizing of zoned neighborhoods, Erlanger and Goveia note this only to

reinforce the notion that the garage is part of a racist and classist attempt to strengthen the middle class.

I wish the authors had zoomed in on the actual nature of the garage: the way it combines storage, technology, and, indeed, escape; the ways in which it is where the outside world enters into the otherwise closed world of the single-family home; and the fact that it did indeed bring the workshop back into the home through—not the back door—but the garage door.

To do so, they could have spent a bit more time looking at the actual characteristics of the garage and less time speculating and building moody collages (truth be told, MIT Press's perennial low-rez and clunky production does Erlanger's work absolutely no favors). But they have an agenda. They see the garage as a "temple to the self," albeit a self that is "fluid" and seems always to be slithering away from norms. They also see it as "a space in which to hate suburbia!" (their emphasis). They say little about actual social structures, let alone physical ones, and even less about the activities or even the machines that have inhabited the domestic garage.

The good news is that the suburban garage is a wonderful topic that is still available to someone willing to invest the time and effort to give it the analysis it truly deserves.

Aaron Betsky is the president of the School of Architecture at Taliesin and is the author of numerous books, including *Making It Modern* and *Architecture Matters*.



Nic Seago's studio in Highland Park, where images were produced for this book.

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UCSB Campus Architecture: Design and Social Change

Art, Design & Architecture Museum
University of California, Santa Barbara
January 13 – December 2, 2018



A campus planning-focused exhibition at the University of California, Santa Barbara highlights the tasteful, vernacular elements inherent in the undersung planning work of Charles Luckman and William L. Pereira.

UCSB Campus Architecture: Design and Social Change was a fascinating exhibition at the University of California, Santa Barbara (UCSB) Art, Design, & Architecture Museum (ADA) that used master plans, drawings, photographs, and models to chart the profound changes in urban planning and public architecture design that took place at the university.

The exhibition also challenged several long-standing myths that plague California's post-World War II urban planning legacy, including the persistent idea that many of the era's plans were designed to remain static over time.

For one, the exhibition, curated by ADA reference archivist Julia Larson, was a subtle homage to two of the most prominent but largely forgotten regional urban thinkers of the postwar era—William L. Pereira and Charles Luckman—who together in 1953 crafted a cinnamon-hued urban design language for the university imbued with elements of vernacular modernism.

Their initial approach—dubbed the “Campus Standard” plan—was eclectic but extremely tasteful. In early buildings like the Ortega Dining Commons and Anacapa Residences, Ennis House-inspired concrete block piers mixed with hipped roofs, adobe-style stucco massing, and expressive

modernist design elements to create solid, stark buildings that instantly rendered the barren site sophisticated.

The remaining grounds were exposed to ocean wind, because the site's topsoil had initially been scraped away. In response, the first buildings by Pereira & Luckman were laid out in slender, interlocking L-shapes, each squat structure separated by concrete breezeblock walls and new plantings that curbed windblown dust.

When Pereira & Luckman dissolved their partnership in 1958, Luckman and his new office, Charles Luckman Associates (CLA), stayed on at UCSB as campus planners and executive architects. The new firm updated the Campus Standard plan in 1963 in preparation for a period of profound expansion; among these updates were new rules for taller and denser buildings. Although the updated guidelines CLA crafted were extremely particular, they also lent themselves well to adaptation. Again, hipped roofs, an almost classical use of columns, awnings, and screens, as well as thin-shell concrete spans soon became emblematic of a grown-up Southern California modernism, and an aesthetic touchstone for the state's public and educational facilities.

Luckman's seminal work at UCSB distilled several of the contemporaneous aes-

thetic trends coursing through American design into a coherent sensibility for the state's burgeoning university system.

For example, Harold Frank Hall, built in 1967, stands out as a key example of this cohesive but open-ended style. The gridded, six-story complex is anchored by a long, low volume that features dentil-topped arcades; the taller, attached building is wrapped in sculptural concrete window hoods that bring geometric patterning to the campus skyline.

As detailed in ADA's exhibition, Luckman's vision is significant because the system CLA refined uses the humble markers of small-scale architecture to designate entrances, create shared qualities between structures, and frame views of the campus and surrounding landscape to the benefit of larger buildings. That modern architecture of the time espoused these qualities is often forgotten in the glimmer of the more abstract and singular Palm Springs-style Modernism that is so popular today.

Because of this and other efforts across California's public universities, UCSB's campus planning and architecture stand alongside the state's cookie-cutter suburbs as some of the chief products of its post-World War II economic and social transformations. That is partially by design, as Pereira, Luck-

man, and others worked in both planning and design across the state during this era—pursuing new visions in different arenas.

