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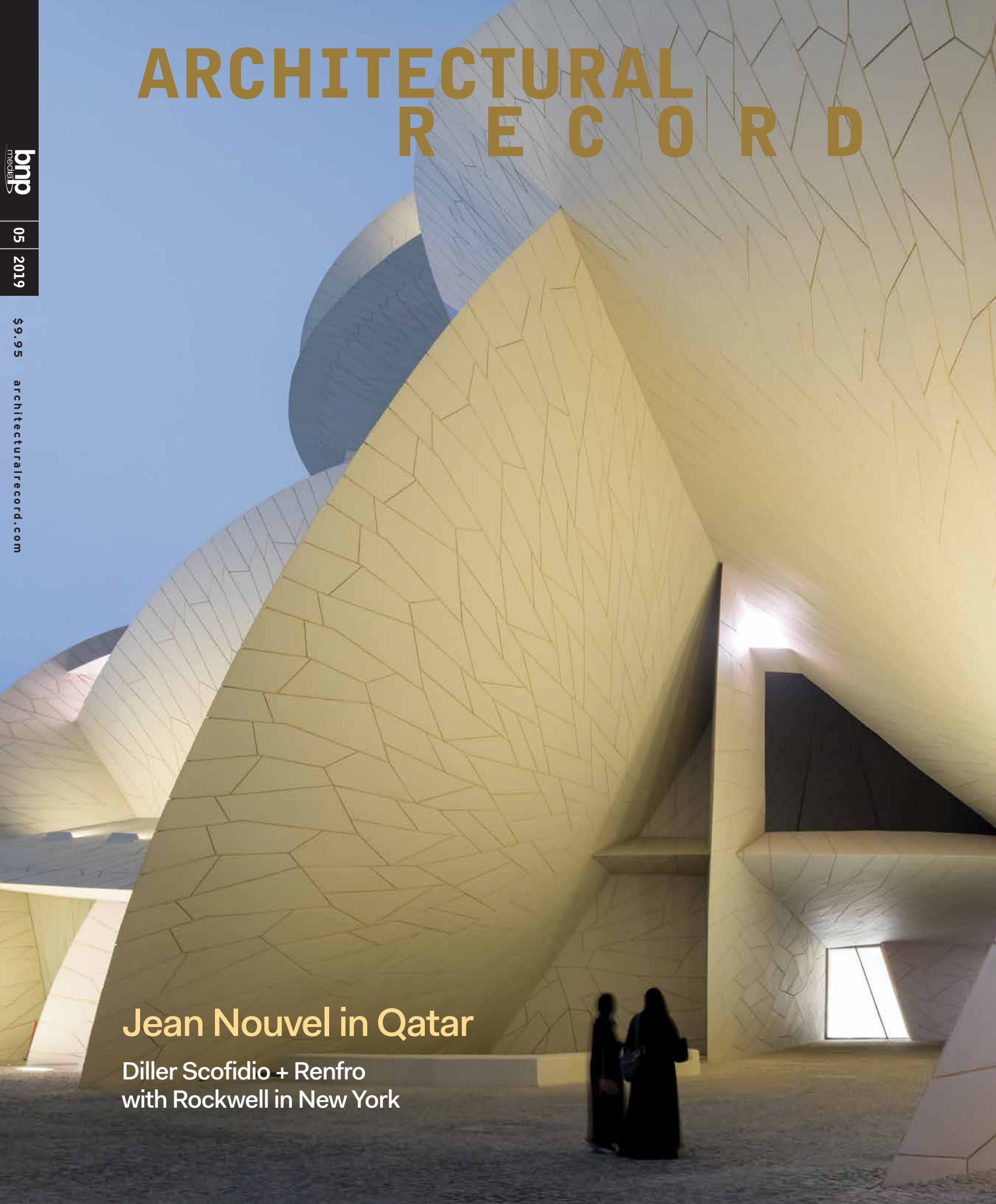
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Jean Nouvel in Qatar

Diller Scofidio + Renfro
with Rockwell in New York



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Kosciuszko à Gogo

The design of urban infrastructure affects city life as much as the design of its buildings. That's why replacing the **Kosciuszko Bridge**—a notorious pinch point in traffic between Brooklyn and Queens—was a high priority for Governor Cuomo. With heavy lifting from **HNTB**, **WSP USA**, and **Skanska**, a striking cable-stayed span has risen where the outdated bridge once stood, ensuring New Yorkers may still have trouble saying its name, but they never have trouble getting home. Read more about it in **Metals in Construction** online.

 **Steel Institute of New York**

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Architects: Ennead, NBBJ
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Health Conscious

When **NYU Langone** undertook the largest expansion in its history, the world-class hospital tasked **Ennead** and **NBBJ** with creating a patient-centered pavilion to house 374 single-occupancy rooms, 30 ORs, and the city's newest children's hospital. With so much going on inside the facility, its six-story atrium allows patients and staff to take in sunlight and the cityscape from expansive balconies—proving that architecture can be good medicine too. Read more about it in **Metals in Construction** online.

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ARCHITECTURAL RECORD



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COVER: NATIONAL MUSEUM OF QATAR, DOHA, BY ATELIERS JEAN NOUVEL. PHOTO BY IWAN BAAN.

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for the RECORD

Beyond the printed page: highlights from our website, live events, and other happenings.

OPENING CEREMONY

Managing editor Beth Broome (right) visited Doha for the inauguration of the Jean Nouvel-designed National Museum of Qatar (page 70) on March 27.



TRADE SHOW TOUR

In mid-April, associate editor Alex Klimoski (above, left) visited the tile and stone show Coverings 2019 in Atlanta, while publisher Alex Bachrach (above, right) attended Salone del Mobile in Milan.



TANGLED UP IN BLUE

On April 3, the artist Christo announced his plan to wrap the Arc de Triomphe in silvery blue fabric and red rope. The 2020 installation will precede a show at the Pompidou Center surveying the work of Christo and Jeanne-Claude.



DREAMS DO COME TRUE

The late artist and collector Linda Pace dreamed of a city of rubies, then shared this sketch (left) with David Adjaye, who designed the recently completed Ruby City art center in San Antonio (page 25).



RECORD ON THE ROAD

In late March, senior editor Joann Gonchar (above, far left) led a panel discussion in San Francisco with David Mar, Ibrahim Almufti, and Danielle Mieler (above, left to right) about seismic resilience.

ACROSS AMERICA

Days before Francis Kéré's installation opened at Coachella (page 176), the Berlin-based architect stopped in New York to chat with News and Web editor Miriam Sitz (right, at right) about his pavilion, opening in July, at Tippet Rise Art Center in Montana.



The Art of Designing for Culture

Two radically different approaches exemplify the latest architecture for new institutions.

IN THIS ISSUE of ARCHITECTURAL RECORD, we explore the ins and outs of two hugely ambitious new works of architecture, cultural buildings that could not differ more in how they negotiate the balance between form and content, structure and program, art and architecture.

The National Museum of Qatar, by Ateliers Jean Nouvel (page 78), is designed as a mind-boggling collision of 539 thin-edged, pale concrete disks—varying in diameter from 46 to 285 feet—that jut out and cut across each other to dazzling effect. Inspired by the desert rose—a mineral formation that lies beneath the sands of the Gulf state—Nouvel created a building of 324,000 usable square feet that snakes and curves around a spacious courtyard. As RECORD managing editor Beth Broome, who traveled to Doha to see it, writes, “It is impossible to imagine what lies behind the walls of cascading disks.”

Yet, as she reports, what lies behind are . . . more cascading disks. There is barely a wall that is not canted, making it extremely difficult to hang conventional works of art or certain objects. Yet the client, Qatar Museums, led by Sheikha Al Mayassa bint Hamad bin Khalifa Al Thani, was seeking an icon, a powerful symbol for the tiny, immensely wealthy country. Though Sheikha Al Mayassa is one of the world's leading art collectors, this is not an art museum where the record-setting \$300 million Gauguin painting she is believed to have bought will reside. Rather, a small collection of artifacts and models of animals dot the galleries, while commissioned films—including one by American artist Doug Aitken called *The Coming of Oil*—animate the angled walls. The program, which is focused on history and culture, didn't determine the architecture but evolved with it, over the decade it took to design and build.

Meanwhile, during the same period in New York, the architects of the Shed—Diller Scofidio + Renfro in collaboration with Rockwell Group—were working on their design for a new cultural facility, and they had no idea what would go on inside it (page 70). But that was the point: rather than have the architecture dominate, the building had to be so adaptable, it could accommodate future performing and visual artworks that the architects could not yet imagine. What they came up with was a design with a single eye-popping move—and it literally moves: an immense shell, clad in puffy panels of ETFE and wrapping an eight-level building, that can slide out on huge wheels over a plaza to create a vast performance space that could hold an audience of 3,000 people. But the base building itself is strictly utilitarian in its interiors and finishes—though incredibly flexible, with sliding glass panels and movable walls to create highly reconfigurable theatrical spaces and galleries, from intimate to enormous. As critic Joseph Giovannini puts it, “The building is a servant structure without an architectural ego.”

So here we have the alpha and omega of contemporary cultural architecture. The Doha museum may be the last gasp of the Bilbao Effect—a



stunning and improbable architectural vision that was so complex to build, it was one of the largest BIM projects in the world (“Every time you move a wall, you move the structure,” said one engineer of the challenge). The Shed, on the other hand, was inspired by a design idea that's 60 years old—the unbuilt Fun Palace by Cedric Price, a super-flexible skeletal structure with a kit of adaptable parts—and it employs the trusty old gantry technology of seaports to move its shell.

While the Shed and the National Museum of Qatar exemplify two radically different ways for architecture to address culture today, there is a third example in the pages ahead: Richard Gluckman's remaking of a stately electrical substation into an elegant contemporary-art space for the Brant Foundation in Manhattan (page 56). For this project, the architect embraced some of the industrial structure's old DNA—such as polishing up a steampunk gantry high in one gallery—and used a subtle touch to bring in light and new materials. He has created a remarkably fresh experience, demonstrating that the deft weaving of new with old can be nearly as inventive as starting from scratch—and is one more way to make a mark in the city and look to the future.

Cathleen McGuigan
Cathleen McGuigan, Editor in Chief

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perspective

The worst has been avoided, even though the battle is not completely won.

—French president **Emmanuel Macron**, speaking at Notre-Dame in Paris on the evening of April 15, after a fire ravaged the historic cathedral.

David Adjaye Wraps Up Art Center in San Antonio

BY MIRIAM SITZ



RUBY CITY—the newly completed museum by Adjaye Associates in San Antonio, Texas—is quite literally the dream come true of its late benefactor, Linda Pace. Shortly before her death in 2007, the artist, collector, and philanthropist had a dream about a city made of rubies. She sketched her vision and shared it with David Adjaye, whom she had met through a mutual friend, the British filmmaker and artist Isaac Julien. Pace's drawing served as inspiration for a project that has now come to fruition.

The two-story, 14,000-square-foot structure is composed of a base for the lobby and offices, with a second level of angular, cantilevered forms for the galleries. "From very early on, we pursued this idea of the podium with the volumes on top, which is really taken almost directly from Linda's sketch," Adjaye told *ARCHITECTURAL RECORD* at a press preview of the museum, while explaining that his study of San Antonio's Spanish colonial architecture also informed elements of the building's profile. Nestled onto a site south of downtown,

Ruby City's bright color and geometric form stand out in its formerly industrial neighborhood (above). Red concrete panels enclose the sculpture garden (right), which faces the San Pedro Creek.

next to the San Pedro Creek, the building is surrounded by a plaza and sculpture garden.

True to its name, Ruby City is clad in precast-concrete panels that are bright red. Fabricated in Mexico, they include chips of red and red-orange glass that sparkle in the intense Texas sun. The dynamism of the exterior is enhanced by varied surface textures, with the lower panels polished to a high shine and the upper panels left with a rough, exposed aggregate finish. For continuity, the



exterior entry court and interior lobby floor were poured using the same concrete mix as the panels.

While the front plaza is blindingly bright, the entrance to the building, covered by a cantilevered second-floor gallery, is relatively dark. A single shaft of light cuts through the shaded vestibule from a James Turrell-like opening.



A clerestory window at the top of the first gallery (above) pulls light into the space. The polished texture of the lower 10 feet of concrete cladding reflects light differently from the rough upper portion (bottom, right).

Inside the glass front doors, dark red walls and the polished red concrete floor further enhance the drama of moving from the outside in. In this darkened transitional space, Adjaye aims to “open your eyes, dilate your pupils.” Heading into the rest of the museum, “You’re then able to look at the color of the light,” he said, “because your eyes have opened. And then we go up into the experience.”

A sun-drenched stairway with white walls and blackened-metal handrails leads to the second-floor landing, where one encounters the first of several large, glazed openings. A pair of horizontal windows looks east toward Chris Park, a one-acre oasis Pace opened in 2005 in memory of her late son, Christopher Goldsbury, where multiple works by artist Teresita Fernández meld with the landscape. In the surrounding neighborhood, visitors can also see other “products of the 20th century,” Adjaye joked, including powerlines and industrial buildings and warehouses.

The 10,000 square feet of exhibition space are divided into three large galleries. The first two, with high ceilings of sloping planes, are illuminated from above by clerestory windows covered with expanded metal mesh, while the third gallery, which Adjaye describes as a “20th-century box,” has a flat 16-foot ceiling and a pair of horizontal windows that can be blacked out if necessary. (The inaugural exhibit will include an immersive video piece by Julien; Pace’s collection of the artist’s work is the largest in the world.)

Throughout the galleries, the matte gray concrete floors are pulled $\frac{3}{4}$ -inch away from the white walls, framing a 3-inch-deep channel alongside the slab—a subtle but elegant

detail that allows cords to be hidden and also imparts a sense of groundedness.

The openings between rooms usher visitors smoothly from one gallery to the next, terminating in an exit staircase to the lobby, facing the stair one first ascended to enter. “It’s a journey, and starting and ending in exactly the same place is important in understanding the experience,” Adjaye said. “What I’ve done is to wrap that in a loop that hopefully feels natural.”

On the lower level, staff offices face the sculpture garden where Nancy Rubin’s 1997 piece entitled *5,000 lbs. of Sonny’s Airplane Parts*, *Linda’s Place*, and *550 lbs. of Tire-Wire* stands. But the best view of this artwork is from the conference room, dubbed the “jewel box” by Adjaye, which is off-limits to the public. A set of orangey-red fiberboard doors, created by artist Jorge Pardo, adorn the entrance. The room is wrapped in panels of reclaimed long-leaf pine and anchored by a 2,500-pound polished-concrete table, designed by the architect. “The trustees wanted a beautiful space that would be a memorial to Linda,” says Kelly O’Connor, head of the museum’s collections and communications, who began working with Pace in 2006 as her studio assistant and registrar. “David took that vision and elevated it.”

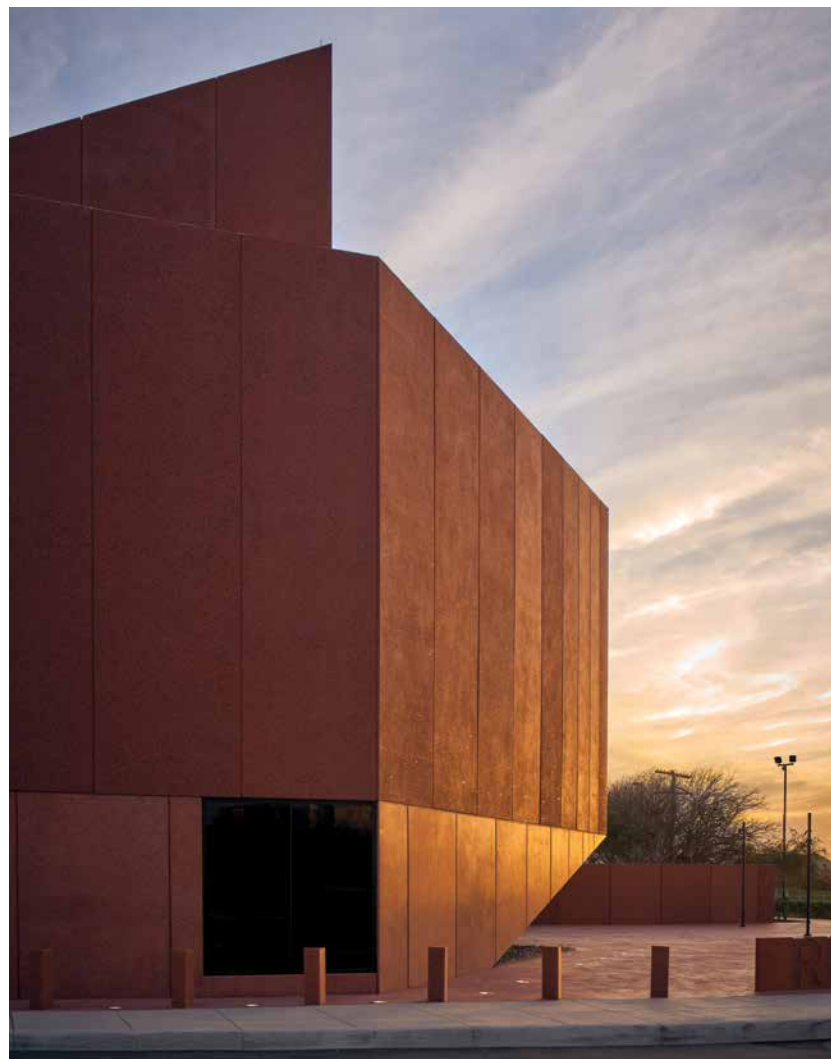
For some, the building may call to mind the nearby public library by Ricardo Legorreta (1995)—another monumental, geometric red-orange structure. But similarities between the two end there: the library’s painted exterior is bright but static while Adjaye’s building glitters. And where Legorreta’s work has become alienated from its urban context by a closed-off street presence and road-bound site, Ruby City’s location offers an opportunity to connect disparate parts of the community.

Situated in a formerly industrial area, where the old factories are increasingly being converted into luxury condominiums, the building’s entrance

points away from those developments toward the historically less affluent parts of town.

With free admission, a slate of public and family-oriented events planned for its October opening, and a staff prepared to offer bilingual tours of the collection, the institution seems poised to fulfill Pace’s dream of being, as O’Connor puts it, “a gift to the people of San Antonio.”

Pace lived in the Alamo City most of her life. Her parents founded Pace Foods in the late 1940s, which she and her then-husband grew into a multimillion-dollar enterprise. In 2005, she opened a contemporary-art residency program and gallery called Artpace in downtown San Antonio. Now, more than a decade after her death, the completion of Ruby City is the fulfillment of her wish to share her collection of more than 900 largely contemporary works. (That number is still growing under the direction of Ruby City’s trustees.) “It’s extraordinary to see this realized,” says O’Connor, “and to know that we were able to stay true to the sketch of the dream Linda had.” ■



Design Competitions Raise Questions of Compensation

BY DEANE MADSEN

FEW OCCUPATIONS require as rigorous a set of academic courses and professional exams while promising so little by way of remuneration as architecture. And, for early-career architects, salaries can be precarious—and in some cases nonexistent—while emerging designers chase dream commissions, and prioritize prestige over pay when taking jobs.

Recent questions about the internship practices of this year's Serpentine Gallery pavilion winner, Junya Ishigami, have again brought the topic of competition compensation to the fore. Shortly after the February announcement of Ishigami's selection, designer Adam Nathaniel Furman circulated an image purporting to be a screenshot of an e-mail soliciting unpaid work at the firm. Although Ishigami's office could not be reached for comment, the Serpentine Gallery later issued a statement requiring Ishigami to pay all those working on his commission for the annual summer pavilion. (The same issue arose in 2013 when fellow Japanese architect Sou Fujimoto won the Serpentine commission.)

Ishigami's Serpentine Pavilion will open June 21, 2019, in London's Kensington Gardens (rendering, right). Sabin's installation *Lumen* (opposite) was installed in the courtyard of MoMA PS1 in New York during the summer of 2017.

In the United States, unpaid work is illegal. Federal law prohibits employment without a minimum wage, which varies from state to state, but student internships offer a loophole, allowing non-employee interns to receive on-the-job training or school credit in lieu of payment.

The AIA's official stance on internship payment is as hard to pin down as its exact definition of an intern. "If you, as an AIA member, want to run for office or want to submit a project or your firm for an honor or award, you have to state that you do not employ, or have not employed, working students or unpaid interns," said AIA deputy general counsel Terence F. Canela in a video for the

organization. Beyond that, the AIA's Code of Ethics requires its members to follow federal laws, which are murky on the subject at best.

Design competitions also remain a complex realm within the profession. Many offer more in the way of prestige and recognition than they do in prize money. Some open competitions are criticized for soliciting thousands of hours of design work with pay reserved for a small group



IMAGES: © JUNYA ISHIGAMI + ASSOCIATES; PABLO ENRIQUEZ (OPPOSITE)

of finalists. Other invited competitions offer build budgets and travel stipends, but leave employee overhead to be covered by the firms.

There's no doubt in the mind of 2017 Young Architects Program (YAP) winner Jenny Sabin that designing *Lumen* for MoMA PS1's annual summer pavilion is one of the biggest highlights of her career. According to the museum's press office, the year Sabin won, the

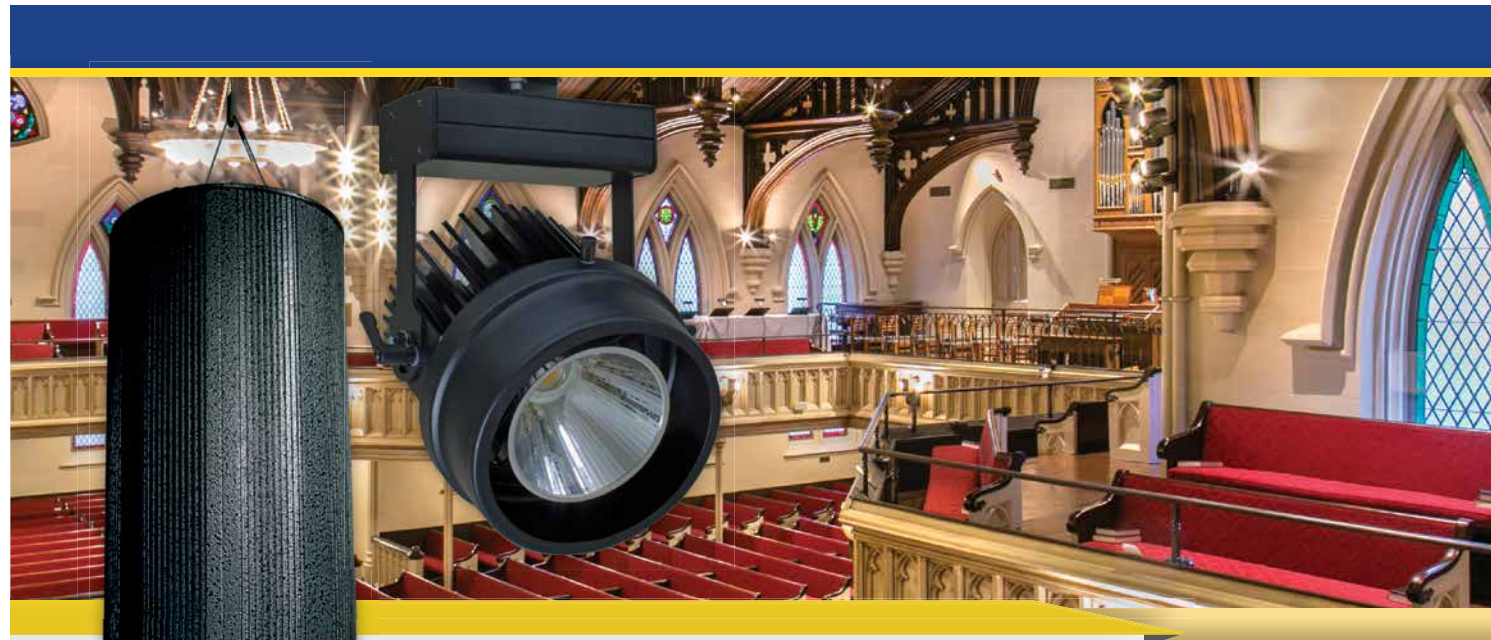
YAP began offering finalists \$5,000 to develop their designs and produce an exhibition model; the ultimate winner receives an additional \$15,000 toward design development, and \$100,000 for build-out. But even with those designated funds, Sabin says that "part of the creative maneuvering of producing the design is finding ways to bolster the budget in support of the project." YAP winners are not allowed to fund-raise, but "there are

ways of thinking creatively around the budget," Sabin tells RECORD. "You have to organize a team of professionals, such as structural engineers and contractors, and because of the size of their companies, many of those people are able to do pro bono work."

A relative newcomer on the American competition circuit originated with Exhibit Columbus, the annual program in Columbus,

Indiana, celebrating art, architecture, and community. Named for the philanthropists who helped shape the city's notable architectural legacy (in 30 square miles, one can find works by Eliel and Eero Saarinen, Cesar Pelli, Kevin Roche, I.M. Pei, and others) and meant to encourage the next generation of architectural creativity, the J. Irwin and Xenia S. Miller Prize offers \$70,000 build budgets to each of five winners. But Richard McCoy, who is director of Landmark Columbus, the organization behind the Exhibit Columbus program, admits that organizers have never verified a firm's accounting for Miller Prize-winning projects. "We offer to help the winners find local fabricators and people to build or work with them, and we've had a tremendous amount of in-kind donations to all of the installations," McCoy tells RECORD. "But I also recognize that some studios don't view this as a profitable enterprise," he adds. "They all do it for the love of the art, and because it's a chance to experiment in an interesting context."

While, generally, these types of commissions are not money-making ventures, for Sabin, participating in the MoMA PS1 program yielded creative dividends, and the exposure for *Lumen* was "stratospheric." ■



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Green Design Needs a New Narrative, Says USGBC Report

BY KATHARINE LOGAN

THE GENERAL PUBLIC is woefully unaware of the role green building can play in mitigating climate change, according to new research from the U.S. Green Building Council (USGBC).

A report published in April titled “Standard Issue” outlines how study participants overwhelmingly agree that environmental concerns are now urgent, and that a majority of respondents want to live in a healthy environment. However, most do little to address environmental issues in their daily lives (they find it too daunting), and don’t consider green buildings part of the solution. In fact, when asked to select which terms most strongly correspond to an environment that promotes a long and healthy life, only 11 percent picked green building.

These findings suggest that the sustainable design community has “a messaging mountain to climb,” said Mahesh Ramanujam, USGBC president and CEO, in a statement. “We are not reaching the broader population effectively enough to change their behavior on the scale necessary to combat climate-related risks.”

To mobilize change, the report finds that the most effective communications connect green building to local, human effects. A message that emphasizes healthy outcomes for present and future generations, noting that change is needed now to avert catastrophe by 2030, bumps the proportion of people extremely or very likely to take action to 49 percent.

Broadening the base of support for environmental priorities by linking them to health is also an AIA strategy, says Marsha Maytum, chair of the AIA Committee on the Environment and principal at the San Francisco-based Leddy Maytum Stacy Architects (LMSA). “Health is not controversial or partisan. It’s for the benefit of everyone,” she tells *RECORD*, “so it’s a good way to put the environmental message forward without overwhelming people with the entire topic of climate change.”