In presenting this pioneering body of work and its ability to adapt over time, the exhibition also provided a unique lesson about the potential of midcentury urban planning to gracefully absorb change, a quality readymade in some other designs. A key lesson is that Luckman's plans continue to succeed today because they were built on the campus's earlier visions; accommodations were made for history, height, and size, concerns that would only increase in coming decades and are now ever-present.

Lastly, *UCSB Campus Architecture* was a timely analysis—with the current century fully underway, the UC system is once again set to expand. Across the state, university campuses are making changes to boost enrollment and housing offerings. UCSB itself is slated to add 5,000 students and housing for 1,600 students and faculty to its campus over the next eight years.

We can only hope that a century from now, a new exhibition probing these contemporary approaches will be as rich and fruitful as *UCSB Campus Architecture*.

Antonio Pacheco is the West editor for *The Architect's Newspaper*.

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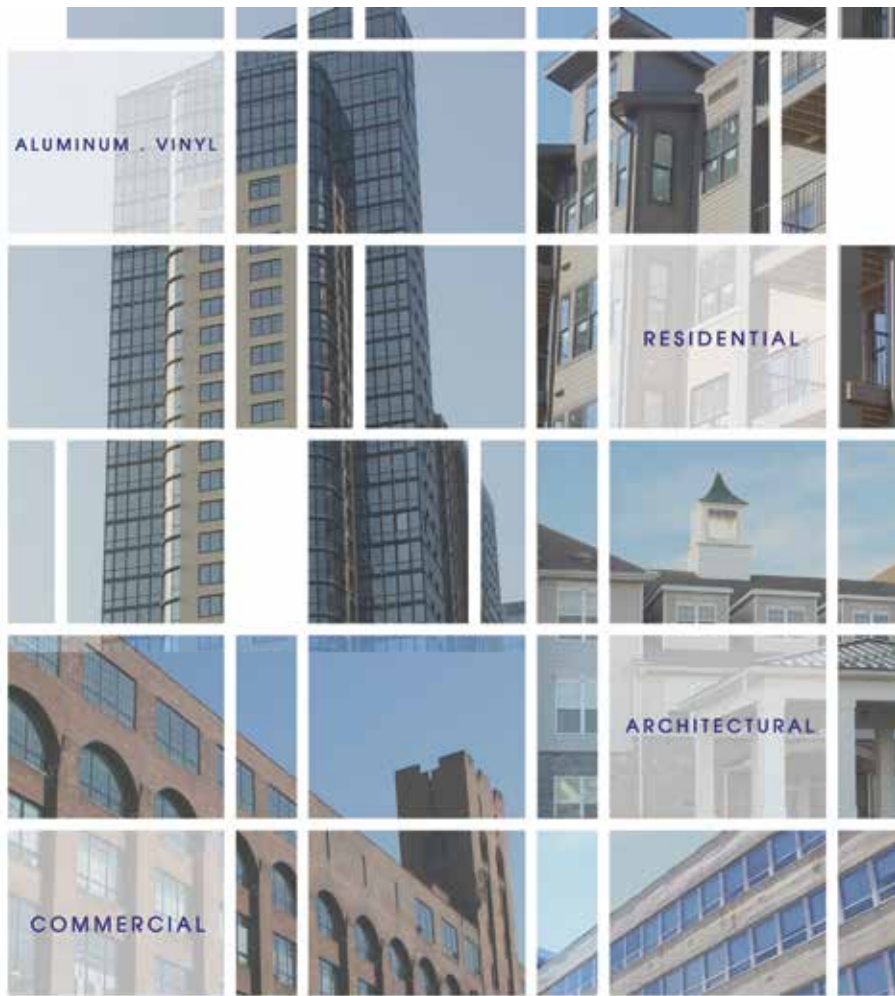