Architects who are beginning to see some of their clients prioritize health- and wellness-based standards over LEED also welcome the research as timely. “The definition of sustain-



Perkins+Will is pursuing LEED, WELL, and FitWell certification for its corporate office in Dallas, demonstrating the interconnected nature of green building standards.

ability is evolving,” says Mary Dickinson, regional sustainable-design leader at Perkins + Will’s Dallas studio. “In a client conversation, I have to be ready to start with energy and water, or health and productivity, or resilience, and show how it’s all interconnected in a living systems design.” ■

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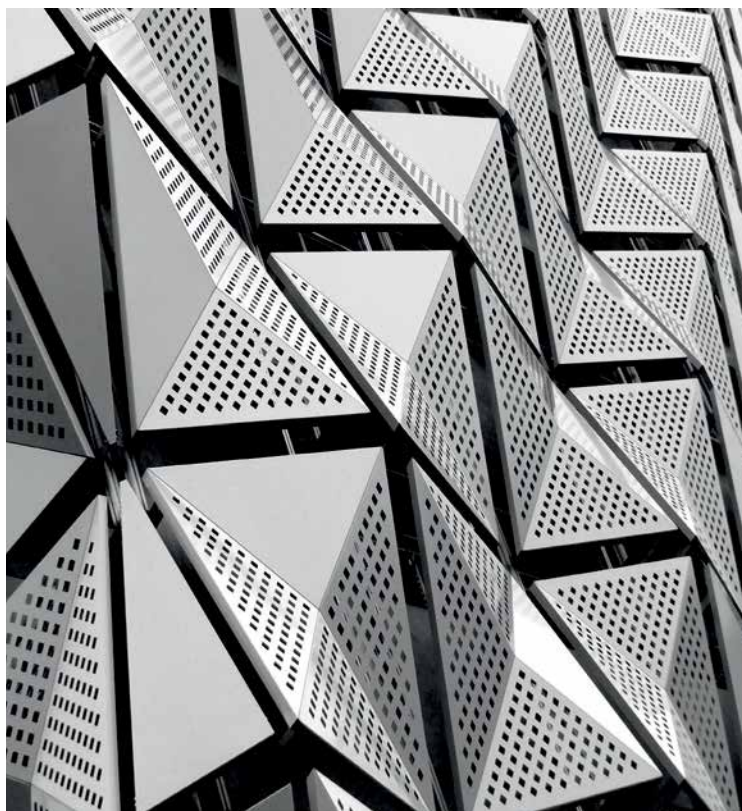
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Michel Rojkind

BY BETH BROOME

A NATIVE of Mexico City, Michel Rojkind established his practice, Rojkind Arquitectos, in the sprawling metropolis in 2002. The 49-year-old architect is known for forward-thinking expressive work that pushes formal and material boundaries. Last month it was announced that Rojkind was appointed senior vice president of architecture for the rapidly expanding company WeWork, where he will be overseeing all ground-up projects. RECORD met with him in the company's New York headquarters.

You recently moved to New York from Mexico to join WeWork. How did this come about, and what will you be doing in your new role?

After Bjarke Ingels was announced as the company's chief architecture officer, we started having some conversations about WeWork doing ground-up buildings in Mexico. He invited me to New York to meet with the cofounders, Adam [Neumann] and Miguel [McKelvey], and we talked about how buildings can add to and engage communities and elevate the world's consciousness—ideas I've been pushing as an architect. So, in a way it was kind of a seamless move. What I'll be doing is helping build design credibility, where the message of the company is carried out by the architecture. I'm assembling a design team within WeWork. I don't want it to be that big—the whole idea is to have a flexible platform where we have a core team that collaborates with other designers in the places we are building. Of course, Bjarke's overseeing everything that we're doing.

You have a thriving practice and have had some significant commissions recently. What is happening with your office?

My office is still running in Mexico. I have a pipeline of projects that I need to finish, but I'm going to be long-distance, with my full attention here at WeWork. We'll figure it out, because even my clients from Mexico want to do stuff with WeWork. I mean, perhaps my company could be an embassy for the company in Mexico. But, for the moment, Rojkind Arquitectos is running parallel to this.



How does the WeWork mission jibe with your design vision, and how is your design vision a good fit for where they want to go?

When I left my practice behind in Mexico, I didn't want to feel that I was leaving my family and coming to work in a company; I wanted to feel that I was coming into another family. And I have found that we share a vision to improve our cities, improve our way of life—things that, to me, architecture has always been about. When I say it was a seamless transition, it's because we have those same goals. But now there is a broader reach and bigger capacity to make an impact. WeWork has talented engineers and space analysts. So the questions we are asking together are: How will we apply all that WeWork has learned in nine years of working inside refurbished spaces? What are we learning from spatial and behavioral analytics? And

how do we translate those things into buildings and the language we will develop for WeWork's new phase, which is about an external face toward the city and what it can do for the community.

Your first project will be in Bentonville, Arkansas: a 200,000-square-foot building that the We Company is partnering on with the private-capital group Center City. What can you tell me about that?

Center City started working on a new development in Bentonville and wanted WeWork to come in and operate the building. We said,

'Yeah, we can operate it, but we can also do the building.' They liked the idea, but they had already done an RFP, and when we realized we would be displacing someone, we suggested a collaboration instead. This is an important piece: to have local collaborators in on the design process from the beginning. I hope this first project will show how open and flexible we are—even though WeWork is a huge company, we don't want to come in and do everything ourselves. What they asked for was an office building, but we're looking at how we can activate it with other components, like education, culture. We are asking questions like, 'How does the building become a platform for engaging society?' and 'What can the building offer to this community?' We're learning from the history of the place, the houses and the porches, the bike trails all over Bentonville. We're trying to be receptive to all that and then deliver a tailor-made project. ■

American Academy of Arts and Letters Honors Architects

Pritzker Prize-winner Eduardo Souto de Moura has received the \$20,000 Arnold W. Brunner Memorial Prize. Hernan Diaz Alonso, Mario Gooden and Mabel O. Wilson, Eric Höweler and Meejin Yoon, and Anne Rieselbach won the Academy's four other 2019 architecture awards.

AIA Introduces the Invest in America Act

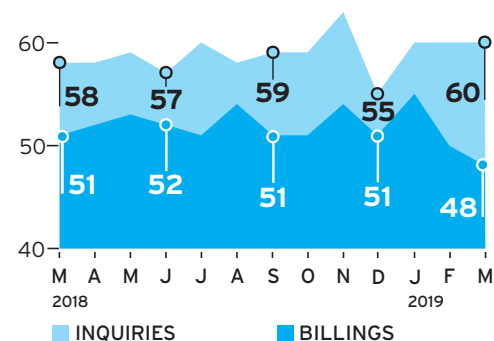
A new piece of federal legislation, spearheaded by the American Institute of Architects, would repeal the Foreign Investment in Real Property Tax Act, which imposes capital-gains tax on international investors who fund domestic real-estate projects. The proposed bill, HR2210, aims to increase investment in buildings and infrastructure.

L.A. County OK's LACMA's New \$650 million Building

The latest version of Peter Zumthor's controversial design for the Los Angeles County Museum of Art has been approved by the county Board of Supervisors. Ten percent smaller than first proposed, the building will span Wilshire Boulevard, so must receive approval from the city, which owns the airspace above the roadway.

Umbrella House Named to the National Register of Historic Places

One of Paul Rudolph's first solo projects, the house was commissioned by Philip Hiss in 1952 as the model home for his Lido Shores development in Sarasota, Florida. The Sarasota School of Architecture house is the ninth project of that style to make the list.

**Architectural Billings Index Dips into Negative Territory in March**

After a 25-month run of positive billings, the ABI has dipped to 47.8, down from 50.3 in February. (Scores over 50 indicate an increase in billings.) However, indicators of future work, the project inquiries and design contracts indices, both remained positive, at 59.8 and 50.8 respectively.

TWO CONNECTED VOLUMES TAKE ADVANTAGE OF THE PASTORAL SITE AND
DRAMATIC VIEW. BY SARAH AMELAR

CRAIG HARTMAN and his wife, Jan O'Brien—both architects—spent nearly 10 years visiting their weekend property in Sonoma County, California, before breaking ground. They stayed in a yurt on the rolling 35-acre former cattle ranch and contemplated a gentle architectural intervention. Finally, the first phase, a guest/caretaker cottage, is done, serving as the couple's own retreat until the main house is built, and embodying key ideas for the whole site.

"Beyond sustainability," says Hartman, "we wanted land we could make environmentally even better than we'd found it." Removing the cattle dramatically helped restore native ecosystems, allowing oak seedlings to proliferate and mature (instead of becoming grazing fodder), and protecting on-site creeks from contaminated pasture runoff. But without client pressure, the project became "like a hobby," he recalls. "I worked on it here and there during weekends." He savored the leisurely pace and modest scale—a welcome change from the vast structures he's handled as a partner in SOM's San Francisco office, where he designed, nota-

The night pavilion (above, left) is connected to the day pavilion (above, right) by a canopy (right). Inside the day pavilion, the living area (right, below) has a sweeping view of the countryside.

bly, California's Oakland Cathedral (RECORD, January 2009) and the U.S. Courthouse in L.A. (RECORD, March 2017). "With this house, my wife indulged me," he says. "Though she'd built her entire practice on smaller-scale work and interiors, she generously let me design it." (A young associate, Anesta Iwan, is collaborating on the compound, while O'Brien, as project architect, is overseeing it all.)

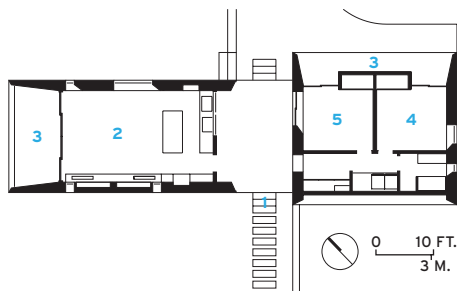
Nestled within a hillside oak grove, the net zero carbon cottage is composed of a "day" and "night" pavilion, joined by a canopy. Each of these volumes, totaling 840 square feet, is a rectangular tube, structured with renewable, heavy timbers and partially cantilevered to reduce the footprint. The exterior recycled-steel cladding is dark-colored to recede visually. The day pavilion contains a double-height living/dining/kitchen area, while its nighttime counterpart houses the master bedroom and art studio/guest room.

As in the future main house, the fenestration is oriented for passive cooling, privacy, and long, sweeping landscape views, as well as contemplative near ones. Heat-venting skylights with subtly colored baffles and LED components temper the interior illumination, in tandem with the changing qualities of



daylight. A ground-mounted PV array, elsewhere on-site, covers the property's energy needs while feeding excess power back into the grid.

The owners hope to make their cabin available for visiting artists, once the main house is built. When will that happen? "We were going to begin construction this spring," says Hartman, "but now we're putting it off another year." Stay tuned. ■



PLAN DAYTIME PAVILION

NIGHTTIME PAVILION

- | | |
|-------------------------|-----------|
| 1 ENTRY | 4 BEDROOM |
| 2 LIVING/DINING/KITCHEN | 5 STUDIO |
| 3 PORCH | |

perspective **interiors**RICH REFERENCES IN CARBONDALE'S NEW SHOP FOR DOLCE & GABBANA
TRANSPORT VISITORS BACK TO BAROQUE ROME. BY SHEILA KIM

RETAIL DESIGNERS commonly show restraint in order to let the merchandise shine, but when conceiving a Rome boutique for Dolce & Gabbana, Carbondale scoffed at convention—and so did the client. “I had no fear that the architecture would overpower the products,” says Eric Carlson, principal of the Paris-based firm. “I was more worried about the opposite occurring.” Indeed, the Italian fashion company’s bold designs stand out on their own, and its founders—Domenico Dolce and Stefano Gabbana—have adopted a retail strategy just as bold, collaborating with different architects to create distinctive stores rather than rolling out the same branding concept from city to city (RECORD, April 2018 and September 2017).

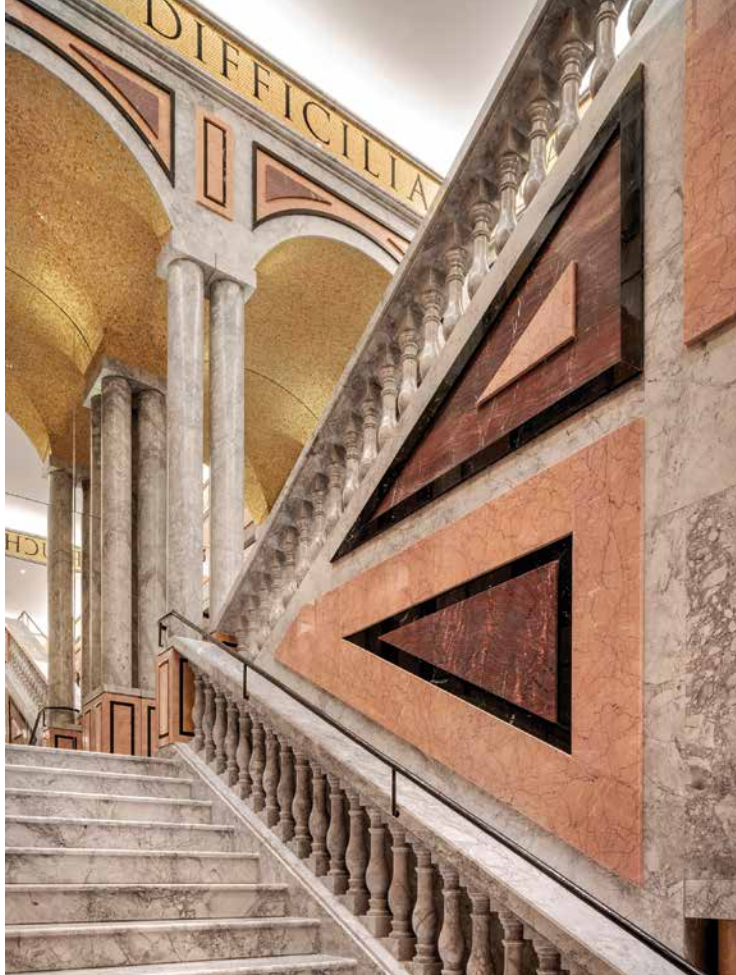
The bi-level 10,700-square-foot boutique occupies a listed 16th-century building on the city’s renowned Piazza di Spagna. Working within the existing historic structure, Carbondale devised a journey back to baroque-era grandeur. The firm’s skilled approach to luxury, illusion, and craft creates an aura of Rome that greets visitors the moment they enter the vestibule, with a stone-mosaic medallion set

A mirrored wall visually “completes” the vault of a men’s gallery, animated throughout by a dynamic digital fresco (above). An ornate ground-floor salon (right) is illuminated by a 22-foot-high skylight atop an intricately tiled dome.

into the Calacatta-marble floor. It depicts the city’s mythical founders Romulus and Remus with their mother (a she-wolf). A path through two contiguous spaces with lower ceilings and progressively narrower columns and doorways creates a forced perspective that seemingly elongates the corridor—a brilliant segue into the first of the shop’s lavishly appointed salons.

Though some of the rich surfaces and ornate architectural elements look historic, they are new and custom. Decorative columns throughout are made with board-formed concrete (save for marble columns in the staircase). The floors are marble with intricate inlays of brass, stone, or glass mosaics, all in a range of hues that refer to the city’s past. Modern touches also hint of papal Rome, such as glass walls backed in cardinal-red moiré silk and Murano-glass chandeliers with pops of red and gold.





The architects used a fully mirrored wall to create the illusion of expansive space on the arcadelike landing of a marble staircase—leading to the men's salon on the upper level—making it appear double in size.

On the ground floor, gold-mosaic-lined friezes decorated with Latin inscriptions draw the eye upward to a ceiling topography comprising marble- or brass-clad soffits, brass trim framing cove lighting and marble ceiling panels, or Vatican-inspired vaults and domes—the latter including a pair capped by 35-inch-diameter frosted-glass apertures that replaced existing industrial-sash skylights. Gradating mosaic rings within their spheres radiate outward from the apertures, producing a dramatic Pantheon-like effect in each.

Carlson and his team continue the illusionary scheme up the staircase leading to the men's shops. Here, an expansive mirrored wall reflects the steps, so that the arcadelike landing appears double in size. An even more surprising trompe l'oeil effect awaits shoppers in a half-vaulted linear clothing gallery on the second level. LED screens along the length of an entire wall and on the curved ceiling loop a four-minute Sistine Chapel-inspired animated video sequence of battling Roman gods and goddesses, an ensuing thunderstorm, and finally a peaceful sunset, all to a background audio of Gregorian chants. A mirror on the opposite wall visually completes the vault “and creates a Rorschach-like movement to the ‘fresco,’” says Carlson. Psychedelic and memorable, this digital-meets-Old World feature amazes visitors, while fulfilling the client's wish for an experience unique to the location. ■

Former RECORD editor Sheila Kim is a Brooklyn-based journalist who writes about commercial and residential architecture, interior design, and products.

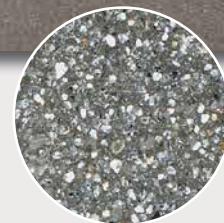


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THE ROOF OF A NEW RETAIL AND COWORKING BUILDING IN SINGAPORE'S MAIN SHOPPING DISTRICT PROVIDES A LUSH PUBLIC RESPITE. BY ALEX KLIMOSKI



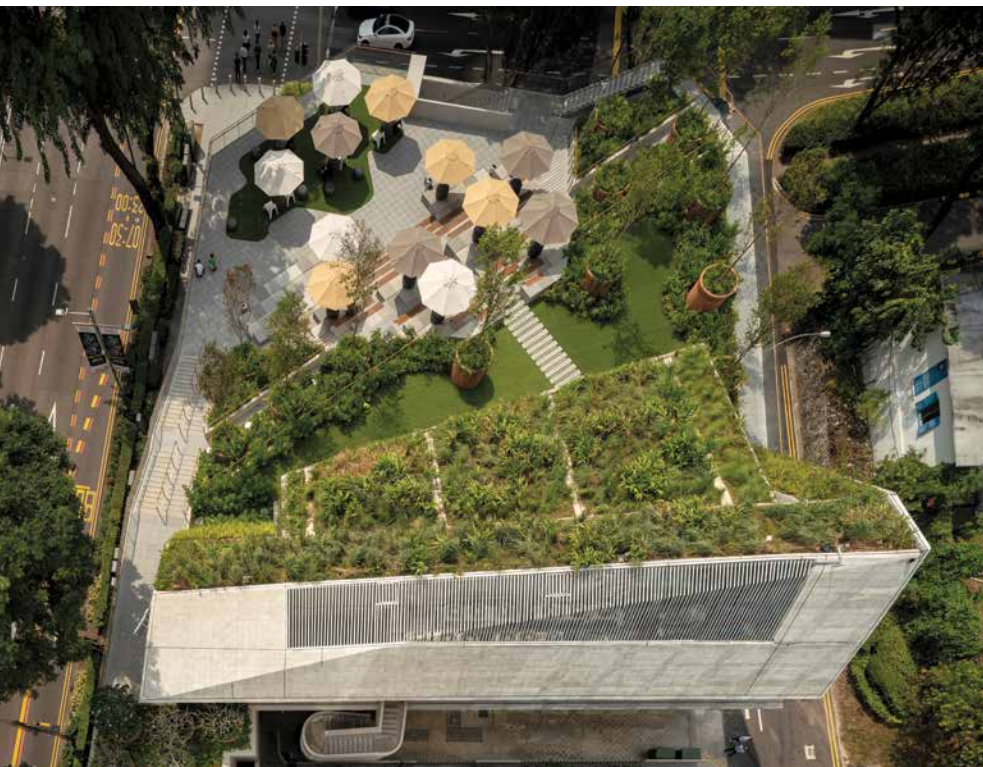
ACCORDING TO Wong Mun Summ, a founding director of Singapore-based WOHA, the firm's latest project, Design Orchard—a 25,300-square-foot building with coworking and retail spaces that showcase local artists and designers—is a “quick fix.” Commissioned by a joint venture that includes the Singapore Tourism Board and the Textile and Fashion Federation Singapore, it is intended to last only 15 years while long-term plans to develop a greener, more pedestrian-friendly design district are rolled out.

The three-story reinforced-concrete building is located on a formerly empty corner site along Orchard Road, the city's major shopping boulevard. Because the building required adaptable areas for pop-ups and incubator spaces, the architects had to make the design flexible. But while the future of the building and its program are uncertain, “the one thing we were quite sure about was that we had to design an interesting and usable public space that could be accessed from Orchard Road itself,” says Wong.

To do this, the architects set back each of the upper two floors, creating an open amphitheater, with tiered seating and steps that lead up to a luxuriant garden at the top. “The



Prominently located on Orchard Road, Singapore's famed shopping corridor, Design Orchard (above) provides coworking and retail spaces for local artists and designers. Its tiered rooftop (top) serves both as recreational space for the general public and a venue for entertainment events.



Abundant flora on the roof optimizes the thermal performance of the concrete structure's interior.

building is meant to facilitate Singaporean design, particularly fashion," the architect explains, "so we thought about how there could be fashion shows and other types of entertainment events on the rooftop." It was also important to create a seamless transition from the street to the roof. A stair is visibly placed at the building's entrance, so "it's very clear how you get up there," says Wong. "You could literally have a fashion show starting on the third floor and coming down and out to Orchard Road."

The Design Orchard rooftop is both a venue and a lush respite from the crowded urban streets below, providing shade and seating. As in most of WOHA's projects, abundant flora, fluidly integrated with the building, is the most striking element. The concrete structure worked to the architects' advantage because "we wanted it to be a gray space," says Wong, "so that the landscaping becomes the content, and the building is the backdrop." In addition to its rejuvenating qualities, the sloping green roof also optimizes the thermal performance of the interior.

As Wong puts it, the project is part of Singapore's effort to "keep up with the times" and to reimagine the popular shopping area as a recreational destination. Completed at the beginning of the year, it is already activating the streetscape while the city continues to study how its vision will unfold. "Hopefully, it can be a model for what can be done on a larger scale," says the architect. ■

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The Auerbach House in Jena, Germany, was designed by **Walter Gropius** with **Adolf Meyer** in 1924, when Gropius was the director of the Bauhaus in Weimar (which soon moved to Dessau). With its distinctive cubiform volumes, asymmetrical plan, and flat roof, the villa represented an early example of the school's architectural principles, and continues to serve as a private residence in this university town.

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Titan of Industrial Architecture

Albert Kahn in Detroit: Building the Modern World, by Michael H. Hodges. Wayne State University Press, 224 pages, \$39.99.

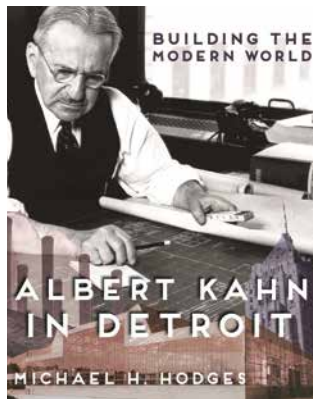
Reviewed by Wendy Moonan

THE ARCHITECT Albert Kahn, born in 1869 in Rhaunen, Germany, was known as “the man who built Detroit.” Between 1902 and his death in 1942, his firm, based in the city, was responsible for some 2,000 built projects, including—famously—car factories for Packard, Ford, Hudson, Studebaker, and Chrysler. Kahn’s plants also produced much of the battle materiel for World War I and II, as Michael H. Hodges, *The Detroit News*’s fine-arts reporter and an amateur photographer, notes in his readable, well-documented book. Yet even though Kahn’s firm survives to this day, the founder was largely forgotten after the last war. This book is meant to give the man his due, and it’s quite a tale.

Kahn was the oldest of eight children born to poor German-Jewish parents who immigrated to Detroit in 1881, and he never finished elementary school. His father, a rabbi by training, opened a restaurant, where his mother cooked (they lived upstairs). When a fire consumed both the restaurant and the living quarters, Albert, at age 12 the only one in the family who spoke English, became the breadwinner. He got a job as a gofer in an architecture firm and, for extra money, mucked out horse stalls before work.

Then luck arrived. He joined the architecture office of Mason and Rice, whose principal, George D. Mason, mentored him. Kahn soon became a superb draftsman. He was energetic, determined, talented, and curious; at 19, he became the firm’s “house designer.” When he was 21, the young apprentice won a \$500 traveling scholarship from *American Architect and Building News* and set off to study and sketch masterpieces of architecture and vernacular buildings in Europe.

Kahn returned to Detroit and his old firm, where he was soon named chief designer. By 1902, he had founded Albert Kahn Associates, enlisting his brother Julius, by then an engineer, to join him. Julius experimented with creating stronger reinforced concrete and got a patent on his system, which soon enabled the firm to build fireproof concrete factories with open loft areas, wide spans, and glass walls. After Packard (10 buildings beginning in 1905) came the Ford plants in Highland Park and



Dearborn (and eventually the River Rouge complex) and the General Motors Headquarters (now called Cadillac Place) in midtown Detroit. He did the Argonaut building in downtown Detroit, which housed the GM Tech Center, and the celebrated GM exposition building at the 1933–34 Century of Progress World’s Fair in Chicago.

In addition to car plants, Kahn created hospitals, synagogues, a conservatory, and

even grand suburban houses in various styles for Detroit’s automakers, including the Edsel & Eleanor Ford House (1926). At the University of Michigan alone, Kahn designed more than two dozen buildings (or additions); in downtown Detroit, he designed the Fisher Building, an Art Deco landmark, the Detroit Athletic Club, the Kresge Building (now K-Mart) and the Detroit Police Headquarters, among others.

During World War I, the firm executed \$200 million in construction for the U.S. government. What is less known is that, in 1917, Kahn built a tractor plant in the USSR, which led to his being hired as a consultant to the Soviets. Kahn opened an office in Moscow and, between 1929 and 1932, was responsible for more than 500 factories—which later became production plants that helped to defeat the Nazis.

In 1941, Kahn was busy (he was nicknamed “the human steam engine”) equipping the United States for the Second World War, and reportedly employed 450 architects and engineers.

When he died of heart problems in December 1942, the *New York Times* called him “the fastest and most prolific builder of modern industrial plants in the world.” Lost in the obituary, Hodges notes, was attention to Kahn’s considerable nonindustrial work. The author also explores his subject’s dedication to work, family, and friends, and his ability to buck widespread antisemitism. And it is heartening to learn that his Fisher Building, New Center Building, the Argonaut Building, and Detroit Free Press building, long neglected, have come back to life. ■

Wendy Moonan, based in New York, writes on design and architecture and is the author of *New York Splendor: The City’s Most Memorable Rooms*.



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Thinking Color in Space: Positions, Projects, Potentials, by Kerstin Schultz, Hedwig Wiedermann-Tokarz, and Eva Maria Hermann. Birkhauser, 368 pages, \$58.

Reviewed by Norman Weinstein



The use of color in architectural practice has been a maddeningly difficult topic to find addressed satisfactorily in books. Perhaps the scantiness of the coverage reflects the lack of emphasis on color in design school curriculums. Whatever the reason, this new publication by a trio of German educators and practitioners is welcome. This title is precise. The authors explore how color intersects with geometry, light, and structure in a wide range of contemporary design projects. Examples include the headquarters for the bakery 21 Cake from People's Architectural Office in Beijing (2012), where shimmering misty glass in primary colors lines the corridors, and Steven Holl's Chapel of Saint Ignatius in Seattle (1997) that channels otherworldly light into the interior through volumes with colored lenses and surfaces.

The authors' enthusiasm for their subject is vividly reinforced with luminous graphics and illustrations, beginning with two-dimensional work. Paintings from Delacroix to the Impressionists and the canvases of Marc Rothko set the stage for a thorough analysis of three-dimensional color application in architecture. While eschewing extended theoretical discussions, Schultz, Wiedermann-Tokarz, and Hermann concentrate on how color in buildings has been viewed historically by Winckelmann, Semper, Loos, Le Corbusier, and others.

Most important for practitioners is the way the authors zero in on the experience of color for those inhabiting architectural spaces. It is hardly a new notion that surface color can make a space seem wider or narrower, larger or smaller. The book, however, presents many examples where color is more than a simple perceptual tool to make the most of limited space; it can affect the human response in subtle ways. For example, the French architect Dominique Coulon transformed institutional corridors in a seniors' health care facility in Orbec, France (2015), into inviting meeting spaces by using optical tricks with floors and walls partly painted red and partly painted white. This perspectival shift, or anamorphosis, which changes depending on where the viewer stands, is also dramatically shown in the reception room of Optimedia in Moscow (2017) designed by VOX Architects. There, canary yellow portals and floor surfaces seem to float monumentally above a blue floor.

The authors also demonstrate the potential of color to act as a kind of "material" capable of creating a sense of depth, texture, and spatial complexity for aesthetic pleasure. In an amusing example, architect Oskar Putz created the Kix bar in Vienna (1987), where painted arches and actual arches seem to dance intoxicatingly about.

A book with this ambitious a focus has to suffer some shortcomings. You won't find guidance for the practical business of negotiating color selection with clients or the role color plays in drafting and modeling, or, for that matter, clues to cultural influences on choices of certain hues beyond Europe's and North America's. The impact of new coloring compounds and technologies is not discussed, and such historic movements as the 1960s "supergraphics"—radiant with electrifying colors rooted in Pop Art—are bypassed. But what you will invariably discover is how to refine and deepen your architectural thinking coloristically. ■

Norman Weinstein is a poet and music critic focused on how these fields relate to architecture.

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MoMA Showman

Architecture and Design at the Museum of Modern Art: The Arthur Drexler Years, 1951-1986, by Thomas S. Hines. Getty Publications/Getty Research Institute, 208 pages, \$50.

Book review by Victoria Newhouse

THIS METICULOUSLY researched account relates how, from 1951 until 1986, the curator and director Arthur Drexler gave the influential Architecture and Design department of New York's Museum of Modern Art "a new purposeful cohesiveness." More compelling is Thomas Hines's behind-the-scenes revelations of the pitfalls of insider museum politics.

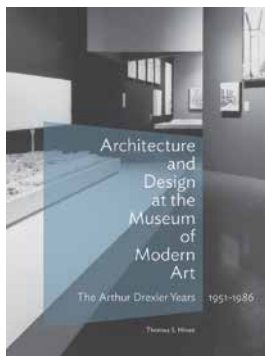
Drexler's career is a tale of triumph and tragedy. It was a triumph that Drexler, who came from a modest Jewish family in Brooklyn and was educated in public schools (albeit the selective High School of Music and Art), and did not finish his architecture studies at Cooper Union, went to work for leading architect and designer George Nelson and then was embraced by MoMA's patrician and Harvard-educated curator, the architect Philip Johnson. Johnson, the founder of the museum's department of Architecture and Design—and two-time head of the department—was so impressed by Drexler's writing on the Glass House (1949) for *Interiors* magazine that he hired the brilliant young critic in 1951 as the architecture curator; in 1956, Drexler was named department director. It was a tragedy that his tenure was later compromised, according to Hines, by the critical failure of two of his major exhibitions, *Architecture of the Ecole des Beaux Arts* (1975) and *Transformations in Modern Architecture* (1979).

Drexler's shows in his first five years at MoMA included the usual suspects, among them the work of Le Corbusier, postwar architecture in the U.S., and De Stijl. But he also introduced subjects new to an art museum—for example, *8 Automobiles: An Exhibition Concerned with the Aesthetics of Motorcar Design* (1951). Certain programs that Drexler initiated, such as *The New City: Architecture and Renewal* (1967), deserve more space in the book, compared with the rarity of such exhibitions later. Also, Hines might have commented on Drexler's part in the disastrous 1984 César Pelli expansion of MoMA.

At the start, Drexler could do no wrong, being Johnson's protégé. In later years, however, when he veered from the museum's commitment to Modernism—firmly established in 1932 by Henry-Russell Hitchcock and Johnson's show on the International Style—Drexler suffered a loss of support, even from previously adulatory critics. He was unable to convince ferocious detractors that the *Beaux-Arts* exhibition represented premodern rather than Postmodern architecture. And, in spite of its high-modern content, *Transformations* was trashed. Even with Drexler's subsequent purely modern shows, one, in 1982, *The Architecture of Richard Neutra: From International Style to California Modern* (co-curated with Hines), and then *Mies van der Rohe Centennial Exhibition* in 1986, he never completely regained his previous stature. He died in 1987, at age 61.

Hines assiduously ascribes Drexler's tribulations to "nasty politicking." But he leavens that with a quote from design curator Mildred Constantine: "There were setbacks, disappointments, and criticism, but those only served to sharpen and clarify the meaning of our work." ■

Architectural historian Victoria Newhouse, whose books have focused on cultural buildings, is currently preparing one on new public parks worldwide.



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Tough Stuff

Transforming an industrial structure into an art space, Richard Gluckman embraced its rugged past.

BY FRED A. BERNSTEIN

IT'S GOOD that Peter M. Brant, who knows how to buy art, found Richard Gluckman, who knows how to display it. In 2009, Gluckman renovated an elaborate stone barn in Greenwich, Connecticut, adjacent to a polo field on Brant's estate (which also includes a Jeff Koons "Puppy" and a house by Venturi and Rauch). The barn became a spectacular exhibition space for the newsprint and publishing mogul's Brant Foundation. Then, three years ago, Brant hired Gluckman (who is partners with Dana Tang in Gluckman Tang Architects) to create a new outpost of the Foundation on the Lower East Side of Manhattan. Brant had bought a former Con Edison substation that was the home and studio of the artist Walter De Maria until his death in 2013. Gluckman, part of the New York art world since 1977, knew De Maria, and the building, well. "Walter would call me if a pipe broke," he remembers.

The substation was designed 100 years ago by William W. Whitehill, a neoclassicist who knew what he was doing. The midblock building dwarfs the tenements that flank it, and yet it doesn't seem especially imposing from the street. Thanks to Whitehill's trompe-l'oeil proportioning of its oversize windows and limestone trim against a tan brick facade, it looks almost like another residential building.

That's why the interiors of what is now officially the Brant Foundation Art Study Center come as such a shock. Gluckman left the spaces largely unencumbered, giving their dramatic proportions full expression.

The second floor, which used to house massive transformers beneath its 32-foot ceilings, is now one of the most compelling gallery spaces in New York. Its beige brick walls and the cleaned-up steampunk gantries that slide across the room on tracks add the kind of industrial frisson of such museums as Dia:Beacon, the Prada Foundation in Milan and the Tate Modern in London. Gluckman added a gantrylike mechanism of his own; mounted on the fourth-floor ceiling, it can move art up and down through 8-foot by 10-foot openings cut into the building's floor plates. The hatches that cover those openings are unobtrusive and strong enough to support crowds.

The third floor, with mere 18-foot ceilings, is relatively ordinary (though huge glass windows in the back wall offer Thomas Struth-like views of the surrounding neighborhood). But that just sets the stage for the remarkable fourth floor, where Gluckman's interventions are most elaborate. First the architect covered both floor and ceiling in boards of rift-cut old-growth clear white oak, giving the large room the coziness of a Finnish sauna. (Elsewhere in the building, floors and ceilings are the original raw concrete.) In the center of the ceiling, he and project architects Robert White and Edowa Shimizu installed a 10-foot by 12-foot skylight, made of about 4



The former electrical station (above) is now home to dramatic galleries (below), currently showing the work of Jean-Michel Basquiat. A roof-garden reflecting pool (opposite, top) becomes the watery skylight on the top-floor art space (opposite, middle). A small plaza has been created just out the new back door (opposite, bottom right).



PHOTOGRAPHY: © NIKOLAS KOENIG (TOP); OPPOSITE, BOTTOM; TOM POWELL IMAGING (BOTTOM); OPPOSITE, MIDDLE); © SEAN KEENAN (OPPOSITE, TOP)





Cleaned-up heavy equipment and hardware remains in place (far left) and inspired new circulation (left).

inches of clear acrylic covered with another 4 inches of water. Sun shining through the water creates dazzling (and dynamic) light-spatters throughout the room. It's like a James Turrell Skyspace crossed with a David Hockney pool painting; the effect is so diverting that the fourth floor would be a worthwhile destination even without art on the walls. (That said, the 70 Jean-Michel Basquiat paintings in the Brant's debut exhibition provide a wonderfully frenetic counterpoint to the calmly self-assured interiors.)

The 16,000-square-foot building required multiple infrastructural upgrades. Gluckman installed an elevator (with a slit window) in the southeast corner of the building, and restored and extended a glassed-in industrial stairway in the southwest corner. Both lead to the roof, where the landscape architect Madison Cox arranged paving and shrubs around the skylight-cum-reflecting pool. From bottom to top, the building is one that gives Gluckman, among the top ranks of museum and gallery designers for 40 years, a welcome chance to show just how accomplished he is. ■

PHOTOGRAPHY: © NIKOLAS KOENIG (2)



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agcglass.com

**Glass Door Cam Lock**

Three stylish finishes—chrome, black, and 24-karat-gold plate—are the latest update for Sugatsune's clamp-on locks for swinging glass doors. The new design (a sturdy brass cylinder with a zinc spacer and strike plate) is an extension of the company's Million Lock series and intended to complement its GS-GH20 hinges and GS-GB20 brackets to provide a unified design for retail clients.

sugatsune.com

What's in Store?

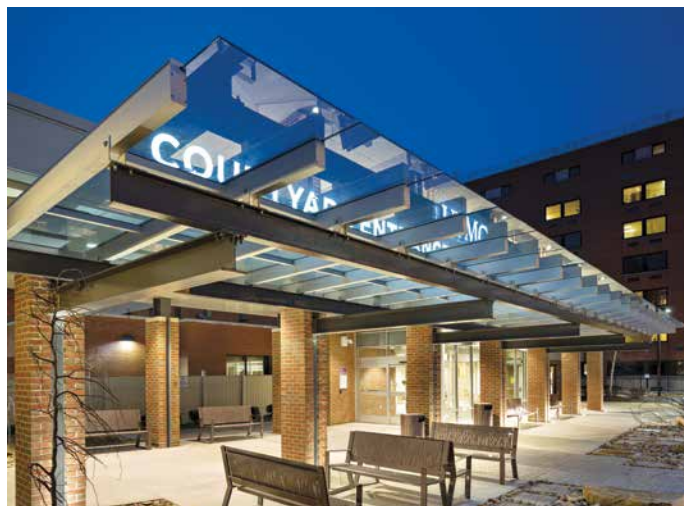
These offerings enhance retail settings with welcoming design features and playful finishes.

By Kelly Beamon

**Black Suede**

Hardware manufacturer Assa Abloy offers its durable Black Suede finish on even the smallest bit of utilitarian door hardware. The trendy color can be specified on door closers, face plates, bumpers, hinges, exit-door pushbars, and other overlooked parts to provide an additional way to add interest and unify commercial designs.

assaabloy.com

**Skyshade 2500**

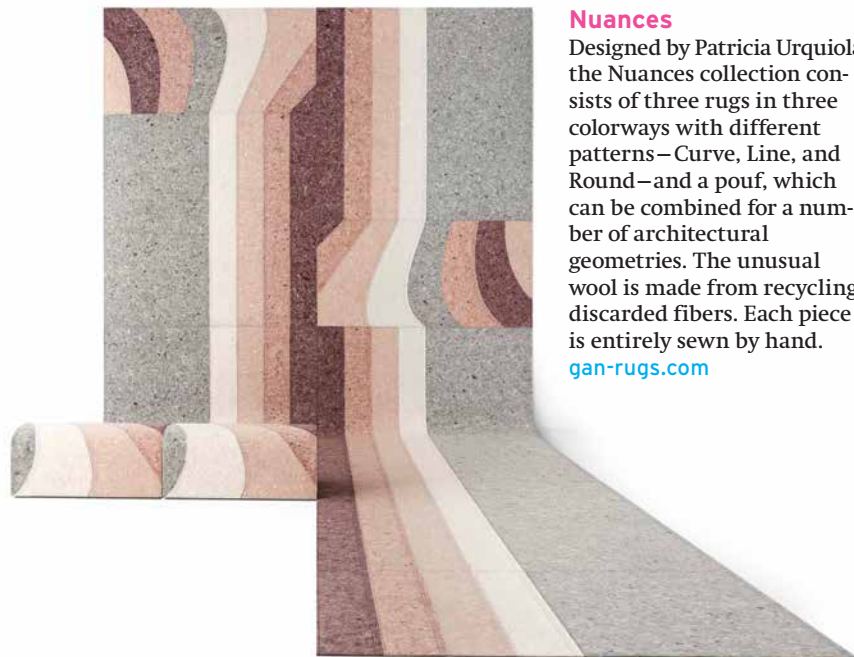
This aluminum-and-glass canopy system from Extech was designed to create an easily installed covered entrance or shelter for commercial projects. It features an internal gutter and glass panels that can be replaced or repaired individually. Designers can also specify the frame in a range of sizes measuring up to 12' long and with optional coatings or silk-screened patterns on the glass to help manage solar-heat gain.

extechinc.com

Salone del Mobile

The 58th annual furniture fair drew nearly 400,000 visitors to Milan over the course of six days. Next year's show will take place April 21-26.

By Josephine Minutillo



Nuances

Designed by Patricia Urquiola, the Nuances collection consists of three rugs in three colorways with different patterns—Curve, Line, and Round—and a pouf, which can be combined for a number of architectural geometries. The unusual wool is made from recycling discarded fibers. Each piece is entirely sewn by hand.

gan-rugs.com



Totem and WireFlow

This year, Driade enlisted renowned architects Bjarke Ingels Group (BIG) and Michel Rojkind for two very different products. BIG designed Totem (left) as a freestanding bookcase consisting of stacked volumes split diagonally into quarters. Rojkind's WireFlow chaise longue (below) features a continuous metal frame that supports a molded, flexible polyurethane body upholstered in leather.

driade.com



O1 Chair

Originally designed by Shiro Kuramata in 1979, the reintroduced O1 Chair pays homage to the 1980s, the decade when Giulio Cappellini began collaborating with the revolutionary Japanese designer, as Cappellini celebrated Thirty Years of Icons. The tubular iron frame comes finished in polished chrome or matte lacquered anthracite. The seat is upholstered in leather.

cappellini.com



Oslo

The first upholstered side chair from Scandinavian brand Muuto, Oslo features a steel frame embedded in molded polyurethane foam and a steel tube base in chrome or anthracite black. Oslo-based Anderssen & Voll designed the chair to be comfortable but have a light and airy appearance.

muuto.com



Get Back

Ludovica and Roberto Palomba designed this sofa—their third seating system for Poltrona Frau in as many years—with reclined backrests that encourage relaxation. Numerous modular elements combine freely for multiple compositions. The seat and backrest cushions are padded with down. The backrest is made of solid beech and poplar, along with birch plywood, attached to a frame of die-cast aluminium and solid tulipwood.

poltronafrau.com



Smalto

With this new table designed by Edward Barber and Jay Osgerby, Knoll sought a contemporary reinterpretation of the theme of its design classics. Made entirely of enameled steel, the table's large, inset tubular legs and 1¼"-thick top are exceptionally durable. Available in round and oval versions, in a range of colors including gray-green, blue, gray, and aubergine.

knoll.com



Aladin Wall

This new system of partition walls by Piero Lissoni features an aluminum structure in five finishes. Architects and designers can customize its dimensions and specify panels, which come in either single-layer or double-laminated glass, in stoneware, or in a variety of woods. The system can be integrated with all the Glas Italia models of swinging and sliding doors.

glasitalia.com



A.I.

As Kartell celebrates its 70th anniversary, it has embarked on a unique collaboration with Philippe Starck and Autodesk to produce what it claims to be the first design object born from artificial intelligence. Using input from Starck and an algorithm, the chair was created from a brief for a comfortable seat using the least amount of material that has sufficient structural strength and simple, clean lines.

kartell.com

Land

Designed by Naoto Fukasawa, Land is a lounge chair made of soft polyurethane molding for indoor use, and rotational-mold technology for the outdoor version, which is enhanced by an ottoman. The low, slightly inclined seat promotes a relaxed posture ideal for waiting areas.

plank.it

**OE Quasi Light**

Inspired by the relationship between mathematical forms, artist Olafur Eliasson uses geometry to shape light. His pendant for Louis Poulsen is composed of two contrasting nested forms. The outer layer is a rigid frame made from 90% recycled aluminum with LEDs embedded at the vertices that direct light toward the lamp's core, a white polycarbonate pentagon.

louis Poulsen.com

**Stacy**

Designed by Lievore Altherr, this lightweight stacking chair is available with an upholstered seat, fully upholstered, or in fire retardant plastic. The sled base comes chromed or painted in four colors. A suite of options includes armrests, left- or right-side detachable writing tablet, a linking system, row spacer, numbering system, and a trolley for stacking.

arper.com

Cultural Shifts

With bold language, the two projects on the following pages flip the traditional notion of display and performance on its head. Rather than the content dictating the form, the architects of a museum and an arts center envisioned buildings for indeterminate programs. But there, the two projects part ways: while the powerful motif of the extraordinary National Museum of Qatar resulted in its highly idiosyncratic interior, the dynamic Shed in New York was designed for maximum flexibility, as a home for visual and performing artworks that have yet to be imagined.

The Shed | New York | Diller Scofidio + Renfro with Rockwell Group

Big Wheels

With just one striking design move, an ambitious cultural building lets the creative activity it fosters make all the noise.

BY JOSEPH GIOVANNINI

PHOTOGRAPHY BY IWAN BAAN

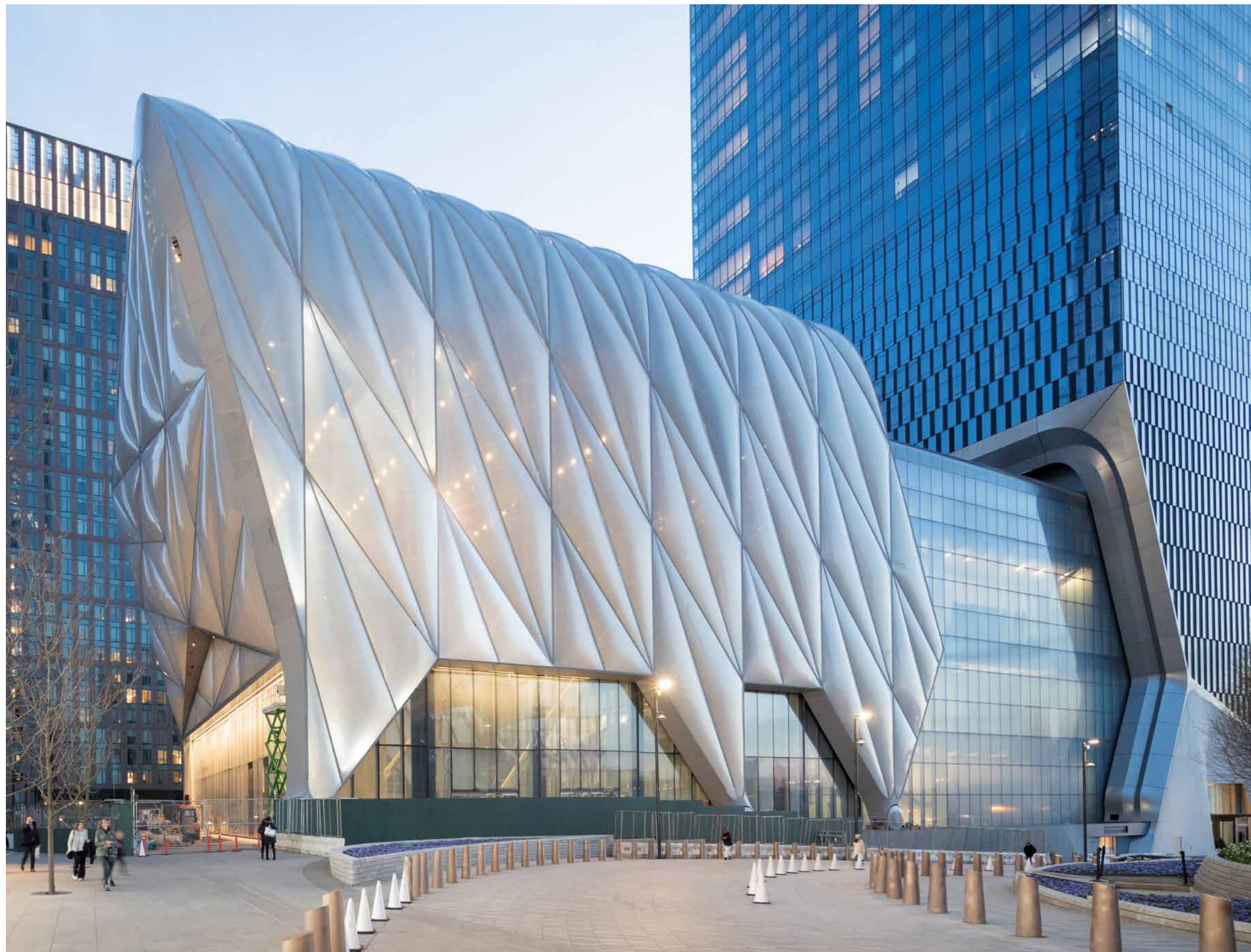
For years, Manhattanites have suffered Brooklyn envy as the Brooklyn Academy of Music (BAM) and other institutions based in that borough have taken the baton of avant-gardism from Manhattan and run with it at uncatchable speeds. Manhattan was stuck. Many arts lovers hankered to be on the far side of the East River, living in other zip codes.

Now New York architecture firm Diller Scofidio + Renfro (DS+R), in collaboration with Rockwell Group, has built a cure. Last month, the Shed, a huge eight-level cultural venue in Hudson Yards, Manhattan's new development on the far west side, opened to the jazzy syncopations of marching bands and drummers, led by Howard University's Showtime band. Sousaphones swayed as the musicians snaked through the standing crowds in a 2,000-capacity mosh pit called the McCourt that sits within the extended retractable shell of the Shed—a voluminous, 115-foot high adaptable space with a steel armature resembling the skeletal bones of a “gigantosaurus.” Like the top of a convertible, the entire ballooning volume had been moved out—rolling on eight huge steel bogie wheels, 6 feet in diameter—from the structural-steel, glass, and concrete-base building of the Shed, which backs into a new 88-story residential tower, also designed by DS+R.

After the rousing opening, the concert continued on a temporary stage as musicians performed “The Soundtrack of America,” the first of a five-evening program of African American musical history produced by the British artist and filmmaker Steve McQueen, at the invitation of the Shed's artistic director and CEO, Alex Poots.

While that series unfolded, other visual and performing works opened elsewhere in the Shed, showing off just how nimble the architecture is. A stack of four adaptable loftlike spaces, each about 12,500 square feet, make up the base building (which cleverly poaches on the infrastructure of its host, the residential tower, doubling up

SHED SKIN Inflatable ETFE, a fluorine-based plastic, wraps the structure, giving it a balloon-like appearance.





on plumbing, elevators, and fire stairs, and gaining back-of-house areas and offices). One major debut was a synesthetic program, combining a digitally animated mural by Gerhard Richter and music by Steve Reich composed to the same algorithms, in the 19-foot-high gallery on level two. Artist Trisha Donnelly's enigmatic untitled installation commandeered level four, while in the Griffin Theater on level six—23 feet high and temporarily configured with a proscenium stage and raked seating—Renée Fleming sang in an original performance piece, *Norma Jeane Baker of Troy*, written by the poet Anne Carson. Fleming's costar, Ben Whishaw, transformed himself into Marilyn Monroe in a play that ended, as it must, sadly.

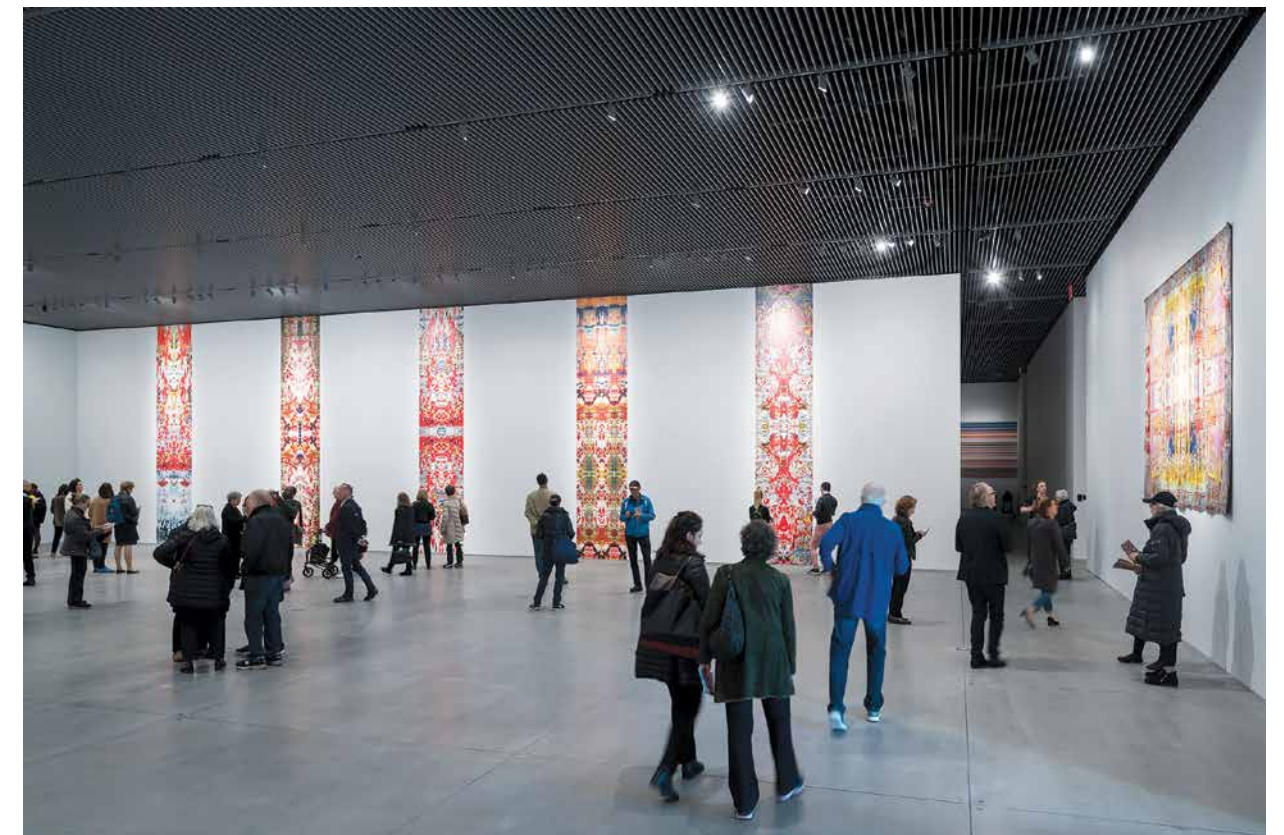
The performances and art pieces—original, ambitious, daring works

that tested the \$475 million building for flexibility—provide a foretaste of the scope of Poots's goal to present newly commissioned works that cross disciplines for diverse audiences, whose tastes may range from street art to the intellectually occult. The Shed is the platter on which art that is not yet imagined will be served; it's a garage for creative start-ups. As Dan Doctoroff—deputy mayor in the Bloomberg administration who helped initiate the creation of Hudson Yards and is now board chairman of the Shed—explained, the institution got its name because it is “an open shelter for tools.”