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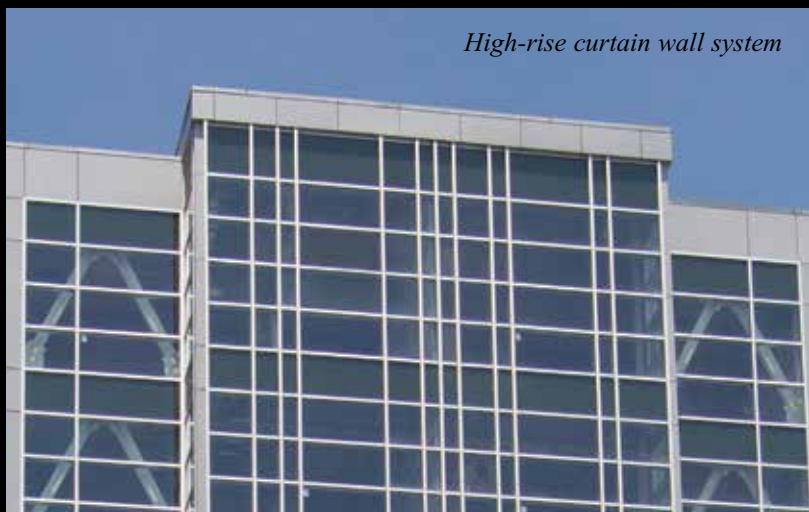
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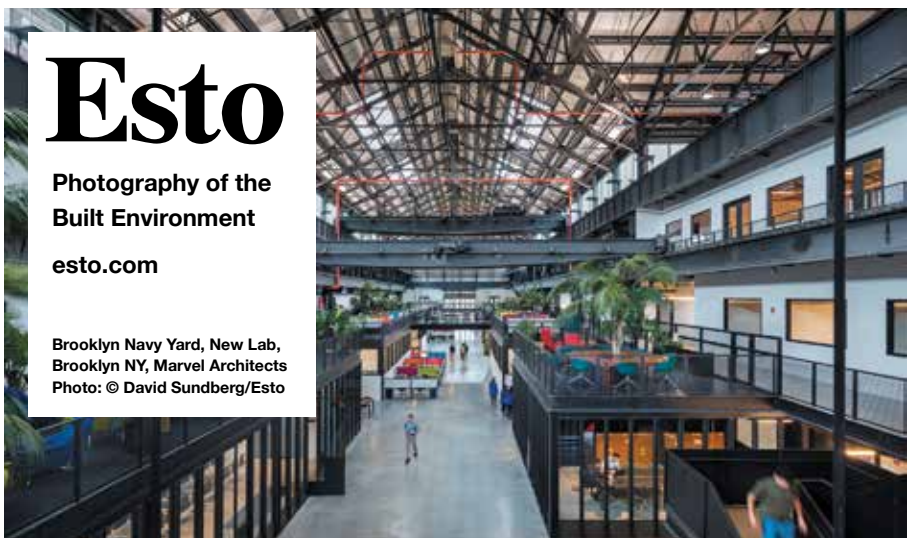
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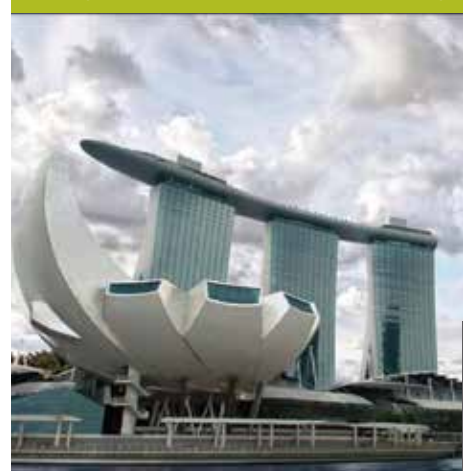
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Henry N. Cobb on Hancock Tower



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Three views of the Hancock Tower: Boston Common reflected in the facade; plywood panels temporarily replaced the failing glass of the curtain wall; alongside Trinity Church in Copley Square.

After seven decades in practice, Harry Cobb has published his first collection of essays, interviews, lectures, and projects: *Henry N. Cobb: Words & Works 1948–2018* (The Monacelli Press, 2018). The story of his best-known building, Boston's John Hancock Tower (now 200 Clarendon), follows a dramatic arc from the controversies of its public review and construction to its recognition as a beloved icon of the city.

In this excerpt, Cobb describes the Hancock's apparent adherence to the rules of typical office buildings, yet acknowledges that the form of the "notched rhomboid" deviates from such expected patterns. It can only be understood as a response to the setting, Copley Square, where the tower stands adjacent to H. H. Richardson's Trinity Church. In the late 1960s and early '70s, the idealized image of the square had suffered from the intrusion of commercialism, and had, as Cobb observed, lost its meaning. His proposition was to find a new meaning for the square, seizing the opportunity of the Hancock company's need for office space to propose that "Copley Square should have its own tower."

As Cobb's newest tower—the Four Seasons Hotel & Private Residences, One Dalton Street—nears completion, it's time to hear in his own words how its bold precursor, the Hancock, came to be more than 40 years ago.