Sheathed in inflatable ETFE, the Teflon-like material that looks like bubble wrap, the Shed has a charismatic urban presence, especially at night, when it glows like a Japanese lantern along the Hudson Yards'

CULTURE BEAT

The new venue features two levels of gallery space. *Reich Richter Pärt*, an immersive art and live-music performance, currently occupies the second-floor gallery (above and top).



southern edge, adjacent to the High Line. The main south entrance is at street level, below the High Line, while the north entrance is at the higher level off Hudson Yards' plaza.

But the Shed is not so much an object as a performance. Leaving its position against the indented side of DS+R's residential tower, the shell rides on tracks with elephantine slowness and grace, and, fully telescoped out, at 17,000 square feet, it doubles the footprint of the base building. Two rack-and-pinion systems on the roof, each with six 15-horsepower motors, drive the movement with a combined 180 horsepower (compared to a 134-horsepower Toyota Prius).

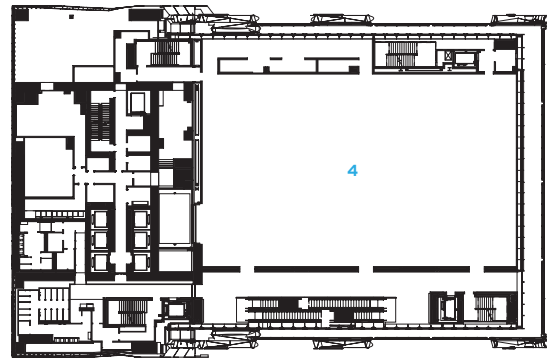
With state-of-the-art industrial parts taken from gantries and other portside structures, the design makes an unmistakable contextual reference to the wharves that once lined the Hudson River waterfront, just a block west. “We used a lot of parts from the industrial-crane industry, which are reliable, time-tested, and maintainable,” says DS+R founding partner Elizabeth Diller.

The design belongs as well to the long tradition of the English industrial shed. That inspired James Stirling and High Tech architects Norman Foster and Richard Rogers, who seem to pluck the parts of their buildings off the shelf. In reality, as in those buildings, many “standardized” parts were actually custom-designed, such as the Shed's four-story street-side glass facade. The components here were expressly made not to look precious. Fittings are not chromed as in many High Tech statements but deliberately calibrated simply to look serviceable and functional. Neutral, charcoal-gray walls in the escalator corridors look standardized but are actually custom-fabricated modular

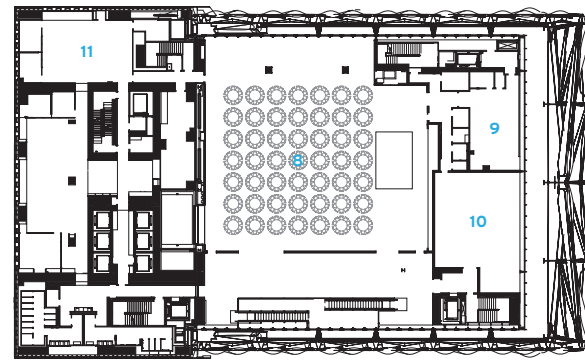
wall panels. These bespoke components work well with off-the-shelf ones such as a baffled ceiling system, which allows easy access to hidden mechanical systems. The floor is basic industrial-strength polished concrete, and the gallery walls are standard gypsum, backed by plywood for secure art installations.

Apart from the otherworldly ETFE shell, the architects bring no attention to the building's form or surface: it remains at all times a rather Calvinist, no-frills support structure for other people's creativity. To find moments of “design” within the general sobriety of the strictly orthogonal, mostly gray base building, you have to go into the restrooms, where mini-mosaics are arrayed in an essay of grays, with white tiles bubbling toward the ceiling.

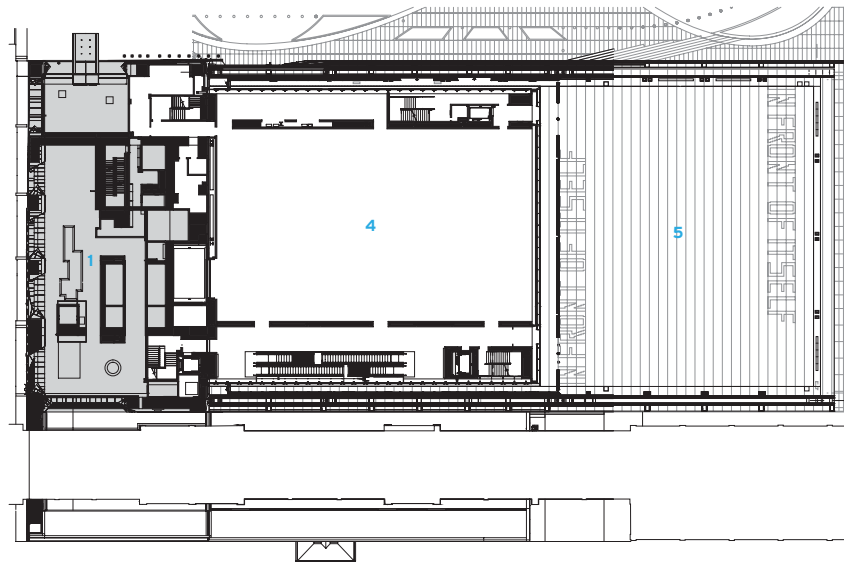
Yet the assiduously neutral design is somehow poetic. It is not the poetry of form but the poetry of the *ballet mécanique*. Everything moves, and not just the *gigantosaurus*. Glass walls at the front of the level-four gallery floor, which overlooks the great McCourt space, fold back accordion style to allow extra bleacher seating for up to 300 people to be part of the vast space, while the gallery on the same level as the McCourt can be opened to expand the enormous floor to hold as many as 3,000 people. The side walls of the McCourt rise and fall like a guillotine to open the interior to the surrounding plaza. Shades drop, also guillotine style, to block light and sound. Elements of the flexible light grid overhead can descend. The McCourt is effectively a soaring fly tower that allows the whole space to perform as a stage. The point of the dance, however, is that the building adapts to changing programs. The architects have created what Doctoroff correctly calls a “Swiss Army knife” that can perform whatever task artists need and want. The



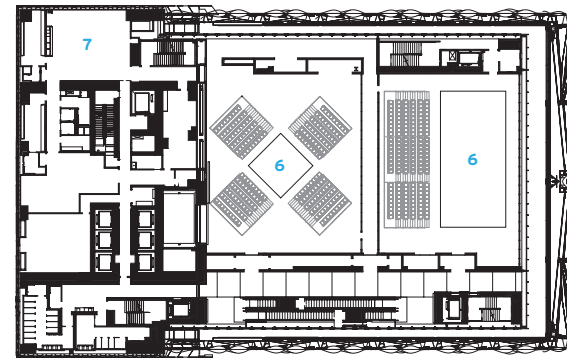
LEVEL 4 PLAN



LEVEL 8 PLAN



LEVEL 2 PLAN



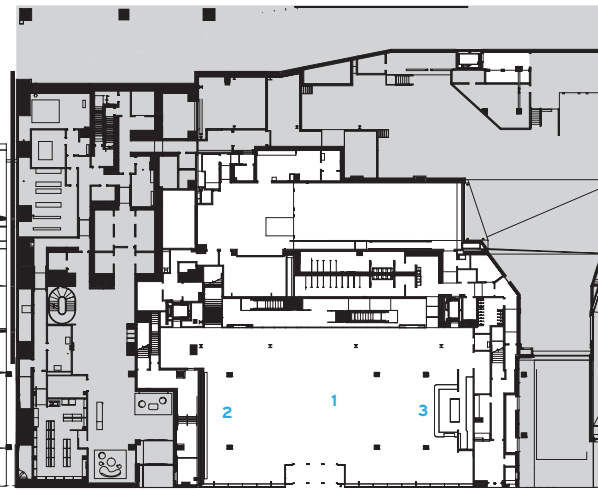
LEVEL 6 PLAN

- | | |
|------------------|----------------------|
| 1 LOBBY | 7 GREEN ROOMS |
| 2 TICKETING | 8 EVENT SPACE |
| 3 BAR | 9 CATERING KITCHEN |
| 4 GALLERY | 10 TISCH ARTISTS LAB |
| 5 MCCOURT PLAZA | 11 OFFICES |
| 6 STUDIO THEATER | |

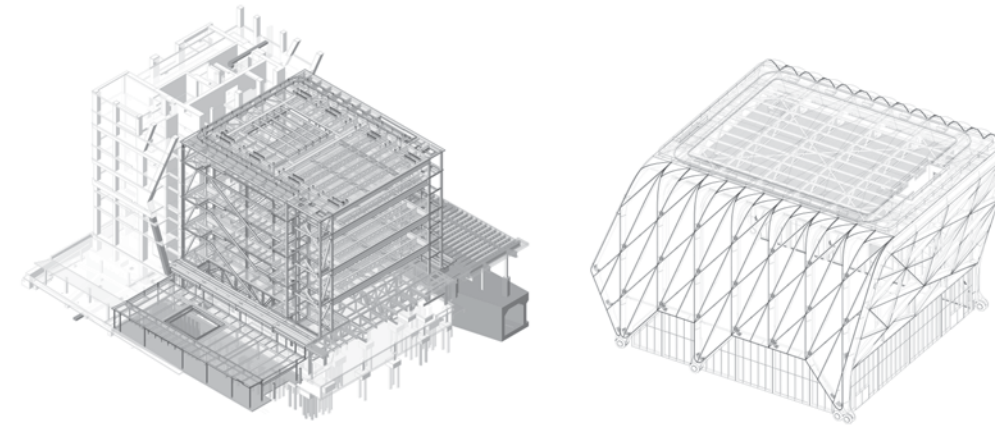
building is a servant structure without an architectural ego.

About 11 years ago, the idea for the Shed began to germinate as Diller and David Rockwell pondered a satellite map of the future Hudson Yards development, to be built on a deck over the vast rail yards at the western edge of Manhattan. They stared at a spot marked with a question mark that the city had designated for a cultural venue. Mayor Michael Bloomberg, who donated city land and \$75 million in city funds (and later gave \$75 million of his own; the building has been named in his honor) stipulated only that—whatever this arts facility would be—it should not duplicate anything the city already had.

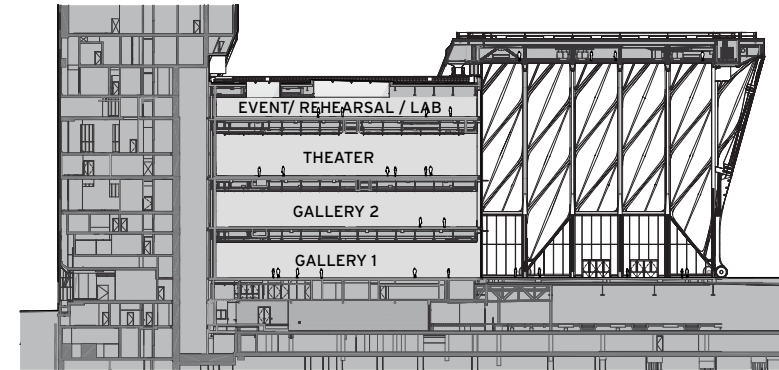
Diller and Rockwell didn't really have a clue. Nor did anyone else. Their basic idea of stacked lofts—big, open, flexible, experimental spaces—evolved slowly, but from a starting point: their shared history in Manhattan. Both Rockwell and Diller had unique New York backgrounds. Rockwell says that when he came to the city, he was not fascinated by the iconic towers of the skyline but by the busy, scruffy,



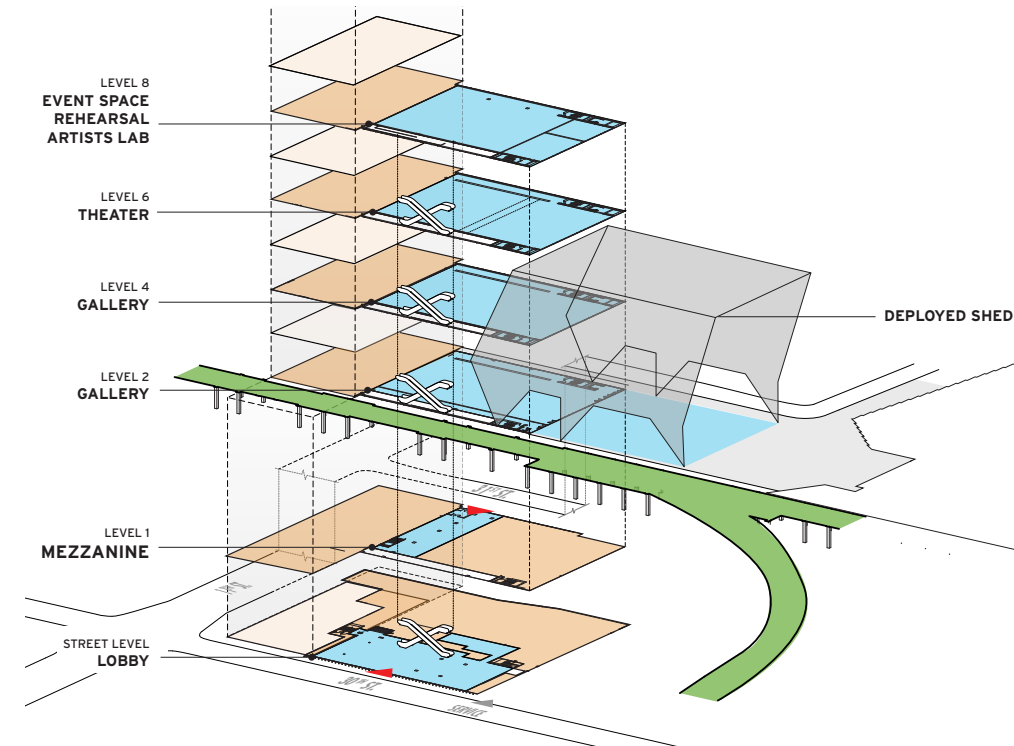
LEVEL 0 (LOBBY) PLAN



STRUCTURAL SYSTEMS



SECTION



EXPLODED AXONOMETRIC



ROCK AND ROLL The building's retractable shell slides out on eight 6-foot-diameter bogie wheels (above).

changing, infinitely human New York street-scape of storefronts. It was a New York of energy and change, and he resolved to design buildings that would cultivate life.

Diller came of age intellectually and artistically in the city's Downtown loft culture in the 1970s, as artists and architects staged performances and created off-the-wall artworks and happenings in the informality of big, raw found spaces that opened possibilities and ignited the imagination. Before this latest project, she was part of the team that designed the High Line, the elevated rail line that can be compared to a linear outdoor urban loft. Now, at its northern end, it swings by the south side of the Shed.

Both Diller and Rockwell also cite the famous, unbuilt Fun Palace, by Cedric Price, a cavernous hall designed in 1959–61 as a bare-bones steel apparatus outfitted with traveling gantry cranes that allowed changing configurations to support changing activities. Its kit of parts included prefabricated modular floors, walls, and ceilings—much like its echo, the Shed. (The lobby's bar and restaurant is called Cedric's.)

In the context of a Manhattan increasingly



NIGHT AND DAY
Inside its movable shell (opposite), the new High Line landmark houses a vast event space called the McCourt. For large concerts, the galleries' glass walls behind the McCourt open to allow extra space for the audience (left and below).



PHOTOGRAPHY: © TIMOTHY SCHENCK



Houstonized by tall, impersonal towers, deadened at the street by empty lobbies and banks, the architects fused their backgrounds and interests to create the biggest loft of them all, where artists can again experiment with impunity—and without the same commercial pressures that drive and restrict galleries and theaters (the Shed’s operating budget of about \$50 million a year will come largely from donors’ gifts and from revenue, at least at first). Poots, the founding director of the wildly successful Manchester International Festival in the UK, is running an institution that will generate rather than import “content.” And he is directing an institution that encourages risk, he says, to the point of tolerating failure.

Many New Yorkers thought that kind of inventive spirit had long since decamped to Brooklyn. With Poots as director propelling the Shed’s original programming, the architects have created an armature and trampoline for a calecthenics of creativity that invites the city’s artistic soul back, enhanced by Manhattan architectural cool. ■

Joseph Giovannini is an architect and critic based in Los Angeles and New York.

- credits
- LEAD ARCHITECT:** Diller Scofidio + Renfro – Elizabeth Diller, partner in charge; Robert Katchur, project director; Ricardo Scofidio, Charles Renfro, Benjamin Gilmartin, project team
- COLLABORATING ARCHITECT:** Rockwell Group – David Rockwell, Evan Tribus
- ENGINEERS:** Thornton Tomasetti (structural, facade, kinetic); Jaros, Baum & Bolles (m/e/p, fire)
- CONSULTANTS:** Hardesty & Hanover (kinetic systems); Vidaris (energy); Tillotson Design Associates (lighting); Akustiks (acoustic/audiovisual); Fisher Dachs (theater)
- GENERAL CONTRACTOR:** Sciam Construction
- CLIENT:** The Shed
- SIZE:** 200,000 square feet
- TOTAL COST:** \$475 million
- COMPLETION DATE:** April 2019
- SOURCES**
- STRUCTURAL STEEL:** Cimolai
- EXTERIOR CLADDING:** FMB, Accurate (metal panels); CS Facades (curtain wall); Vector Foiltec (ETFE); Cimolai Technology (kinetic); Villa Construction (reinforced concrete); Long Island Concrete (polished topping slabs)
- ROOFING:** TQ3; USG (waterproofing)
- SLIDING FACADE DOORS:** Bator
- FELT WALLCOVERING:** FilzFelt
- ACOUSTIC FLOATING FLOOR:** Mason
- LIGHTING FIXTURES:** Chelsea Lighting
- ELEVATORS/ESCALATORS:** Thyssenkrupp

National Museum of Qatar | Doha | Ateliers Jean Nouvel

Disc Jockey

An outlandish new building declares a diminutive country's big ambitions.

BY BETH BROOME

PHOTOGRAPHY BY IWAN BAAN

Despite a long and rich history, Qatar, with its largely nomadic Bedouin past, has few tangible artifacts to show for its legacy. The Persian Gulf country's image today is exemplified by its capital, Doha, where meteoric growth kicked off with the discovery of oil and gas in the middle of the last century, a development that has made this small nation the world's richest per capita. It is against the city's backdrop of bombastic high-rises that the otherworldly National Museum of Qatar, designed by Ateliers Jean Nouvel, was imagined and, at the end of March, inaugurated with much fanfare after more than a decade-long gestation, carrying an undisclosed price tag.

An immense collision of sandy-hued concrete disks, the building is planned as a loop that winds for almost a mile and makes you feel as if you've landed on planet Tatooine in the *Star Wars* universe. As an institution, it aims to address the contradiction between Qatar's past and present. It also is striving to become an emblem for this country as it searches for a new identity and works to prove itself as a cultural force—particularly in light of the ongoing Saudi-led blockade, as well as the 2022 FIFA World

Cup, which Qatar will be hosting. The first scheme envisioned by Nouvel (who recently completed the Louvre Abu Dhabi, *RECORD*, December 2017) was subterranean, directing its focus to the turn-of-the-century palace of Sheikh Abdullah bin Jassim Al Thani that occupies a prominent site along the waterfront Corniche promenade. But the client, Qatar Museums, led by Sheikha Al Myassa bint Hamad bin Khalifa Al Thani, a prolific art collector and promoter of aspirational civic architecture, wanted an icon. "It is important to show that this museum is not just a dust museum—it is a museum of today, linked to the dynamism of modern Qatar," says Nouvel. "And for a national museum, we need to talk with symbols—we need a monumental approach." So the design that was approved sits above ground, wrapping around the newly restored walled palace, one of the few extant monuments of Qatar's history.

Doha is big on symbolism. I.M. Pei's Museum of Islamic Art

UNCHARTED WATERS A "lagoon" lies between the museum and the Corniche promenade, animated by an installation of fountain sculptures by artist Jean-Michel Othoniel that evoke Arabic calligraphy.





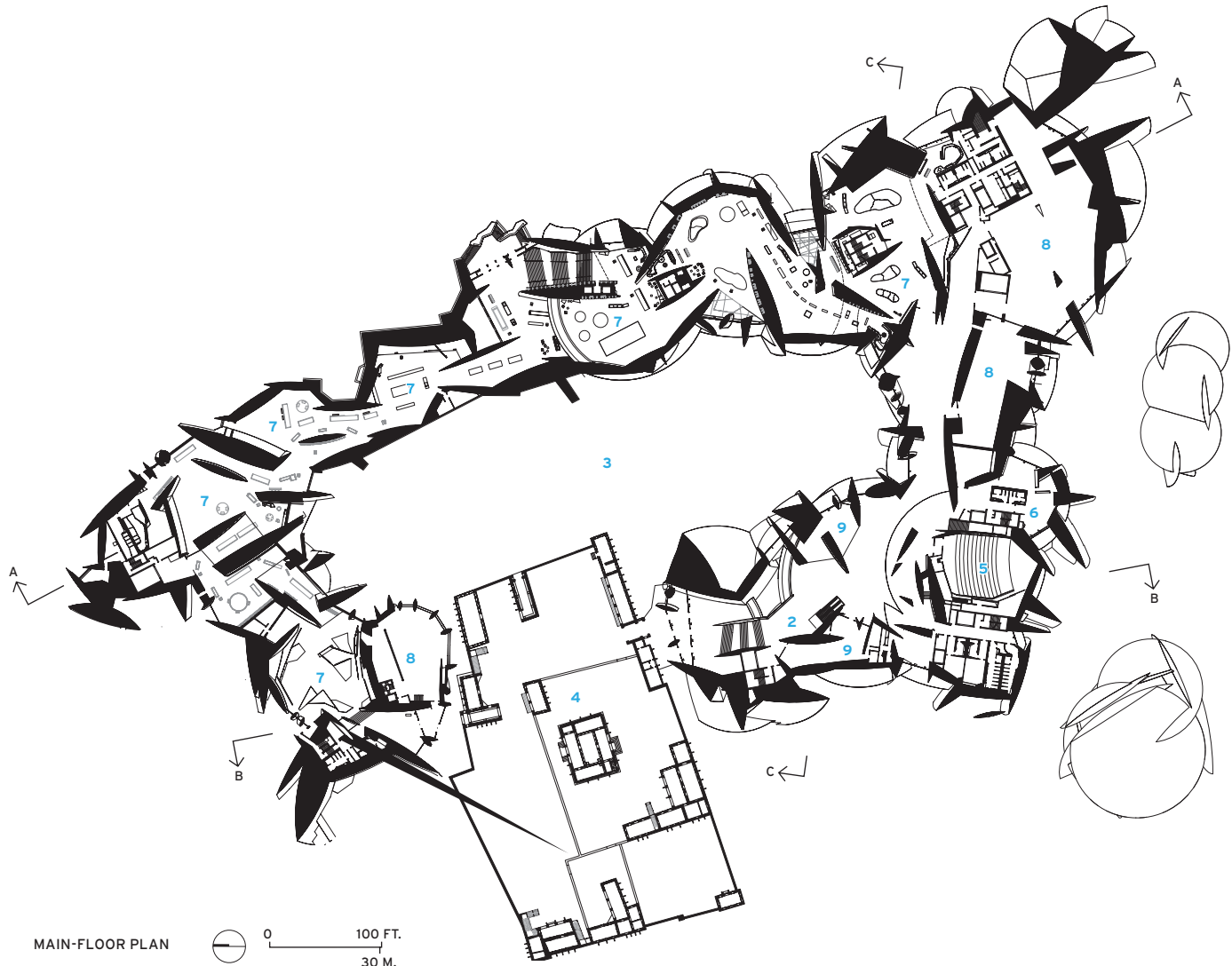
(2008) pays homage to a 13th-century ablutions fountain; Arata Isozaki looked to the iconic Sidra tree for his convention center there (2011); and Pelli Clarke Pelli's medical center (2018) riffs on the sails of the dhow, a traditional sailing vessel. Nouvel says his form was inspired by the desert rose—a mineral formation, found beneath the sand in the Gulf region, with a complex geometry of interlaced disks. He liked it that the shape was enigmatic and that it offered possibility. “When you have a random system, you can adapt it and also adapt the contents,” says the architect, referring to the fact that a collection did not exist and was developed alongside the building design. The museum’s resemblance to this small, natural object is uncanny, with its enormous rounded volumes, from 46 to 285 feet in diameter, in a dance, cantilevering and jutting up, across, and through one another.

On the exterior, the unusual massing forms passageways, outcrops, and canopies offering shade against the intense sun. The hue of the glass-fiber-reinforced concrete (GFRC) cladding shifts with the light, from a dull white to beige, to a wispy pink, blending with the color of the ubiquitous desert sand. It was smart to embrace the dust, which covers everything here, as attested by the scores of grimy glass buildings nearby. Described as a necklace, the snaking building is clasped together by the palace, the chain forming a large courtyard at its center. You can enter this space by passing through the building—from the main entrance off a cul-de-sac—or via a vehicular drop-off, which slips beneath the museum. Standing within this exterior room evokes a sense of wonder—it is impossible to imagine what lies behind the walls of cascading disks.

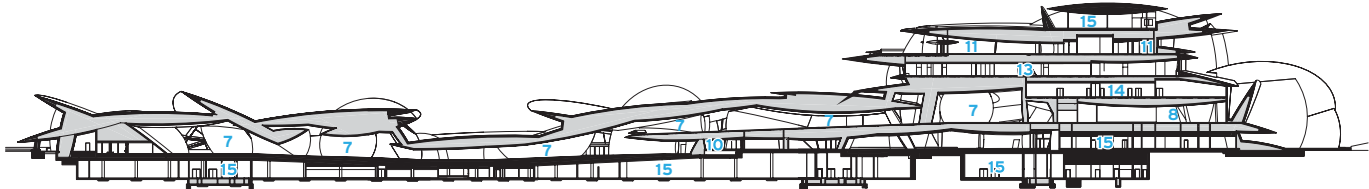
Morphing from exterior enclosures into interior walls and ceilings, the disks slice through one another, creating the unusually shaped galleries within. Eleven in all, they are arranged as a circuit, carrying visitors on a chronological tour of the peninsula’s history, starting with the geological and morphological beginnings and moving through early human presence, life in the desert and on the coast, the pearling industry, and the country’s modern history. There are few vertical or horizontal planes within the museum’s 324,000 square feet of occupiable space. Even the floor inclines down partway through the voyage (making for an interesting ride for a visitor using a wheelchair) and then rises again toward the final galleries. Spatially, it’s an engaging journey—every point of contact is unique, so you cannot anticipate what you’ll next encounter; the path contracts into narrow canyons and then bursts into expansive rooms, carrying you along in its current. The



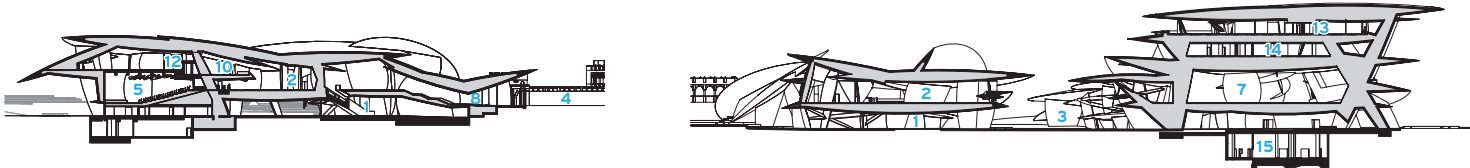
COME TOGETHER
The building is composed of 539 disks, which are the walls, ceilings, and structure (opposite and this page). The glass-fiber-reinforced concrete cladding consists of 76,000 panels, made from 3,000 master molds. Limited glazing is deep-set, shading apertures from the intense sun.