Our proposal was not well received. Indeed, the response in Boston was one of shock and horror. What we saw as the right building in the right place at the right time was seen by almost everyone else, and above all by our fellow architects in Boston, as the wrong building in the wrong place at the wrong time. But after nine months of acrimonious public debate, the necessary permits were obtained, and in the fall of 1968 construction began. Permission was granted not because I had succeeded in converting people to our way of thinking—for with only a few exceptions, I had not—but because had a building permit been denied, the Hancock company might well have carried out its threat to move its headquarters, with its 12,000 employees, to Chicago. This

brazen exercise of corporate arm-twisting on the part of our client naturally contributed to the widespread opinion, often explicitly conveyed to me in person, that my colleagues and I had prostituted ourselves professionally in accepting and carrying out this commission. To compound the agony, during construction the building endured a series of mishaps that caused us and our client to experience the rare privilege of being, for almost half a decade, simultaneously despised and ridiculed. The most notorious of these problems, publicized worldwide, was the failure of insulating glass units that necessitated removal and replacement of all 10,334 panels in the curtain wall. Many in Boston saw all this as entirely just retribution for the egregious overreaching of the city's largest corporation. Mercifully, however, an entrepreneurial T-shirt artist didn't lose his opportunity to find a lighter side, with which I was able to outfit all three of my daughters in the otherwise miserable summer of 1973.

Although the deceptive mutability of its image may suggest otherwise, there is nothing mysterious about the design of the Hancock Tower. It perfectly illustrates my view that the architecture of a tall building is 99 percent logic and 1 percent art—but don't you dare take away that 1 percent! The extreme disparity in size between the tower and the church was the central predicament we faced. We chose to deal with it not by creating a gratuitous distance between the two—this would only have exacerbated the problem—but by bringing them into close proximity while positioning and shaping the tower in such a way that it becomes the contingent satellite and the church the autonomous center in the composition.

To accomplish this, several aspects of the tower's design may be cited as essential. First, the attenuated rhomboid plan-form, placed diagonally on its site, emphasizes the planar while minimizing the volumetric presence of the building, so as to effectively disembodiment the tower as seen from the square. Second, a bullnose corner detail facilitates the crucially important transi-

tion from trapezoidal base to rhomboid tower. Third, notches bisecting the end walls accentuate the weightless verticality of these planes and make legible the tower's nonrectangular geometry. Fourth, the tower's uniformly gridded and reflective surface, stripped of all elements that could suggest a third dimension, mutes the obtrusiveness of its enormous bulk and defers in all respects to the rich sculptural qualities of its much smaller neighbor. Fifth, rather than standing on the ground, the tower's rhomboid volume slips weightlessly up out of the surrounding granite pavement, from which it is separated by a 1-inch-wide perimeter slot. Finally, the triangular space created between the church and the broad face of the tower pays homage to the apsidal view of Richardson's building, reinforcing its intended role as the architectural cynosure of Copley Square.

With regard to this latter aspect, it should be noted that the three-story lobby at the base of the tower is sheathed in precisely the same manner as all other floors; had the monumental scale of this space been directly exposed to view, it would surely have destroyed the delicate balance in the dialogue between church and tower. This concern also accounts for the modest scale of the three entries, originally sheltered by clear plastic domes, which were subsequently replaced by an attenuated stainless steel canopy. Truth be told, the tower's reflective surface and reticent posture do not invite entry. I used to joke with my colleagues—but not with our client!—that the proper means of gaining access to this impenetrable monolith would be through the porch of Trinity Church and along the nave to the crossing, where one would turn and descend by escalator into a tunnel below the street and emerge, finally, in the tower's elevator lobby.

On October 28, 1980, more than four years after the building's completion, in my inaugural lecture as chairman of the architecture department at Harvard, I summed up my view of the matter as follows:

We adopted a strategy of minimalism in the design of the Hancock Tower not for ideological reasons, but because the situation of the building demanded it. In the determined pursuit of our goal—to achieve a symbiosis between the church, the tower, and the square—we excluded everything that did not contribute directly to this end. For we believed that only thus could we temper the inherent arrogance of so large a building and endow it with a presence that might animate rather than oppress the urban scene.

Today, more than three decades after writing these words, I find that I can still subscribe to them. Yet I also find myself still confronting a few questions that just won't go away:

Can this accommodation justify that transgression?

Is this performance appropriate to that occasion?

Does this tower belong in that city?

To each of these questions the answer, it seems to me, must finally be both yes and no. This persistently disturbing ambiguity, in which the building discloses the anxiety of its predicament, perhaps explains why, among all my built works, the Hancock Tower is as close as I have ever come to poetry.

It is also as close as I have ever come to silence. The building's restraint to the point of muteness, its refusal to reveal anything other than its obsession with its urban context, is surely its greatest strength but also its ultimate limitation as a work of architecture. Despite the forcefulness of its gesture, the tower remains virtually speechless, and this resolute self-denial is, in the end, both its triumph and its tragedy.

Henry N. Cobb: *Words & Works 1948–2018*, Henry N. Cobb, The Monacelli Press, \$45.00

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