MAIN-FLOOR PLAN



SECTION A - A



SECTION B - B

SECTION C - C

- | | | |
|-------------------------------------|------------------------|-------------------------|
| 1 MAIN ENTRANCE | 6 LEARNING STUDIOS | 11 RESTAURANT |
| 2 MAIN LOBBY | 7 PERMANENT GALLERY | 12 LIBRARY |
| 3 COURTYARD | 8 TEMPORARY EXHIBITION | 13 OFFICES |
| 4 SHEIKH ABDULLAH BIN JASSIM PALACE | 9 GIFT SHOP | 14 STORAGE/CONSERVATION |
| 5 AUDITORIUM | 10 CAFÉ | 15 BACK OF HOUSE |

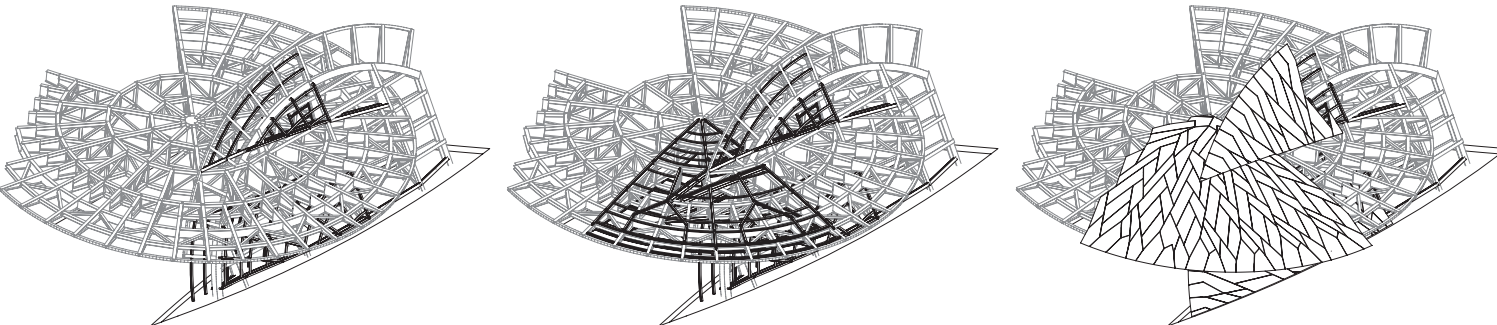


museum attempts to communicate the essence of a culture through archaeological finds, animal models, and cultural artifacts. Overall, the exhibits are minimal and unsurprising. There are a number of commissioned artworks, but it is not an art museum by any stretch. “Jean’s architecture is incredible,” says Sheikha Al Myassa. “But the walls made it hard to hang anything.” Instead, the large canted surfaces have been animated with nine films, produced by the Doha Film Institute, showcasing the region’s flora, fauna, and history through narrative or abstracted images. Formatted to fit the particular dimensions of the walls, the works—culminating with American artist Doug Aitken’s kaleidoscopic *The Coming of Oil*—are vivid and stunning.

There must have been some serious head-scratching when Nouvel announced the fanciful notion of a desert rose to his team. “It is a

CIRCLE TIME The museum, which sits on the Doha Bay, forms a loop, with a large courtyard, called the Baraha, at its center. Linking the chain is the newly restored turn-of-the-century Palace of Sheikh Abdullah bin Jassim Al Thani, which was a family home and seat of government before housing Qatar’s original national museum.

simple idea, but very complex to achieve,” acknowledges Nouvel’s project manager Hafid Rakem. With 539 disks of 30 different sizes, intersecting at a mind-boggling number of nodes, a multinational team of hundreds of architects, engineers, and other consultants collaborated, from the concept’s inception, through what would become, say the engineers, the largest BIM project in the world in terms of project scope and degree of detailing. Using Digital Project, CAD software developed by Gehry Technologies, the team advanced the design in conjunction with the program and museology. As the project pro-

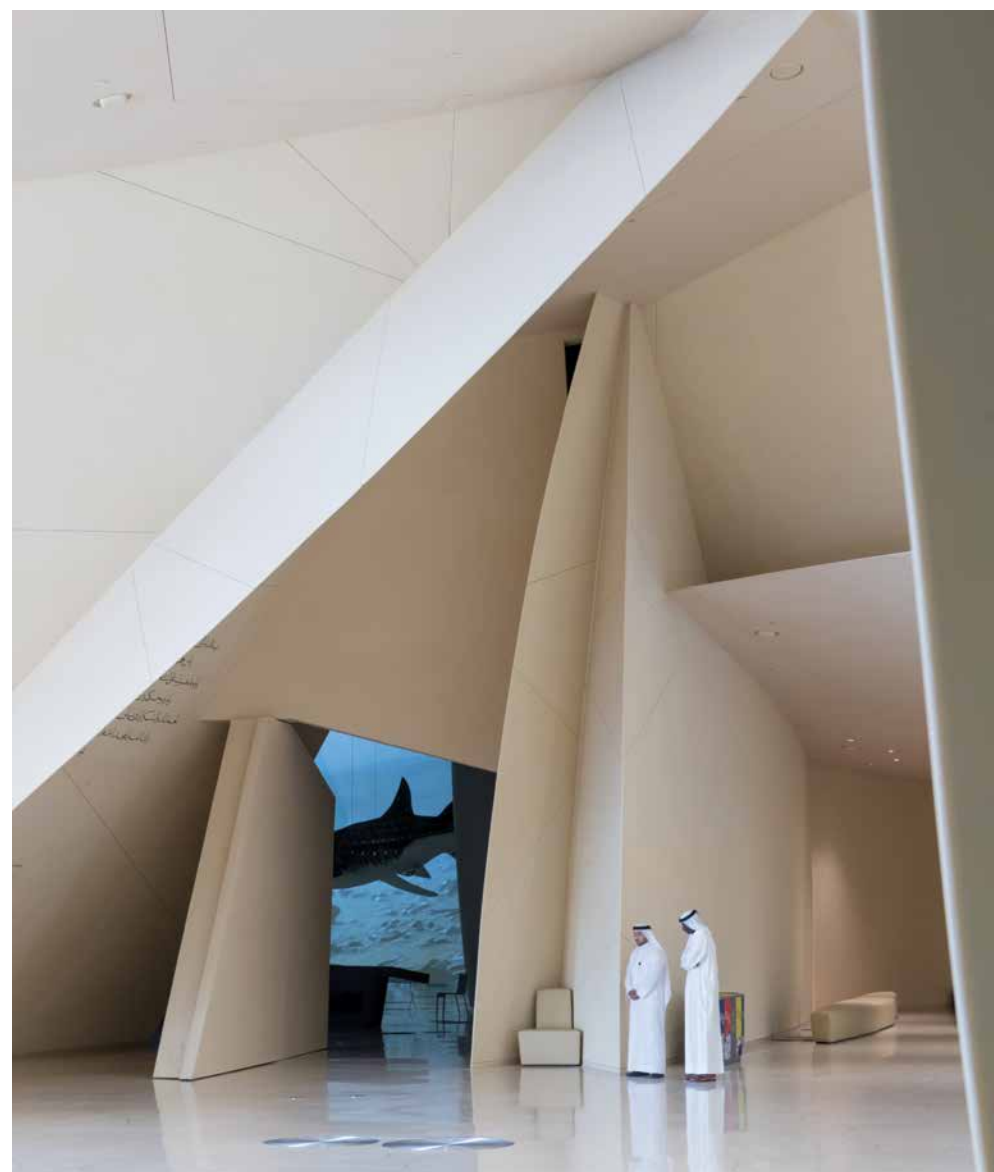
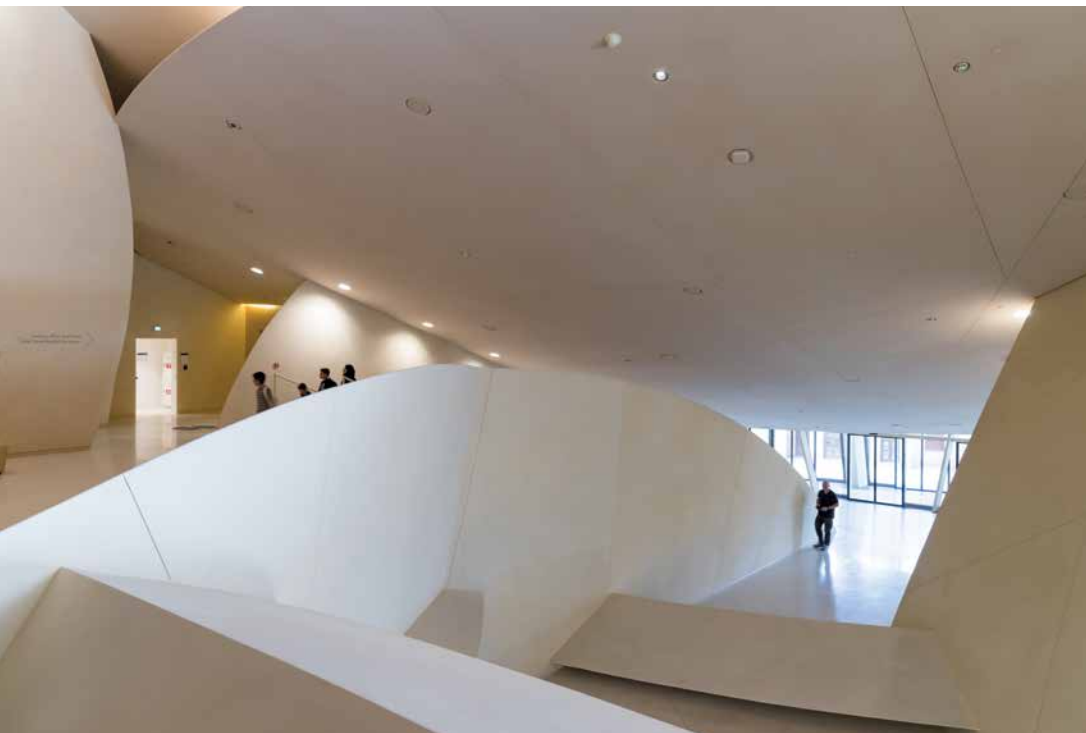


Primary structure and vertical disk cladding structure

Secondary cladding structure with intersection beams

Final cladding arrangement

INTERSECTION DISKS BUILT UP



gressed, each of these things informed the shape of the others.

Arup provided most of the engineering disciplines, including the primary structure. “We had many debates in the early stages about how to realize that form of the desert rose, structurally,” says project director David Gilpin. “Is it concrete? Steel? How do disks create spaces?” The team imagined different sized paper plates cut and stuck together at various angles with the negative spaces between them becoming the galleries. Initially, they envisioned a concrete structure, but quickly realized that steel would be more flexible and appropriate for the sculptural forms they were after. Over years, the engineers and architects developed a standard set of disks and experimented with assembling them. “A big challenge for us was that the architectural form and structural form are one and the same,” says Gilpin. “Every time you move a wall, you move the structure.”

Using a variety of analysis and modeling software, architectural models were transformed into structural-analysis models, adjusted, and then moved back again into the architectural model and back and forth as the building was optimized, the interiors and the overall shape worked out, and building services threaded through the disks. Then, of course, the model had to be further tweaked to make, among other things, the interior spaces conform to international gallery standards and work from a sustainability standpoint (the building is LEED Gold). Along the way, there were myriad fundamental challenges presented by the unusual form, like how to ground the building for lightning and how to manage rainwater (rain here tends to be rare and brief, but heavy). And then there were the challenges of handling a labor force of about 2,500 on a 24-7 clock—in a country that has had a less-than-stellar reputation where conditions for migrant construction workers are concerned.

Stuttgart-based Werner Sobek worked on the design and engineering of the secondary structure, envelope, and embeds that connect the cladding to the substructure. “We developed the engineering logic behind the cladding and substructure,” says managing director and partner Thomas Winterstetter, “and the computerized parametric design features to make the cladding buildable for the complex geometry of this crazy-looking thing.” The cladding consists of 76,000 panels made from 3,000 master molds. Though their arrangement appears random, there is a repeating radial pattern that was morphed and adapted to the various disk sizes. “And we had to do this while acknowledging the limited capabilities of the cladding subcontractor in

LARGER THAN LIFE
The exterior geometry carries inside (opposite, top). A narrow passage connects the lobby to the exhibits (opposite, bottom). The 11 galleries are arranged in a chronological circuit, beginning with Qatar’s geological and morphological origins (right) and progressing to historic (below) and modern times. Large films are formatted to fit the particular dimensions of the irregularly shaped walls.



MOVING IMAGES An eight-minute film by American artist Doug Aitken is projected on multiple surfaces (right and below) and chronicles—with abstracted, kaleidoscopic images—the geology and historic significance of oil in Qatar. The building’s exterior planes are dramatically illuminated in the evening (opposite, top and bottom).

Doha,” Winterstetter says. The architects specified high-performance GFRC to enable a thin profile and crisp edges, which could not be accomplished with the thicker and heavier traditional reinforced concrete. Stainless-steel embeds cast into the panels connect them to the substructure. Of course, all the building components had to address the aggressive subtropical coastal-desert climate, with its humidity, saltwater air, and big temperature swings. The substructure, for example, was galvanized with an increased zinc thickness, and prototypes of the panels were cast in labs to test their technical capabilities, prior to large mock-ups’ being built in Doha and Abu Dhabi for architectural design-intent review.

Nouvel seems content for the technical gymnastics to remain something of a mystery. “You don’t want to show the tool, you want to show what the tool has done,” he says. In its outlandishness, the National Museum of Qatar has loudly proclaimed the country’s might and ambitions, looking to culture and, specifically, architecture as a way of securing a place on the world stage. Here, this fantastical, impossible-rendering-come-to-life feels right at home. ■

credits

ARCHITECT: Ateliers Jean Nouvel – Jean Nouvel, architect; Hafid Rakem, project manager; Philippe Charpiot, project leader; Sabrina Letourneur, lead interior designer

ENGINEER: Arup London

CONSULTANTS: Renaud Piérard (exhibition design); dUCKS scéno (Scenography); BCS, INGPFI, Werner Sobek (facades); L’Observatoire, Scherler (lighting); Licht Kunst Licht (museum lighting); Michel Desvigne, Ana Marti-Baron (landscape architect); AECOM (landscape engineering); Éric Maria Architectes (general management); Gehry Technologies (BIM management)

ARCHITECT OF RECORD: Qatar Design Consortium

GENERAL CONTRACTOR: Hyundai

CLIENT: Qatar Museums

SIZE: 562,000 square feet (gross); 324,000 square feet (usable)

COST: withheld

COMPLETION DATE: March 2019

SOURCES

GFRC PANELS: Fibrex

GLAZING: Pilkington, Emirates Glass

EPOXY TERRAZZO FLOORING: BASF

ESCALATORS: KONE



HOSPITALITY

- 90 Tsingpu Yangzhou Retreat, China
Neri & Hu Design and Research Office
- 96 Radhaus, San Francisco
Envelope A+D
- 100 T. Culinary Workshop, Seville, Spain
Sol89
- 104 Under, Lindesnes, Norway
Snøhetta



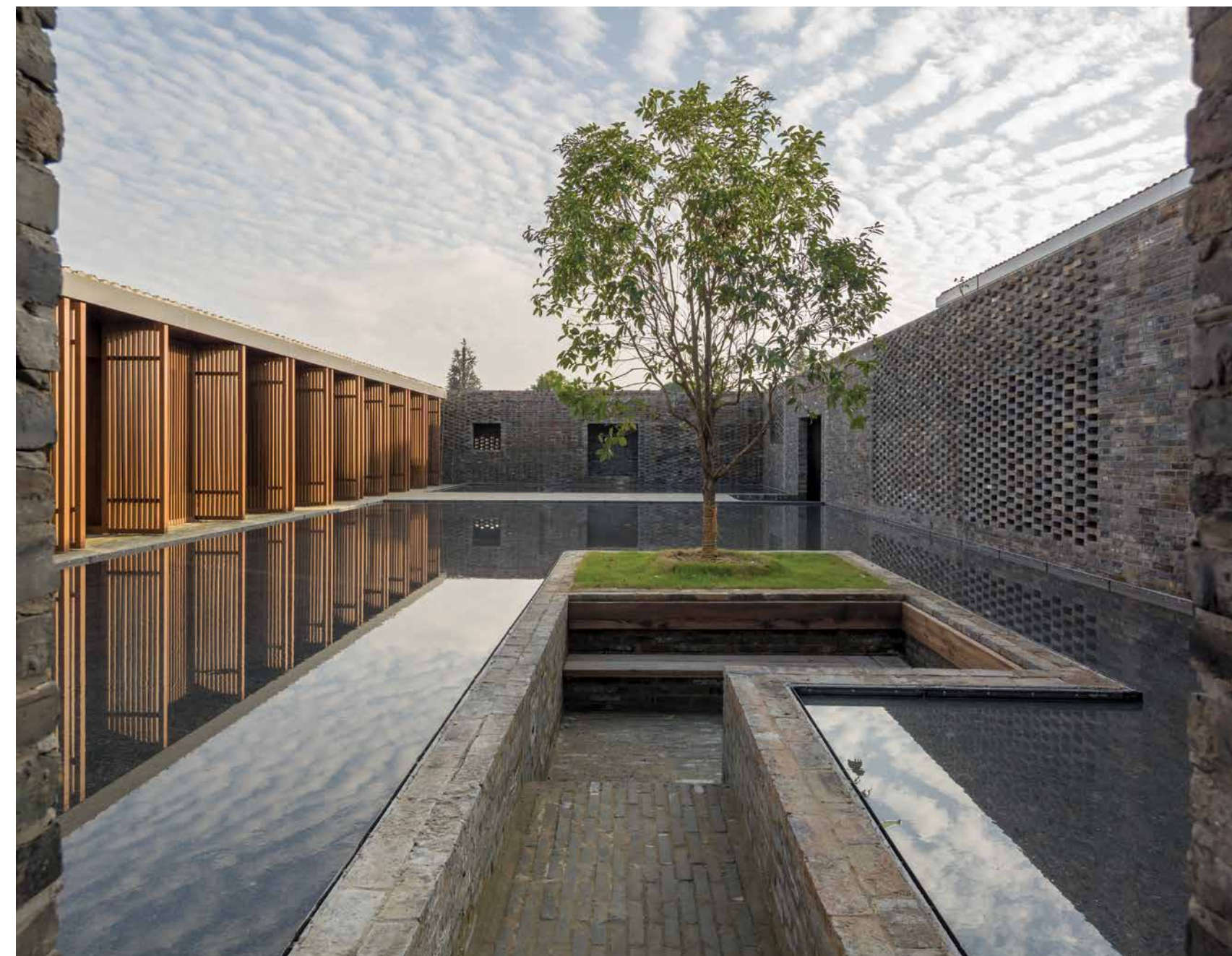
Tsingpu Yangzhou Retreat | China | Neri&Hu Design and Research Office

Over the Garden Wall

Courtyards and picturesque paths meander through a unique Chinese getaway.

BY ALEXANDRA A. SENO

PHOTOGRAPHY BY PEDRO PEGENAUTE



On the east side of a vast concrete plaza that welcomes visitors to the Tsingpu Yangzhou Retreat, a rectangular opening cut into a gray brick wall frames a lone tree and reflecting pool—a preview of the landscape that lies beyond the square, within this hotel's internal grid of brick-walled passageways. In fact, the property features 45,000 square feet of courtyard spaces, with trees, terraces, pools, and 20 spalike guest rooms.

Shanghai architects Lyndon Neri and Rossana Hu, principals of their eponymous firm, conceived this grid of enclosed walkways as an elegant and culturally appropriate way to organize and unify the site's existing group of scattered structures, which the client, Tsingpu, asked them to transform into guest and event spaces.

Sunken steps lead from the entry plaza down to the front door of the main complex, where visitors enter one of its brick-lined corridors. These open onto and overlook a series of quadrangles that hold buildings for reception and private rooms, as well as bamboo and flower gardens, reflecting pools, and an amphitheater. Two buildings outside the protective wall hold a restaurant, an event space, and additional guest rooms.

All the rooms echo the minimalist aesthetic of the complex's outdoor areas: private spaces are clad in walnut, with terrazzo floors, and are sparsely furnished with the architects' own clean-lined modern seating, wood built-ins, and warm brass lighting fixtures—a signature of Neri&Hu projects. The paneled and minimally furnished reception, dining, and workshop areas all open to the outdoors. Although in-room televisions and audio systems are nonexistent, interiors are kept comfort-



LOCALLY SOURCED Constructing a wall of salvaged bricks (opposite) brought order to the site's buildings, including one for reception (left) and formed new gardens and courtyards, such as this sunken sitting area (above).



SITE PLAN

0 165 FT.
50 M.

- | | |
|------------------------|-------------------------|
| 1 ENTRY PLAZA | 9 ARTIST GUEST ROOMS |
| 2 WATER GARDEN | 10 FLOWER GARDEN |
| 3 BAMBOO GARDEN | 11 EVENT PLAZA |
| 4 AMPHITHEATER | 12 RESTAURANT |
| 5 RECEPTION | 13 THEATER |
| 6 LIBRARY GUEST ROOMS | 14 LAWN |
| 7 TEA GARDEN | 15 LAKEVIEW GUEST ROOMS |
| 8 COURTYARD GUEST ROOM | 16 BACK OF HOUSE |



DOWN TO EARTH
A drone's-eye view of the retreat (opposite) shows the rigor its wall imposes. The reception building (this photo) features a sunken tearoom, one of the several spaces the architects carved out using excavation.

able with a modern HVAC system that is grouped in one courtyard with other mechanicals.

Few individual details are as impressive as the wall that contains the site. With it, the architects turned the assortment of ramshackle buildings on the edge of Yangzhou's picturesque Slender West Lake into an homage to traditional Chinese courtyard architecture, one that captivates visitors even in a region already famous for its elaborate garden designs.

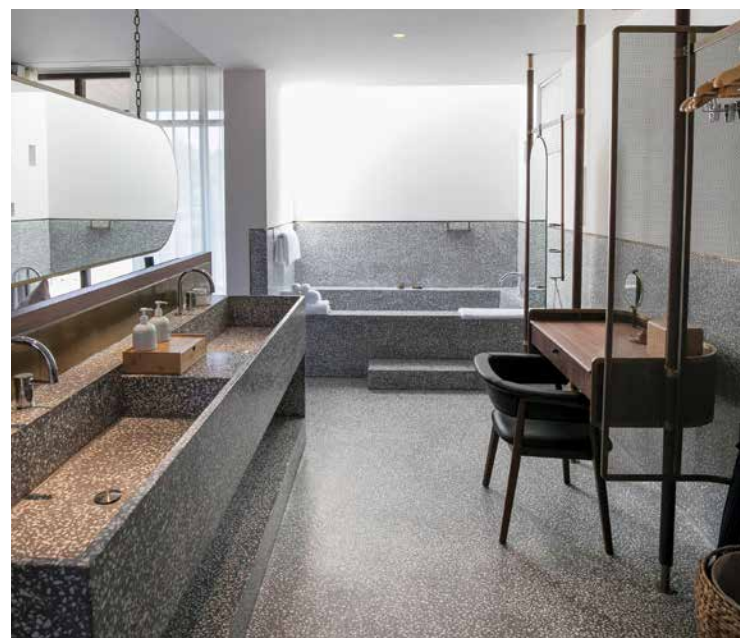
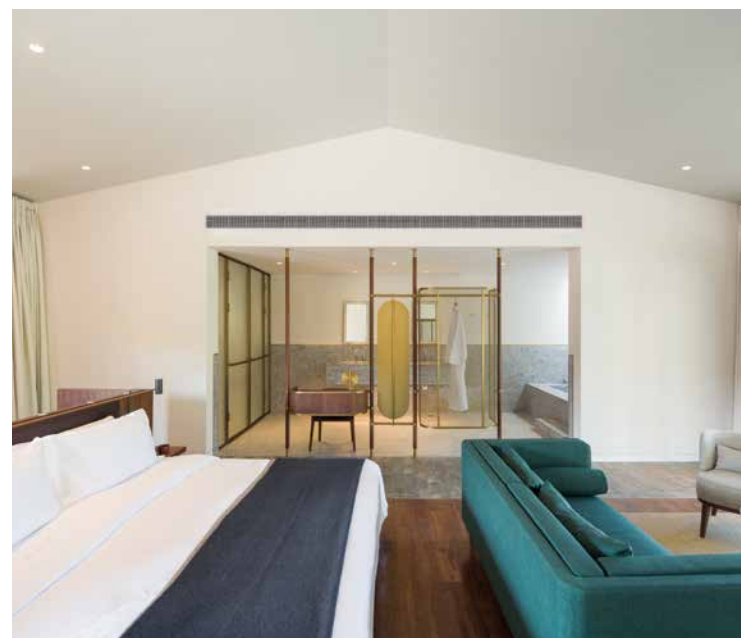
Although the architects had to work within existing building footprints, each of the 20 guest rooms (ranging in size from 350 square feet to 840 square feet) features a unique configuration, depending on which structure houses it. The bungalow of concrete, brick, and wood at the edge of the lake, for example, has rooms that open up to the water.

Hu says that coming up with the site plan was her favorite part of the project—overlaying the grid of walls and paths to tie the scheme together, creating the many courtyard enclosures. Exploring the walls' narrow interior passages has become, itself, a popular guest pastime. That's because the structure "forces a long perspective," she says,

"while light plays off various brick patterns, enticing you to venture ever deeper."

The Beijing-based Tsingpu Group, which operates four small hotels, has characterized this latest property in Yangzhou as providing a "journey into the inner self" and emphasized that the journey should also feel culturally rich: the walled oasis hosts nearly 100 activities, such as tea appreciation and local crafts workshops, that, along with meals, are included in the price of guests' stay.

Naturally, the retreat's architecture also had to project a strong sense of place. Yangzhou is a two-hour drive from Nanjing (the former capital of China) and sits on the northern bank of the historic Yangtze, Asia's longest river, which is dotted with tourist attractions. Generations of emperors have visited Yangzhou to experience its cuisine and the elaborate gardens of its wealthy scholars and merchants. Those gardens—combinations of pavilions, rocks, and horticulture—were places for contemplation and the enjoyment of food, tea, poetry, painting, and music, just as they are at the Neri&Hu-designed retreat.



In the two years the project took to build, the firm embraced Yangzhou's history by interviewing locals, studying gardens, and salvaging 1.2 million bricks to construct the wall. Many bricks bear the patina of their previous use. In some parts of the wall, bricks are arranged to completely enclose a corridor, invoking the protective function of traditional walled properties. In others, the brickwork features spaces between each break, resulting in patterns that mimic a perforated screen and provide mysterious glimpses of private plazas and inviting views of bamboo groves or a single tree—the architects' contemporary riff on the same elements in traditional Chinese gardens.

They also played with elevations, creating communal spaces with

amphitheater-style sunken seating in some of the squares, by digging or filling in land. Conversely, some brick stairs lead up out of the passageway to a second story, where a mazelike series of balconies lining the top of the wall invites guests to wander and admire the surrounding landscape.

"We used the idea of a wall as both a landscape and an architectural strategy," Neri says. "It's the blurring of both that allowed the project to sit beautifully in the site." ■

Alexandra A. Seno is a Hong Kong-based architecture and design critic who has written for The Wall Street Journal and The New York Times, among other publications.



credits

ARCHITECT: Neri&Hu Design and Research Office – Lyndon Neri, Rossana Hu, principals in charge; Valentin Brunetti, senior architectural designer; Federico Saralvo, Ziyi Cao, Fong Huang, Sela Lim, Zhao Lei, Callum Holgate, Leyue Chen, Sean Shen, Xin Liu, Bin Zhu, Nicolas Fardet, Yun Wang, Jin Zhang, project team

ENGINEER: Shanghai Nuclear Engineering Research & Design Institute

CONSULTANT: Bamboo Lighting Design

GENERAL CONTRACTOR: CNTC

CLIENT: Tsingpu

SIZE: 45,000 square feet

COST: withheld

COMPLETION DATE: October 2017

SOURCES

WINDOW FRAMES: Dasso Group

HARDWARE: Häfele

ROAM AND REST An enclosed corridor leads to reception in one direction and a serene seating area surrounded by water in the other (above). The Lakeview guest rooms and baths (opposite, bottom, left and right) feature modern heating and cooling systems, but also open up to fresh air and stepped seating next to a reflecting pool (opposite, top).

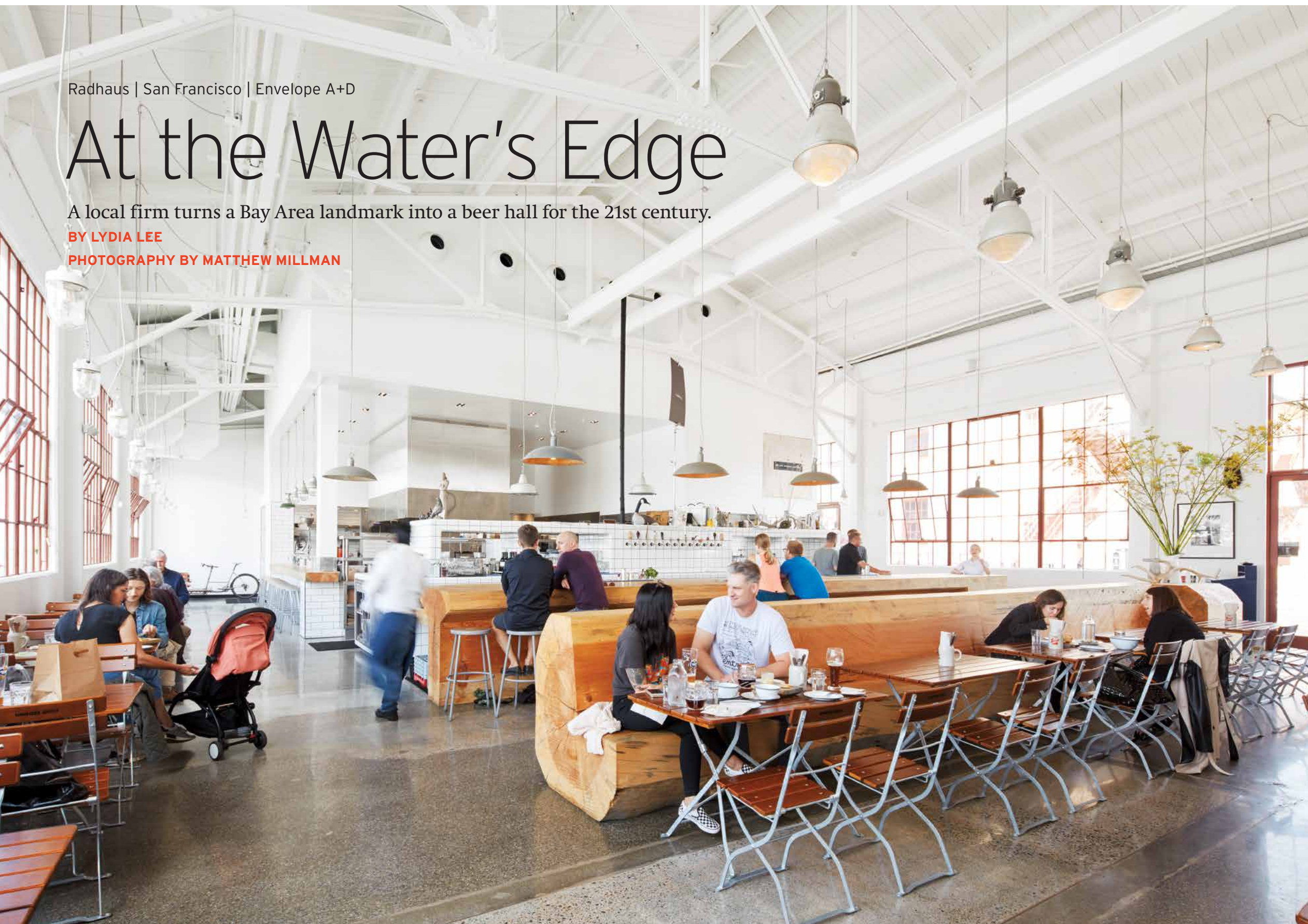
Radhaus | San Francisco | Envelope A+D

At the Water's Edge

A local firm turns a Bay Area landmark into a beer hall for the 21st century.

BY LYDIA LEE

PHOTOGRAPHY BY MATTHEW MILLMAN



German beer halls, which occupy spaces ranging from dark cellars to temporary tents, don't necessarily depend on architecture to foster *gemütlichkeit*—a sense of camaraderie. But San Francisco's latest version, Radhaus (the third Bavarian-style restaurant in the city from twin restaurateurs Aaron and Matt Hulme), notably relies on its materiality and waterfront views to enhance the experience of dining on Wiener schnitzel, bierwurst, and nine types of Bavarian draft beer.

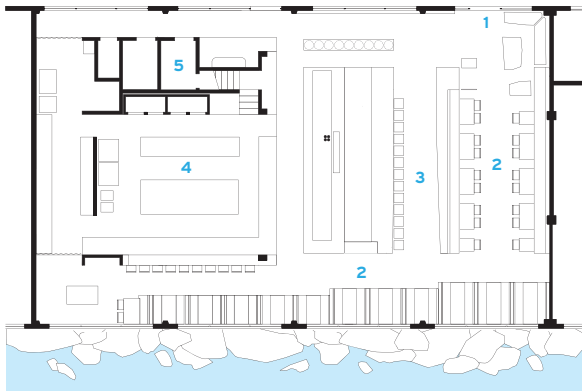
"It's in keeping with German beer halls that are big, beautiful spaces where the whole town comes together," says Douglas Burnham, a principal of Berkeley-based Envelope A+D, which designed Radhaus. "There's a grandeur to these places."

The welcoming 125-seat eatery sits in a steel-truss and concrete-block warehouse that features a 28-foot-high ceiling and 1,350 square feet of steel-sash windows overlooking a marina and the Golden Gate Bridge. (Some windows were bricked over and had to be restored to give back the space's abundant views and light.) Recently, the Fort Mason Center, a nonprofit that manages the larger Fort Mason Historic District, which is a former military port on the city's northern waterfront, moved its offices out of the 3,850-square-foot building to bring in a hospitality tenant that would help make it a destination, like residents of other revitalized landmarks nearby. Radhaus's walls once contained a 1934 naval machine shop. That history and a mix of programming brought in by neighbors such as the San Francisco Art Institute (RECORD, March 2018) make the location ideal for Envelope A+D's fresh take on a traditional beer hall, render it inviting to a new generation.

To transform the historic structure into a bustling restaurant, the architects first restored its impressive open bay, which the previous tenant had divided with interior walls. That cleared the way for the firm's main move: building a 1,300-square-foot, two-tiered mezzanine block at the center of the floor, with offices and dry storage on one



DINING ROOM WITH A VIEW Radhaus occupies one of several landmark buildings that once served as a military port on San Francisco's northern waterfront. The group of buildings is collectively known as the Fort Mason Center for Arts & Culture.



GROUND-LEVEL PLAN

0 12 FT.
4 M.

- 1

ENTRY
- 2

DINING AREA
- 3

BAR
- 4

KITCHEN
- 5

RESTROOM

level, and mechanicals for the busy nine-person kitchen on the other. A new mat-slab foundation supports the weight of these neatly enclosed mezzanine spaces and the open kitchen created in the area beneath them. The building-within-a-building is the team's solution to historical-preservation guidelines, which prohibited placing anything on the red-tile roof, including necessary new mechanical systems. Supply air enters the mezzanine through a small amount of exposed ductwork, and concealed fans pump conditioned air out through porthole-shaped vents. The architects painted the mezzanine, its support columns, walls, and ceiling white, including the steel trusses, pipes, ductwork, and an indoor crane left over from the space's industrial days, to enhance a sense of voluminous space.

To complement the grandeur of the views and the ceiling height, the design team wanted some furnishings to have their own monumentality. To that end, they worked with Evan Shively at Arborica, who salvaged two 300-year-old Ponderosa pines and milled them into the restaurant's signature elements—a 30-foot-long bar and a massive bench that provides communal seating (a staple of traditional beer halls). The standing bar, counter seating, and simple wooden-slat folding chairs and tables, add to the hall's informality. "It's a hardworking space, but we wanted it to seem effortless," says Burnham. ■

THE FLOOR SHOW To offer views of the Golden Gate Bridge, the architects restored a significant portion of the 1,350 square feet of windows (opposite, top). The dining area's bench seating and the bar (above) are made of salvaged 300-year-old pines. A new structure with its own foundation (opposite, bottom) holds the kitchen, mechanicals, and storage.

- credits

ARCHITECT:

Envelope A+D – Douglas Burnham, founding principal; Lex Phelan, associate architect, partner

ENGINEERS:

MHC (m/e/p); Mosswood (structural); Romig (geotechnical)

GENERAL CONTRACTOR:

ACI General Contractors

CONSULTANTS:

JP Ziller Tile

CLIENT:

Aaron Hulme and Matt Hulme

SIZE:

5,000 square feet

COST:

\$2 million

COMPLETION DATE:

August 2018

SOURCES

DOORS AND WINDOWS:

Torrance Steel Window

CUSTOM BENCH AND BAR:

Evan Shively of Arborica (fabrication); Gregory Hay Fine Furnishings (finishes)

LIGHTING:

Artefact Design & Salvage (pendants); HALO (LED downlights); WAC Lighting (spotlights)

TILES:

Daltile

T. Culinary Workshop | Seville, Spain | Sol89

Full Circle

A teaching kitchen in the round brings architecture to a movable feast.

BY ANA MARTINS

PHOTOGRAPHY BY FERNANDO ALDA



STREET SMART A round and refined classroom kitchen greets diners entering through its unassuming, graffiti-covered front door (above). Constructed around an existing cast-iron column, the restaurant itself is basically an umbrella-shaped ash frame (opposite), dropped inside a rectilinear interior. It can be easily removed.

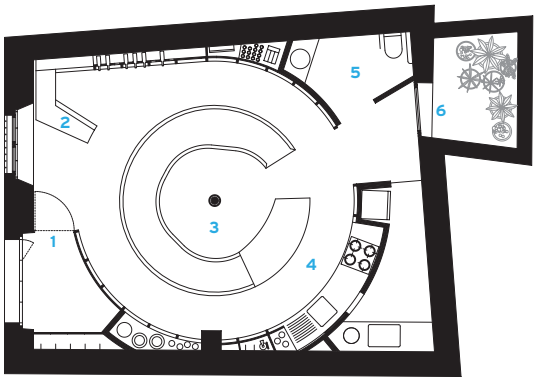
A “slow food” establishment, the T. Culinary Workshop in Seville, Spain, demonstrates a novel way to heighten its mission of participatory cooking and dining: through architecture. Its intimate design by María González and Juanjo López de la Cruz, of Sol89, uses a series of concentric circular zones within a polygonal ground floor to draw attention to the chef’s activities.

Formerly a 19th-century warehouse in the city’s Casco Antiguo (Old Town), the restaurant, owned by sibling chefs Ricardo Llinares and Javier R. Llinares, serves only 15 diners each evening, with meals based on locally sourced ingredients. (In addition to developing recipes and conducting gastronomy courses, the workshop also holds wine tastings.)

Visitors arriving at T. Culinary Workshop first encounter a raw masonry facade, with graffiti emblazoned on the old wood doors. The initial unprepossessing appearance heightens the sense of surprise when diners step into a 635-square-foot circular room lined with blond wood. Dominated by a ring-shaped wood dining table and a chef’s work counter under a parasol-like canopy, fashioned of slats of ash wood, the room exudes a sense of warmth.

The dining area is surrounded by a curvilinear structure, also of ash, into which are built the kitchen, storage, and service areas. Beyond this are the exposed brick walls of the original orthogonal space. The architects’ simple gesture of placing these concentric circles within an almost square volume “put





- FLOOR PLAN
- 1 ENTRY
2 RECEPTION
3 DINING
4 KITCHEN
5 RESTROOM
6 PATIO

ROUND PEG, SQUARE HOLE The architects’ own adjustable-height table (above, left) helps define the dining space. Gaps between the building’s walls and those of the tentlike frame hold storage, a restroom, and the entrance (above, right). A chef’s station, with its brass-appointed range (opposite), is visible from anywhere in the room.

The architects collaborated with furniture designers and fabricators Ignacio Sánchez Martín and Nicholas Chandler on crafting the dining table and chef’s work counter. Using found wood from pruning or windfall in the parks or streets such as olive, orange, cypress, black lotus, and other species, the team constructed the table’s seven segments, which can be individually adjusted to different heights, depending on the event. “We collect the wood from rubbish, and then dry it,” says Sánchez Martín, adding that it takes a full year for each 1-inch thickness of wood to cure. Further reinforcing the idea of collaboration, the ceramics studio Kookinja PotMic worked with the design team in creating the tableware.

“In this project, everything is handmade and considered carefully,” Chandler says. “It’s unusual to work with architects who are so willing to listen and to incorporate other people’s visions and ideas.” To simplify construction and keep the budget down, the architects formed the overall ash wood structure from prefabricated parts assembled on-site.

Sol89’s talent for building by listening to and expanding on the expertise of the clients and collaborators afforded this small project its grandeur. “There wasn’t only a functional program, there was also an emotional one,” says López de la Cruz—one where “slow food, slow architecture, and slow timber,” as everyone involved puts it, meet to create a superb setting for T. Culinary Workshop. ■

Ana Martins is a Netherlands-based journalist and editor.

the cooking and dining space center stage,” says López de la Cruz. At the center of the room, a 19th-century iron column, painted white, acts as the linchpin of the new design—much as the central pole of a tent does—with wood spokes spreading out from the stanchion. Cables attached to this armature carry a halo-like white steel lighting fixture that hangs above the dining table, emphasizing the circular theme. The LED fixture atop the chef’s worktop is controlled separately.

credits

ARCHITECT: Sol89 – María González, Juanjo López de la Cruz, partners; Elena González, Rosa Gallardo, Cristóbal Galocha, project team
GENERAL CONTRACTORS: Fernandez Carbonero and Carpintería Manuel e Hijos
CLIENT: ConTenedor Cultural
SIZE: 635 square feet
COST: \$76,000
COMPLETION DATE: December 2018

SOURCES
KITCHEN: Art Culinaire-LaCanche USA
FURNITURE: Ignacio Sánchez Martín with Nicholas Chandler
WINDOWS: Inalsa Group

Under | Lindesnes, Norway | Snøhetta

Into the Deep

A restaurant submerged in water offers a close view of sea life.

BY ANDREW AYERS



ADRIFT Snøhetta anchored a reinforced-concrete tubular restaurant to plunge into a rock-lined bay (this page and opposite, top and bottom), allowing guests to drink and dine beneath its surface.



A lot of what we do is directly related to strong landscape situations,” says Kjetil Trædal Thorsen, a founding partner of Snøhetta. This is rather an understatement with respect to their latest completed project, the \$8.1 million Under restaurant at Lindesnes, on Norway’s southern coast, which plunges 16½ feet beneath the waves, to allow diners to get up close and personal with marine life on the North Sea floor. Commissioned by hotelier brothers Stig and Gaute Ubostad (one of whom is a keen diver), Under was initially planned for a quayside site next to their Lindesnes Havhotell. But after Snøhetta came on board, it was moved to a nearby rocky bay to achieve the strongest possible connection to the ocean at its wildest.

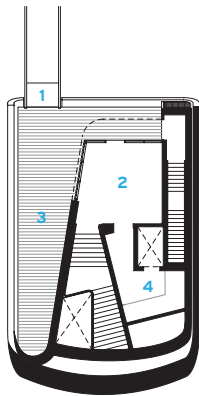
Driven by a swashbuckling entrepreneurial spirit, the Ubostads aim to compete with similar submerged restaurants in warmer spots like the Maldives and Dubai. Inaugurated in March, Under seats 40 people, with more accommodated at the midlevel bar, and it is already fully booked until October. In addition to fine dining, it offers marine biologists unprecedented observation conditions, pulling off a trick similar to Snøhetta’s wild-reindeer



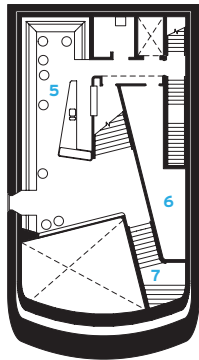
PHOTOGRAPHY: © INGER MARIE GRINI/BO BEDRE NORGE (OPPOSITE); ANDRÉ MARTINSEN (TOP); TOMASZ MAJEWSKI (BOTTOM)



EXPLODED AXONOMETRIC

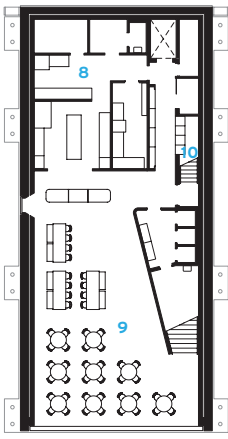


ENTRANCE-LEVEL PLAN

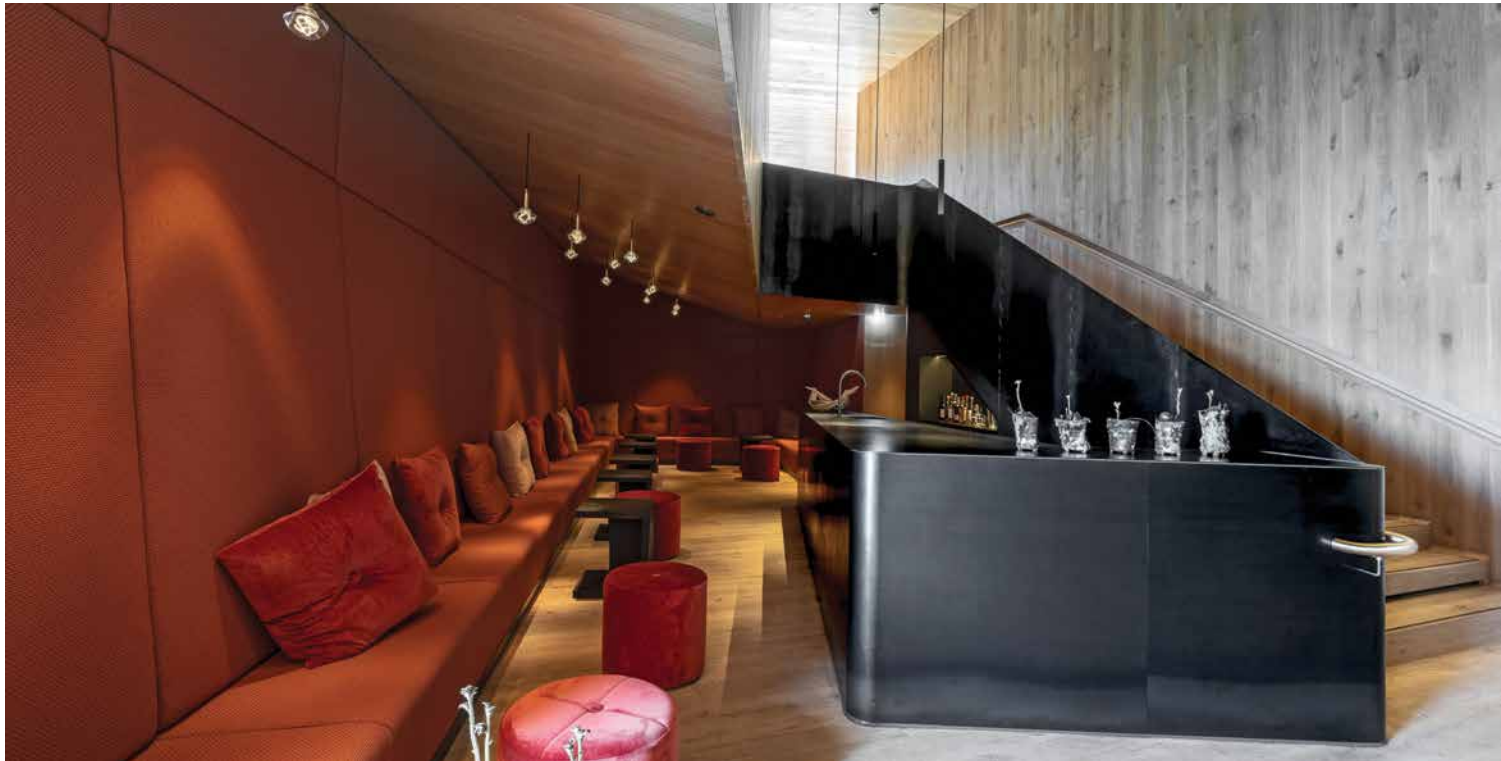
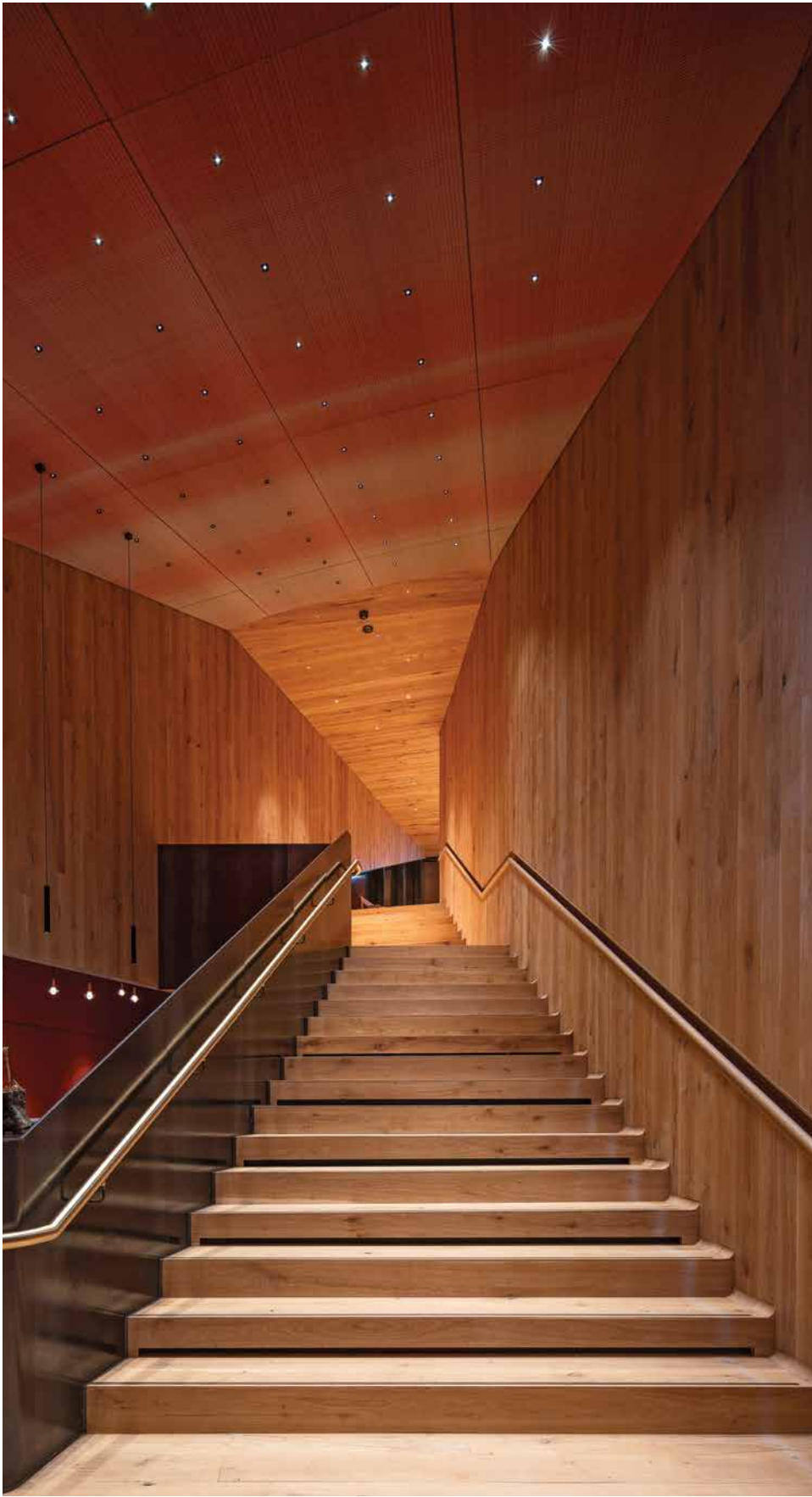


MEZZANINE BAR LEVEL PLAN

- | | | | |
|---|-----------------|----|--------------|
| 1 | ENTRANCE BRIDGE | 6 | TECHNICAL |
| 2 | LOBBY | 7 | MAIN STAIR |
| 3 | TERRACE | 8 | KITCHEN |
| 4 | COAT CHECK | 9 | DINING ROOM |
| 5 | BAR | 10 | WINE STORAGE |



RESTAURANT-LEVEL PLAN



AQUA VIEW The oak stair (opposite) descends from the entrance, past the bar (above), down to the dining area (right). A 35-foot-long, 11-foot-high, and 10-inch-thick slab of acrylic separates diners from their aqueous environs.

pavilion in Norway's Dovrefjell National Park. To minimize impact on the seabed (no dredging and pumping), the architects and their engineers, Asplan Viak, devised a clever construction solution by building the main structure on a barge next to the hotel, sinking the barge to leave the restaurant floating in the water, then towing the structure to the site with a crane vessel, loading it with water-filled containers to submerge it, and finally bolting it down onto pre-prepared foundations. None of the technology used was new—much of it comes from the oil industry—but its novel combination here was highly ingenious.

Eight steel piles descend 52 feet to secure a concrete platform cast in the shape of the building's footprint. Concrete was also the obvious material for the shell (especially since Under is intended as an artificial reef on which marine life will grow), while the tubular surface it presents to the waves is the ideal form for resisting external pressure (a solution Snøhetta had adopted for the fly tower of the Oslo Opera). A cutaway in the upper part of the structure, which rises 10 feet above the waterline, allows for a small outdoor walkway and entrance porch, as well as exposing some oak boards that also line portions of the interior, like the soft part of a razor clam protruding from its shell. Linking the restaurant to land, a galvanized-steel bridge carries power and fluid lines on its underside.

In comparison to the outlandish strangeness of the object from the outside, Under's interior appears curiously, and perhaps a little disappointingly, familiar. After crossing the varnished-oak entrance porch and passing through the raw-oak entrance hall, descending into the



main space feels like entering a movie theater. “We wanted to avoid all sense of anxiety in an underwater restaurant,” explains lead project architect Rune Grasdahl, “so, wherever you are, you can orient yourself with respect to sea and sky.” Just as in a movie theater, the farther down you go, the closer you get to the screen—in this case a 35-foot-long, 11-foot-high, 10-inch-thick slab of transparent acrylic—while the walls and ceiling, again like a cinema, are upholstered with acoustic panels (there's even a movie-theater galaxy of twinkly lights above your head). Issues of condensation and insulation made it impossible to leave the raw-concrete interior of the tube exposed, so the interior fabric panels cover gypsum sheathing, a 15-inch layer of mineral-wool insulation, a waterproof membrane, and a 4-inch air gap.

OVER UNDER

Two patrons stand on the glass floor in the mezzanine bar (right), where a window in the enclosing walls extends to the dining level below (bottom).



"It's not every day you construct a building both over and under water," says Snøhetta's senior interior architect, Heidi Pettersvold Nygaard, "so the authorities insisted it must be as fire-resistant as an airport." The upstairs oak cladding is thus 11 inches thick; the oiled-steel sheathing on the lower levels is pretty hefty too, while the acoustic panels are made from flame-retardant fabric woven with a color gradient that morphs from red to blue the deeper you go. Under is a total immersive experience for which Snøhetta designed almost everything, from the raw-oak chairs to the steel serving table. Though they played it safe on the inside—this board-formed concrete redoubt, reminiscent of the Nazi bunkers that still dot the Norwegian coast, would have been a perfect candidate for the kind of radical experimentation proposed by Claude Parent and Paul Virilio in the '60s—there are some deft touches. A vertical window dramatizes your descent below the waves; the blue color at the lowest level prolongs the aqueous light inside; and the problem of internal nighttime reflection is solved by lights on the sea bed, which also attract marine life. The scientists are thrilled, and have already observed jellyfish species they'd never seen in these waters before. But there remains the troubling exis-

tential question of who exactly is looking at whom in this disconcerting reversal of roles, where the humans are in the "aquarium," and the fish are out in the wild. ■

Andrew Ayers is a Paris-based writer, translator, and educator.

credits

ARCHITECT: Snøhetta – Kjetil Trædal Thorsen, founding partner; Rune Grasdøl, lead project architect; Heidi Pettersvold Nygaard, senior interior architect

ENGINEER: Asplan Viak (structural)

CONSULTANTS: CoreMarine (wave impact); Drag (fire); Brekke & Strand Akustikk (acoustics); ÅF Light (lighting); Trond Rafoss (marine biology)

GENERAL CONTRACTOR: BRG Entreprenør

CLIENT: Lindesnes Havhotell (Stig Ubostad, Gaute Ubostad)

SIZE: 5,330 square feet

COST: \$8.1 million

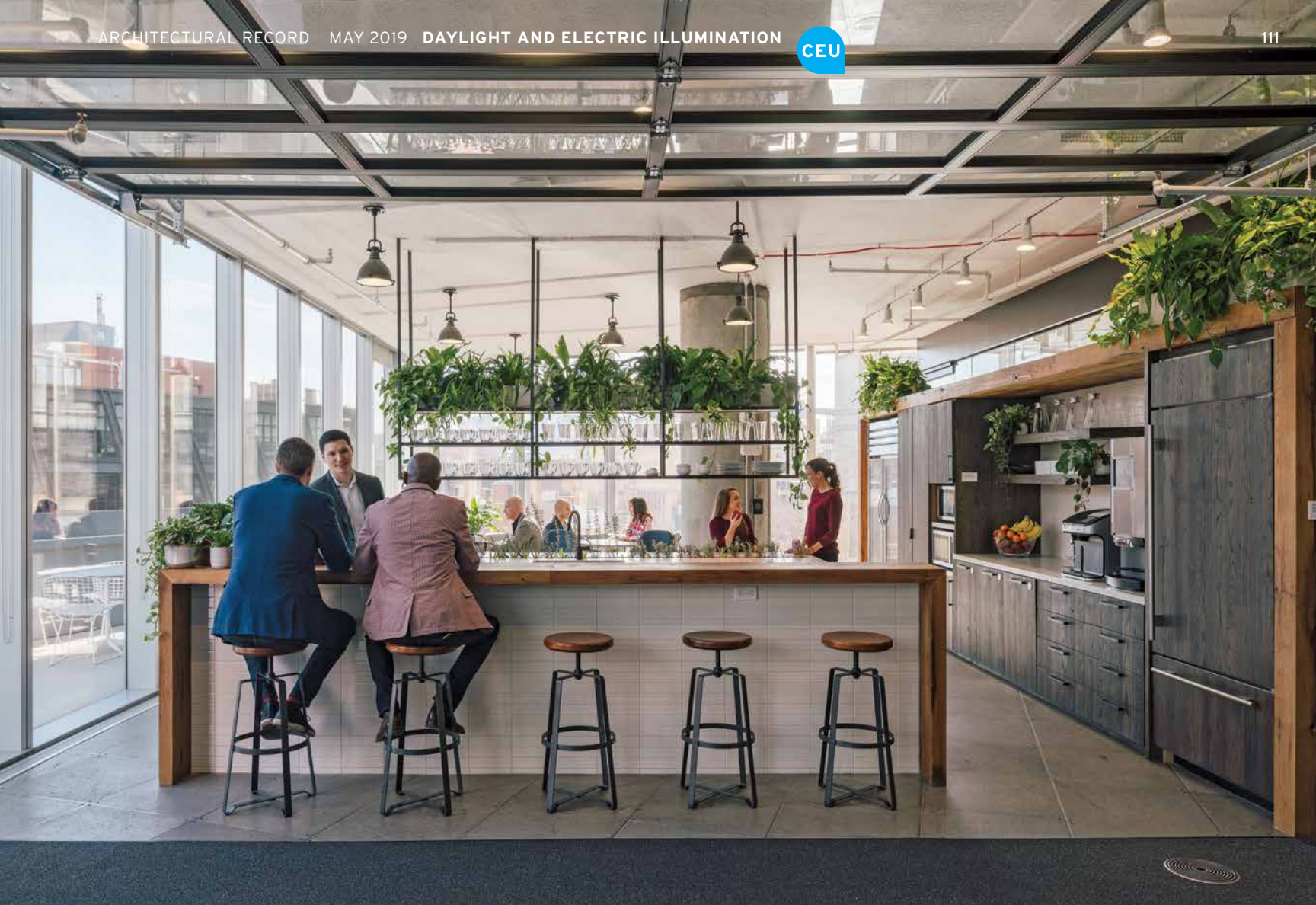
COMPLETION DATE: March 2019

SOURCES

ACRYLIC WINDOWS: Reynolds Polymer Technology

CURTAIN WALL: Tore Andersen

FACADE PANELS: Hamran Snakkerverksted



Full Spectrum

Designers leverage technology to work with, as well as emulate, the light of the sun.

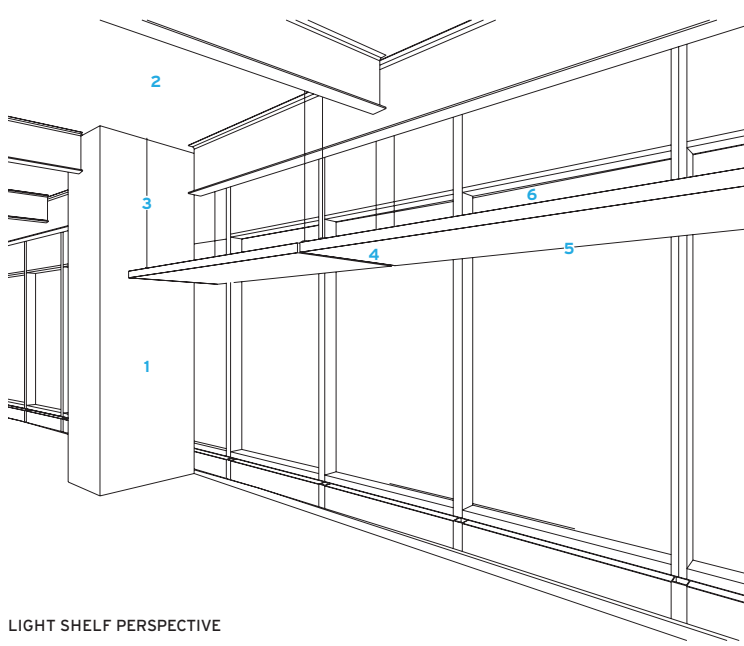
By Joann Gonchar, FAIA

NOT SO LONG AGO, one of the most compelling reasons for daylighting a space was energy savings. Since the 1970s, lighting has been one of the largest users of electricity in buildings. But advances in lighting technology, namely the rapid improvement of LEDs, which are longer-lasting and more efficient than more traditional sources, are changing the discussion. Lighting's energy consumption has been on the decline, representing 17 percent of electricity end use in commercial buildings in 2012, according to the U.S. Energy Information Association, down from 38 percent in 2003. Electric illumination's slice of the energy pie should fall even more as LEDs develop further and their controls become both more sophisticated and more user-friendly.

Of course, there are other arguments for designing around daylight. Architects have intuitively understood its ability to elevate the experience of their interiors. Now an increasing body of science, accumulated



Delos chose 860 Washington Street, in Lower Manhattan, for its headquarters (above and top), in part because of the daylight and views the building's floor-to-ceiling glass curtain wall affords. The electric lighting scheme uses tunable-white LED luminaires that adjust via a programmed time clock to enhance occupants' circadian rhythms.



- 1 STRUCTURAL COLUMN
- 2 METAL DECK
- 3 CABLE SUPPORT AND 277-VOLT LINE
- 4 DRYWALL ON METAL STUD FRAMING
- 5 SHADE POCKET
- 6 RECESSED LED CAVITY

over decades, has quantified daylighting’s beneficial effects. One still frequently cited 1999 study examined schools in three U.S. districts and found significantly improved performance among students occupying daylight classrooms. Since then, research has demonstrated higher sales figures in skylit big-box stores, as well as better outcomes for patients in hospital rooms with daylight, including shortened stays, reduced need for pain medication, and quicker post-op recovery.

Design teams and their clients are showing

renewed interest in such health and productivity benefits. One chief factor is the expansion of the green building movement to encompass occupant well-being in addition to energy efficiency, says Chad Groshart, lighting-design lead in the New Haven office of Atelier Ten, an environmental design consultant: “The focus is no longer only on how the meter is spinning.”

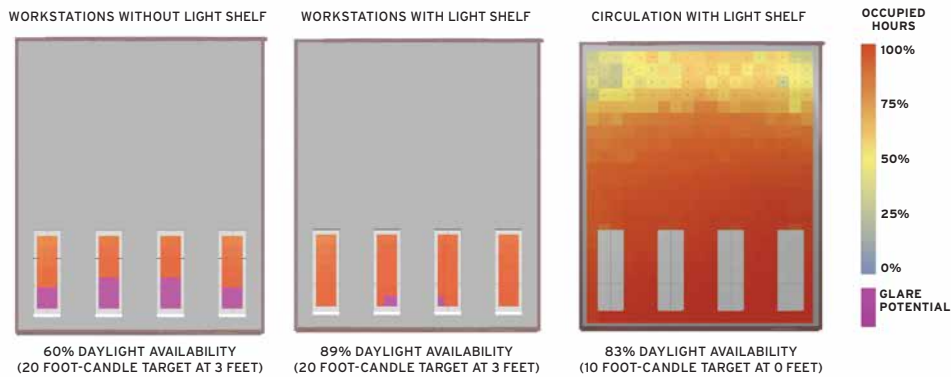
One attribute of daylight that architects are keen to harness is its ability to help regulate our biological clocks, or circadian rhythms. Its

spectral distribution and intensity affect a host of interrelated physiological and psychological functions including mood, alertness, and hormone levels. Designers are also eager to use electric light to improve these functions, a possibility enabled by the advent of tunable-white LEDs, which have color temperatures that can range from very warm to very cool. But experts warn that there is still debate about the optimum color, timing, and duration of exposure in such electric illumination. “Circadian lighting design is more of a lengthy experiment rather than an authoritative design standard,” says Brian Stacy, Arup’s lighting lead for the Americas. Groshart echoes this view: “Sunlight is the best circadian light,” he says, advising that project teams seeking to help regulate occupants’ internal rhythms should first focus on strategies for achieving the best quality daylight, including the orientation, form, and fenestration of the architecture.

Such factors can be readily manipulated when designing a new building, but tenant fit-out projects or the renovation of existing buildings naturally require a different approach. An example is one of Groshart’s own projects, the New York headquarters for Delos, the wellness real-estate and technology company best known for creating the WELL Building Standard (the rating system is now administered by Green Business Certification Inc.). Delos moved into its space on the fourth



Arup’s new Los Angeles offices integrate daylight and electric illumination by means of an interior light shelf. The device shields the interior from glare and directs sunlight to the ceiling, thereby getting daylight farther into the interior. It incorporates tunable-white LEDs for times when natural light is not sufficient.



DAYLIGHT AVAILABILITY AND AUTONOMY DIAGRAMS

Studies of the daylight conditions at the workstations (above, left and middle) and at circulation spaces near the core (above, right) guided the design of the light shelf for Arup’s new offices.

and fifth floors of 860 Washington Street, a new 10-story structure by James Carpenter Design Associates and Adamson Associates Architects in the city’s Meatpacking District in late 2017. The organization picked the building in large part for its floor-to-ceiling glass curtain wall on three of its four facades, since both daylight and views are important aspects of WELL. This skin affords ample daylight and views of the adjacent High Line park and the rest of the neighborhood. (The offices have been certified WELL Platinum, have earned Living Building Challenge “petal” status, and are on track for a LEED Gold or Platinum rating.)

The project’s architect, Gensler, with Atelier Ten as lighting designer, developed the 19,000-square-foot office with a variety of environments, including “free address” workstations, a café, and meeting and focus rooms, all organized around a central stair featuring a digital artwork that is activated as occupants ascend or descend. At least 75 percent of the space is within 25 feet of a window, representing a daylighting asset, but also a challenge due to the potential for glare and the developer’s prohibition against adding exterior shading devices or altering the glass with frits or films. Instead, the problem was addressed with perforated roller shades and careful placement of computer screens in relation to the curtain wall.

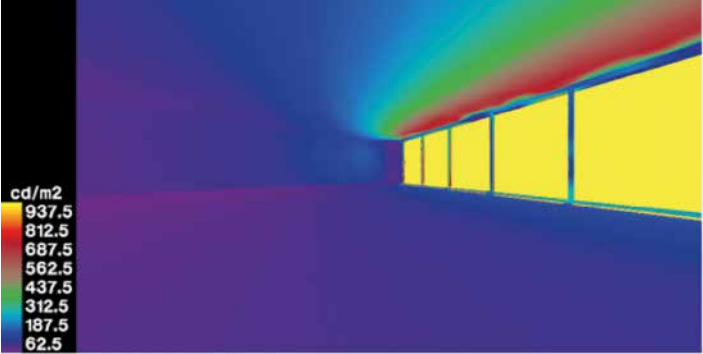
The electric-illumination scheme is designed to supplement available daylight and emulate some of its qualities. The tunable-white LED luminaires throughout the office are controlled via an astronomical clock, changing their correlated color temperature (a metric that defines the color appearance of an LED and is measured in degrees Kelvin) throughout the day. Meanwhile, photo sensors dim the LEDs’ intensity, depending on the amount of available sunlight. The wireless system allows for tightly defined zones as well as the ability for manual override in meeting and training rooms, so that employees can adapt the lighting to specific tasks and preferences.

The Delos team is evaluating the effectiveness of the space’s WELL features, including this tunable lighting system, with its own staff as test subjects. It is using a variety of means, such as periodic surveys and cognitive studies. Once the data have been analyzed, the company plans to release the results, according to Janna Wandzilak, a Delos vice president and a manager of the construction project.

When planning its new offices on the 18th through 20th floors in the Wilshire Grand, in downtown Los Angeles, Arup had to contend with constraints similar to those faced by Delos. This recently completed 73-story mixed-use tower, designed by AC Martin, rises to a sail-shaped pinnacle. The engineering firm could not alter the building envelope, and its tenant agreement required that a particular type of roller shade be used for sun control. But the firm wanted to make the most of available sunlight, projecting it as far as possible into the floor plate. Arup also wanted to avoid glare in order to minimize the time the shades would be drawn, obstructing views of the city.

In order to achieve these goals, the project team, which included Bestor Architecture and SmithGroup, with Arup in charge of lighting and engineering, developed an interior light shelf at the building’s long, slightly bowed south facade. The device, made of drywall, is suspended from the ceiling approximately 8 feet above the finished floor, with each shelf spanning more than 27 feet between columns. Four feet deep and 5 inches thick, to accommodate the required roller blind, the light shelf shields the workstations from direct sunlight while bouncing it to the exposed structural deck above, which has been sprayed with white acoustical insulation to achieve a light-reflectance value of 85 percent. The strategy “allows us to transform the ceiling plane into a luminaire,” says Liberty MacDougall, an Arup senior lighting consultant.

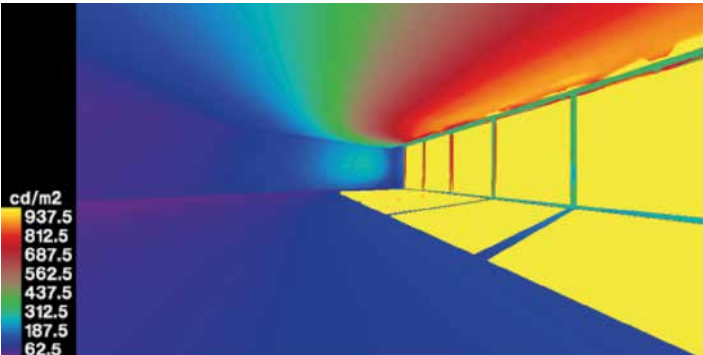
IMAGES: COURTESY ARUP



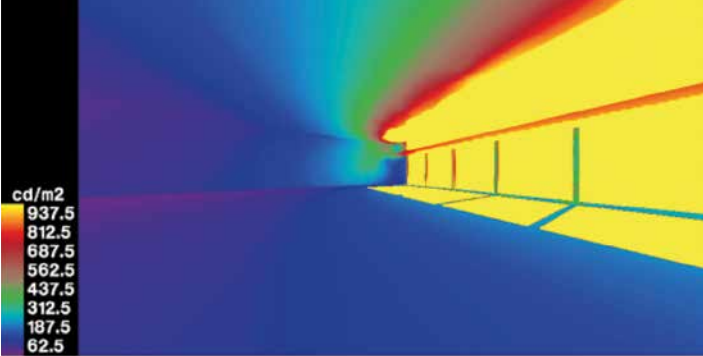
WITHOUT LIGHT SHELF—JUNE 21, 12 PM



WITH LIGHT SHELF—JUNE 21, 12 PM



WITHOUT LIGHT SHELF—DECEMBER 21, 12 PM



WITH LIGHT SHELF—DECEMBER 21, 12 PM

The light shelf in Arup’s new offices reduces the amount of direct sunlight, lessening the incidence of glare while increasing luminance at the ceiling plane.



The light shelf's configuration, dimensions, and placement were arrived at after rigorous examination not typical for a tenant fit-out project, according to MacDougall. This analysis included parametric modeling, taking into account such factors as: the light transmittance of the glazing; the height and location of work surfaces, material finishes, and colors; and the surrounding buildings that block access to sunlight. In addition, the team erected a full-scale mock-up, in a single bay of the 18th floor, to physically test its capabilities, but also to demonstrate to the Wilshire's owner that, from the exterior, Arup's offices would be indistinguishable from those of other tenants.

The firm, which moved into the space in the

middle of April, expects that at least 83.75 percent of open office workstations will receive enough daylight (30 foot candles) to make electric illumination unnecessary for at least half of the annual occupied hours. The innovative aspect of the scheme, according to MacDougall, is that it fuses daylight with electric lighting. For those times when the sun is not adequate, a linear LED lamp, incorporated into the top of the light shelf, along with a pendant LED luminaire suspended over a circulation zone, near the core, will be in use.

Both electric-illumination sources are indirect, relying on the ceiling to reflect light and enhance the perceived brightness, explains MacDougall. Both sources are also tunable,

adjusting, like the LEDs at Delos, via time-clock controls and photo sensors, to qualitatively align with the spectral distribution and intensity of the daylight bouncing off the light shelf.

Tunable systems are occasionally used as a proxy for daylight in spaces without access to sunlight. This is not always for occupant health or productivity reasons, but instead to enhance experiential qualities. Such was the case with the creation of a 1,600-square-foot gallery for First Nations' artifacts at the Museum of Anthropology at the University of British Columbia in Vancouver. The room, a former theater in an early-1970s Arthur Erickson building, had only one small, north-



A new gallery at the Museum of Anthropology at the University of British Columbia in Vancouver (opposite and both above) relies on tunable-white LEDs to mimic actual daylight conditions in real time. A rooftop sensor reads outdoor lighting color and intensity, and a control system adjusts the room's illumination accordingly.

facing window. Although the situation was desirable from a conservation standpoint—many of the objects are fragile and vulnerable to UV degradation—it was less than ideal for museum visitors, since most of the treasures, which include carvings, textiles, and basketry, are best appreciated under daylight.

Stantec, along with AES Engineering for the lighting and electrical design, created a “skylit” room that mimics the actual daylight outside. A shallow, 4-foot-wide cove was built at the perimeter, concealed by stretched PVC. Above the translucent surface are tunable-white LEDs, hung from the existing slab at an angle. The configuration—arrived at both through simulation and physical mock-ups—helped maximize the distance between PVC and the lamp, and allowed the backlit surface to glow uniformly without the individual lamps' being discernible, explains Doug McMillan, a lighting designer at AES. The center of the ceiling includes some track lighting, while the display vitrines incorporate organic light-emitting diodes (OLEDs), well suited to confined spaces. But most of the gallery's lighting is provided by the luminous cove and its LEDs, connected to a DMX controller (a digital communication network first

created for theatrical lighting) and a roof-mounted sensor that reads correlated color temperature and illumination levels. Since there was no off-the-shelf sensor available that measured both attributes and met other project requirements, the team made its own device with parts that included a camera sensor. The apparatus takes a reading every three minutes, gradually shifting from cool to warm to cool over the course of the day and registering changing weather conditions, diminishing the brightness in the gallery when it is cloudy. The installation is so successful claims McMillan, that museum-goers sometimes visit the space multiple times in a single day to view an object under different light.

Although Mcmillan's gallery-lighting scheme seeks to emulate daylight rather than augment it, the Vancouver project, like the offices of Delos in New York and Arup in Los Angeles, illustrates a shift toward closer integration between outdoor and indoor light conditions, and between natural and electric light. In the future, we will surely see, in both new construction and renovations, tighter coordination of daylighting with artificial illumination—a trend that will only enrich occupant experience. ■

Continuing Education

To earn one AIA learning unit (LU), including one hour of health, safety, and welfare (HSW) credit, read “Full Spectrum,” review the supplemental material found at architecturalrecord.com, and complete the quiz at continuingeducation.bnpmedia.com or by using the Architectural Record CE Center app available in the iTunes Store. Upon passing the test, you will receive a certificate of completion, and your credit will be automatically reported to the AIA. Additional information regarding credit-reporting and continuing-education requirements can be found at continuingeducation.bnpmedia.com.

Learning Objectives

- 1 Explain why energy efficiency is less of a motivator for daylighting than it once was.
- 2 Discuss studies that link daylighting to improved occupant health and productivity.
- 3 Discuss the role of light in regulating circadian rhythms.
- 4 Explain how tunable-white LEDs can replicate or augment some of the qualities of sunlight.

AIA/CES Course #K1905A



A Delicate Balance

A trio of schemes exploits natural and electric light in surprising ways.

- 118 Tech Company Office, California
- 122 Swarovski Manufaktur, Wattens, Austria
- 126 Fortnum & Mason at the Royal Exchange, London
- 128 Products: Euroluce, Milan



Tech Company Office

Jensen Architects
Horton Lees Brogden Lighting Design
By Lydia Lee

WHEN THE design team at Jensen Architects first considered the idea of using dichroic glass in the renovation of a 1980s-era office building for a technology company, principal Dean Orr was skeptical. “I just thought of those cheesy belt buckles from the 1970s and wondered if it would look gimmicky,” he recalls. But the San Francisco firm, known for its refined minimalism on such projects as the renovation and addition for artist David Ireland’s house (RECORD, February 2016), did use the color-changing material, to surprising effect, along with a freshly stripped-down material palette and updated lighting scheme, regenerating the nearly 40-year-old structure for the young screen-centric workplace.

The overarching challenge was to transform the three-story building, which was designed to house multiple tenants, into a cohesive space for a single tenant. The structure has an X-shaped plan, with a skylit central atrium that separates the east and west wings, accessed by discrete elevator cores. Jensen’s client wanted its 600 employees to mingle rather than be siloed on the various floors. The architects’ solution: to put the common amenities—the company café and large meeting rooms—on the ground floor, and bisect the atrium with stairs to turn it into a high-profile circulation corridor.

The building’s cruciform layout made lighting problematic. While it had narrower floor plates and more glazing than the typical office, the glass was only 20 percent transmissive and still let in glare. The lighting consultants at Horton Lees Brogden Lighting Design (HLB) protected the many facades by installing manual shades throughout. To infuse the upper level with more natural light, they installed industrial and tubular skylights above private offices and

COLOR FACTORY
Dichroic glass panels refract light so that the colors you see change as you move, creating a vibrant cafeteria (above) that draws people from the daylit atrium (top, left) and central stair areas (opposite).

PHOTOGRAPHY: © CESAR RUBIO (TOP, LEFT);
MARIKO REED (TOP, RIGHT; OPPOSITE)



meeting rooms near the core of the building.

The client specifically did not want linear fixtures in the open office where the desks are located. HLB selected 17-inch-diameter industrial pendants that provide both uplight and downlight with a cool color temperature of 4000 Kelvin (K) that provides even, neutral illumination. Meanwhile, the café and lounge areas are lit with bare LED A-lamps at a warmer 2700K for a more intimate ambience. Because the staff conducts a lot of business via videoconferencing, special attention was given to the lighting of the private phone booths, which are lit not just from above but also from the side, via a wall sconce and a table lamp specified by the architects. (Jensen took the lead on the decorative fixtures). A fringe benefit: employees of color say they no longer fade into the background. HLB also worked to softly illuminate a large artwork created by the architects in a lounge area near the atrium. The 6-by-14-foot piece of backlit etched glass is laminated with a magnified photograph of nearby San Francisco Bay’s coral-red salt fields. The image is





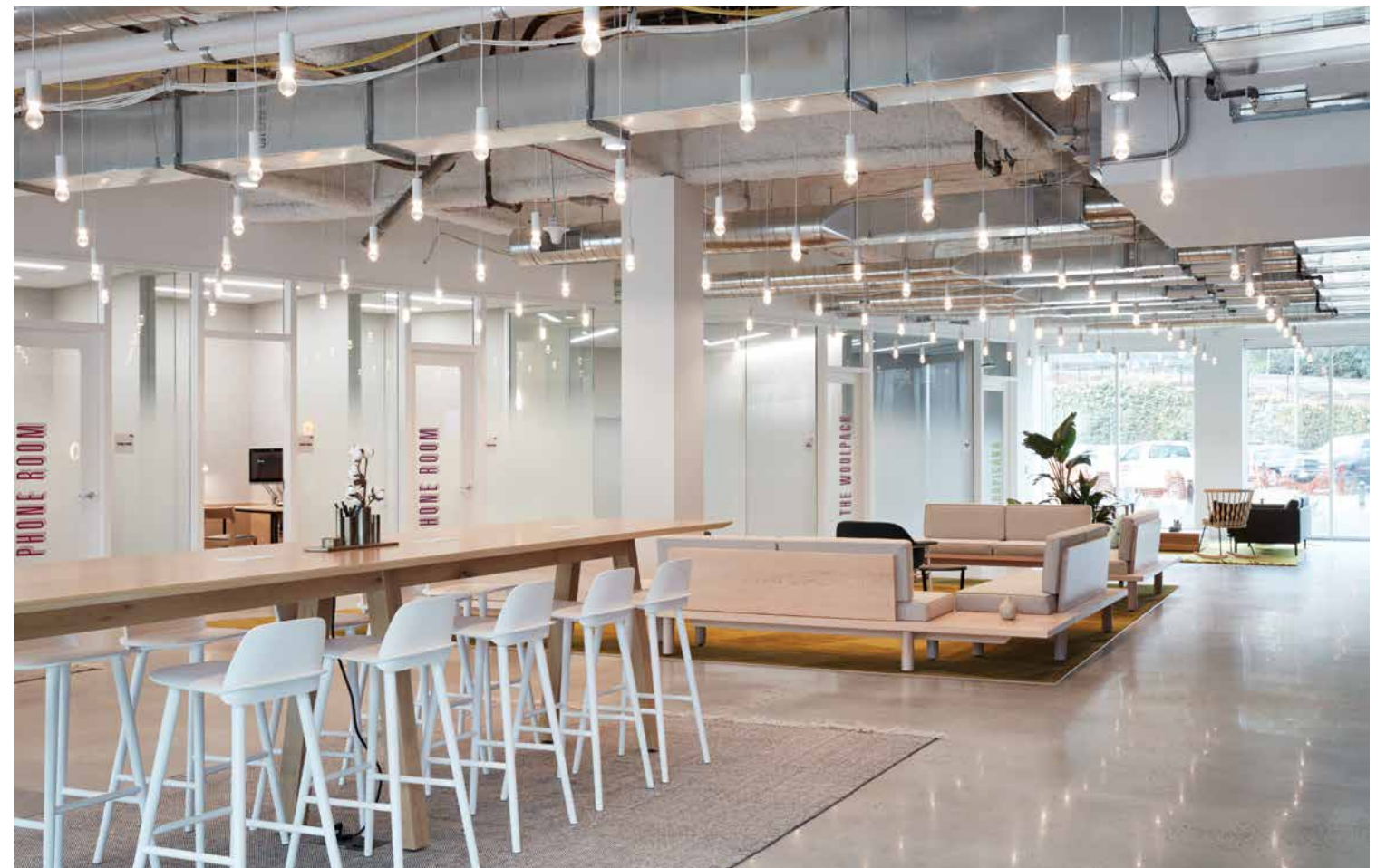
LIGHT SHOW
Pixelated LED displays enliven the office (above), while industrial fixtures and suspended A-lamps (opposite, top) invoke a "warehouse turned gallery," as does a backlit artwork over a casual seating area (opposite, bottom).

an abstract expanse of colors that looks like a glowing Rothko painting.

The effective but quiet integration of natural and electric lighting systems is enlivened by the playful, iridescent qualities of the dichroic glass, which brings both color and reflectivity to the space. It is used in several ways. In collaboration with the New York-based design firm Office of Things, the design team developed a series of dynamic digital installations with the versatile glazing. Bands of LEDs, sandwiched between dichroic glass panels and sheetrock walls, are pro-

grammed to loop abstract, pixelated displays at the ends of open-office areas and behind the reception desk.

The architects also used the vibrant glass to separate the private offices from the corridor; since the film is somewhat reflective, it provides a level of privacy screening for the occupants. Finally, and perhaps most dramatically: reflections that bounce off dichroic-glass dividers in the ground-floor café make the space seem infinite. This is a fitting metaphor for today's digital technologies—ubiquitous and ever morphing into new genres. ■



credits

ARCHITECT: Jensen Architects – Mark Jensen, principal

LIGHTING DESIGNER: Horton Lees Brogden Lighting Design

ENGINEERS: Degenkolb (structural); BKF (civil); AlphaTech (m/e/p)

GENERAL CONTRACTOR: GCI

CONSULTANT: Office of Things (digital installation design); One Workplace (furniture); Ricca Design Studio (kitchen design); Marx|Okubo (accessibility); Heather Day (mural artist); CBRE (project manager)

CLIENT: withheld

SIZE: 140,000 square feet

COST: withheld

COMPLETION DATE: March 2018

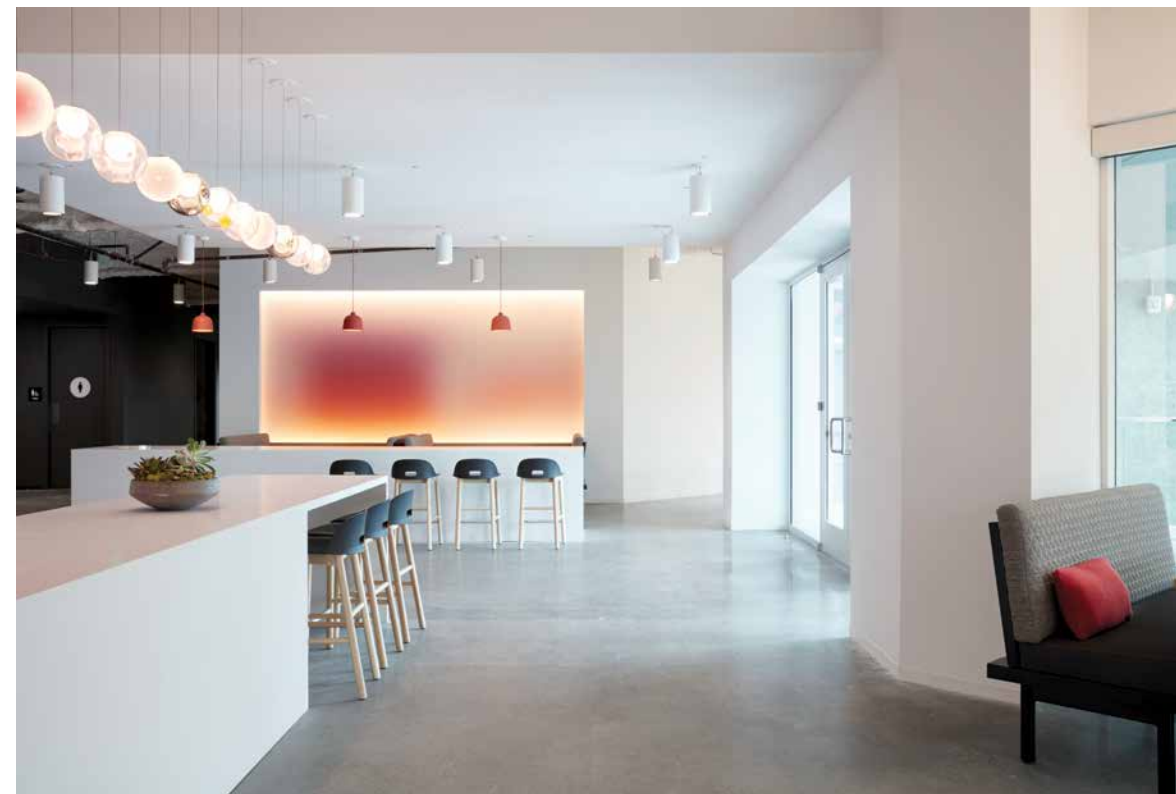
SOURCES

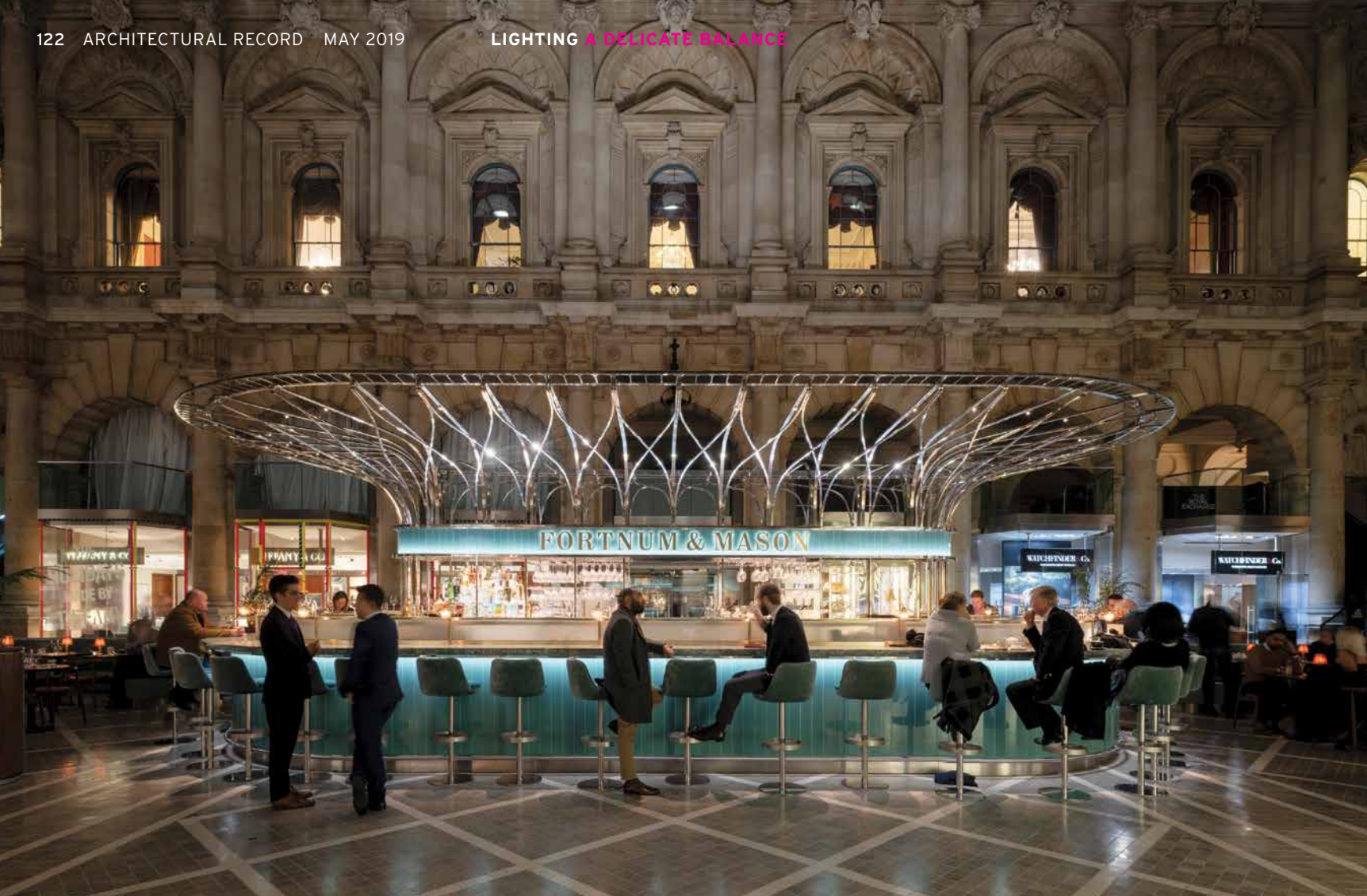
LIGHTING: Finelite; ERCO; Delray; ALW; Davide Groppi; Vibia; Electric Mirror; Muuto; Bocci; USAI; iGuzzini; Delta Light; V2 Lighting

CONTROLS: Enlighted

INTERIOR GLAZING: 3M (dichroic film); GlasPro (laminated glass panels)

PHOTOGRAPHY: © MARKIO REED (3)





Fortnum & Mason

Universal Design Studio
Speirs + Major

By Chris Foges

FOR THREE CENTURIES, Fortnum & Mason has purveyed fancy food-stuffs from premises on London's Piccadilly, but, in recent years, England's grandest grocery store has branched out, opening three satellite shops and restaurants, each designed by Universal Design Studio (UDS) with lighting by Speirs + Major. The latest is in the city's financial district, where a gleaming Art Deco-inflected Fortnum & Mason bar and restaurant occupies a glass-roofed courtyard at the heart of the imposing Royal Exchange building (circa 1844), designed by Sir William Tite, now an upmarket mall. A Fortnum's store has also been created within one of the glass-fronted units that line its perimeter.

While the neoclassical atrium makes a splendid backdrop, the yawning daylight space presented challenges. "It is a heavily trafficked thoroughfare," says UDS director Hannah Carter Owers. "We wanted the bar to be visually arresting and to atmospherically occupy the space, but without obscuring diners' views of the architecture." Light plays a crucial role, commanding attention and conferring a distinct identity, while varying the ambience over time, with subtly different scenes for day, dusk, and night. "We needed to ensure that, even on a cold December morning, there would be warmth," says Carter Owers, "and that the mood is also right for the end-of-work crowd."

Banquettes enclose groups of loose tables at both ends of an island bar, a rounded rectangle that sits in the center of the space. Cool 3500 Kelvin (K) light from hidden undercounter fixtures lends a vivid glow to the bar's cladding, hand-pressed ceramic tiles in Fortnum's signature eau-de-nil color. A filigree canopy of shiny nickel-plated steel that projects over the bar was inspired by the company's heritage, recalling both its classic silver tableware and tea tents supplied to Victorian travelers. Concealed uplights with a cooler color temperature of 4000K make the metalwork sparkle. The canopy's interior surfaces have a brushed finish "which holds the light better, so the whole thing feels luminous," says Speirs & Major principal Keith Bradshaw.

Bottle displays and the bar counter are bathed in a warmer 2700K light, which is more flattering to the diners, on whose faces it also falls. The figured-marble bar top appears to be lit by bespoke brass fixtures with tinted shades made by glassblower Michael Ruh, but these are discreetly supplemented by small mirror-polished luminaires in the canopy above. The whiskeys, standing on a stack of lightboxes, emit an amber glow. "For a bar to look great, you have to get some light into the liquid," says Bradshaw. As the bar is both a working environment and a display space, the specification of every light source was informed by both functional and aesthetic requirements. Lighting within a glass refrigerator for smoked salmon, for example, was altered to a warm 2400K to bring out the pink tones of the fish.

Glittering like a cocktail cabinet, the bar is the convivial heart of the restaurant, but a different character was required for the dining areas, where individual table lamps cast small pools of warm light. Though the designers sought to replicate the intimacy of candlelight,



SUN CONTROL Speirs + Major created three lighting scenes for the Fortnum & Mason venues that maintain a consistent quality throughout a day's natural cycle (above). A Fortnum's store sits opposite the restaurant along the courtyard's perimeter (right).

the intensity of illumination can be adjusted by diners. "If people have to get their phones out to read the menu, we've failed," says Bradshaw. Due to the difficulty of getting power to tables in the middle of the courtyard, the lamps run on rechargeable batteries.

Extensive preparatory testing and on-site adjustment were necessary to ensure that the quality of light was consistent across the disparate elements of the restaurant and the adjacent store, and to mitigate the natural lighting conditions in the existing space. Speirs + Major's work began with "a huge amount of research into the quality of daylight—where it comes in, and when," says Bradshaw. "Our job is to make natural and artificial light work well together." This exercise shaped the lighting design scheme, but showed that the desired result could be achieved with three programmed "scenes" and did not require a more complex or dynamic control system.

To achieve the best results in dusk and nighttime settings, the designers persuaded the building's owner that existing architectural lighting should be removed, so that the darkened stone facades would look "authentic—like an outdoor piazza," says Bradshaw. Shopkeepers were also asked to moderate the illumination of their premises after closing time.

As one approaches the pedimented entrance to the Royal Exchange at dusk, the bar is clearly visible through glass doors, glowing like a beacon. With warm light twinkling on glass and brass under the shimmering tracery of steel, it exudes elegance and the promise of fun. ■

PHOTOGRAPHY: © JAMES NEWTON



credits

ARCHITECT: Universal Design Studio
LIGHTING DESIGNER: Speirs + Major
CLIENT: Fortnum & Mason
SIZE: 3,100 square feet (bar, restaurant, and shop)
COST: withheld
COMPLETION DATE: November 2018

SOURCES

LIGHTING: Mike Stoane Lighting; Tala; LedFlex UK; Neoz; ACDC; Zumtobel; Precision Lighting; Lumino Lighting; Bright Goods
CONTROLS: Architainment



Swarovski Manufaktur

Snøhetta

Lichttechnik Martin Klingler

Lighting Design International

By David Sokol

DURING THE 1950S, when couturiers Christian Dior and Elsa Schiaparelli famously tapped the manufacturer Swarovski to create custom crystals for their clothing and jewelry, the collaborations would take months as a prototype or small-production batch crisscrossed departments at the company's Wattens, Austria, factory. But serving the fashion industry today requires speed. A new facility named Swarovski Manufaktur, designed by Snøhetta's Innsbruck office, was recently opened to keep pace with its dazzling clients. As firm partner Patrick Lüth explains, "If someone like Gaultier needs a special dress or accessory next Friday, Swarovski has no choice but to act fast."

The new 81,000-square-foot innovation center replicates Swarovski's factory in miniature, so design, prototyping, and approval can quickly take place under one roof. Located between existing buildings and a wall at the southern edge of the Wattens campus, the new workshop also opens the site to visitors for the first time, accommodating client presentations, previously done elsewhere. According to Lüth, Snøhetta conceived a volume "somewhat like an outdoor plaza or a central marketplace," with glare-free daylight and noise-dampening interventions to facilitate productive interaction among the designers, marketing team, and workers who operate the CNC machines and polish the glass.

The building is wedged so tightly onto its site that visitors enter on the second floor via a skybridge from an adjacent structure. To create an agora-like feeling under such cramped conditions, the architects treated the 14,000-square-foot roof as a giant light monitor, punctuating it with 135 skylights installed above a frame of 20-by-10-foot acoustically modified steel bays or coffers. Collaborating with lighting

designer Martin Klingler, based in Moosbach, Austria, they developed this solution to provide maximum daylight minus the glare. The coffers are almost 7 feet deep and angled in section to correspond with solar paths, so the sun's rays never hit the shop floor. Klingler adds that the design team also focused on the quality and specification of the rooftop glazing to attain accurate color rendering and high environmental performance, achieving a low solar heat-gain coefficient and a high color rendering index (CRI) of 94.

PHOTOGRAPHY:
© DAVID SCHREYER

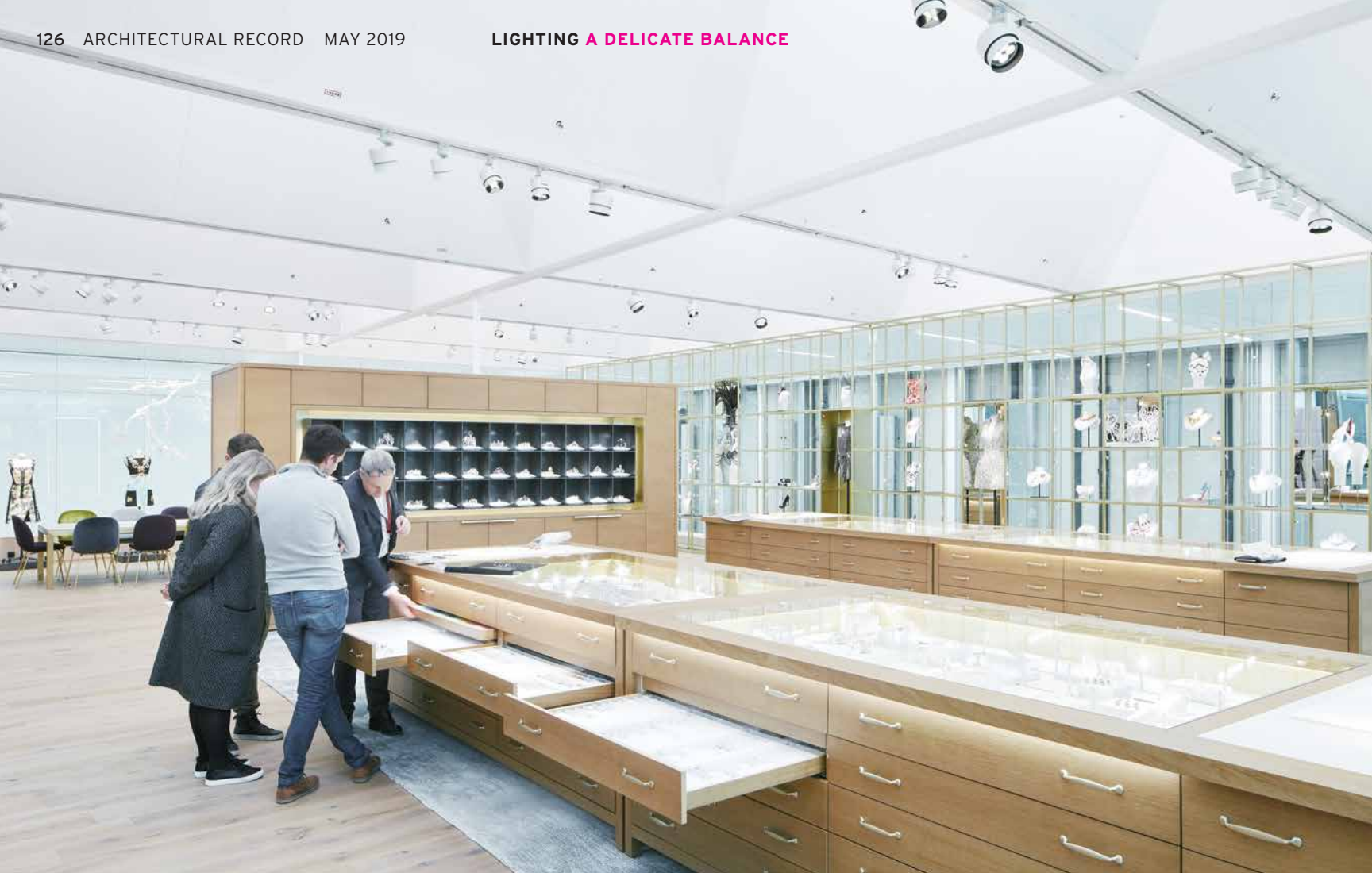


The mezzanine-like second level houses offices, showrooms, and presentation areas that overlook 23,000 square feet of production space. The coffers are largely positioned only above this double-height volume, and, while they achieve daylight penetration through the entire space, Klingler installed a combination of recessed linear luminaires and spotlights using 4000K (Kelvin) LEDs to amplify the daylight with a similar color temperature. Ground-floor workrooms tucked under the mezzanine's overhang benefit

most from this boost, as "tailors love to have bright, diffuse light with perfect color rendering," says Klingler. The lighting designer specified low-glare lamps to accommodate smartphones and computer screens as well.

On the upper level, 16-foot-long panels mounted within ceiling coffers look like the skylights but, in fact, conceal tunable-white LEDs ranging between 2700K and 5500K, with a CRI exceeding 90. These are meant to simulate daylight as well as create a variety of moods. "We are very pleased with

DAY GLOW Second-floor meeting rooms overlook a 23,000-square-foot production space (opposite, left, in background). Linear LEDs, recessed within the ceiling bays, supplement the natural illumination from skylights (above).

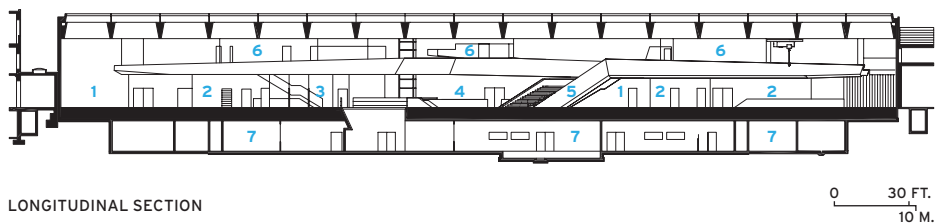


JEWEL BOX Tunable-white LEDs back panels in the ceiling bays for flexible ambient light upstairs, while spots and display-case lighting showcase the crystals.

how the spaces could be transformed while maintaining harmony with the other, non-tunable elements,” says Sally Storey, design director of the London-based Lighting Design International, whom Snøhetta tapped to dramatize the upstairs product displays, using light and shadow. Storey explains that the scheme’s various spot and perimeter lights balance the cool temperatures that best illuminate Swarovski crystals and the warmer tones that humans prefer.

According to Lüth, client and visitor response has been positive. After two notable designers from London toured Swarovski Manufaktur, the architect requested their feedback. They told him that the experience “totally broadened their views about the potential of the company’s products,” says Lüth. “This was not just the result of the physical space,” he adds. “It was also the atmosphere.”

To a great extent, this atmosphere is the product of a beautifully effective daylighting scheme that embraces its electric counterpart, illuminating the vision of even the most creative eyes. ■



LONGITUDINAL SECTION

- 1 PRODUCTION
- 2 WORKSHOP
- 3 OFFICE
- 4 CAFETERIA

- 5 OPEN STAIR
- 6 SHOWROOM MEZZANINE
- 7 BASEMENT

credits

ARCHITECT: Snøhetta (Innsbruck) – Patrick Lüth, partner

LIGHTING DESIGNERS: Lichttechnik Martin Klingler; Lighting Design International – Sally Storey

ENGINEERS: Baumann + Obholzer (structural); ATP Architekten Ingenieure (HVAC, electrical); Spektrum (building physics)

CLIENT: Swarovski

SIZE: 81,000 square feet

COST: withheld

COMPLETION DATE: October 2018

SOURCES

LIGHTING: Zumtobel; ERCO; XAL; Corporate Friends; Picolight; iGuzzini; LED Linear

CONTROLS: Siemens

ELEVATOR: Kone

ACOUSTIC WALL PANELS: Kvadrat (showroom)

FURNITURE: CLS Architetti; Gubi; Vitra; Fritz Hansen; HAY; Baxter; Prooff; Muuto; B&B Italia; Molteni

PLUMBING: Laufen; Geberit; Wagner EWAR; Vola; Grohe; Franke; Keuco; Tork; Duravit; Kronenbach; Schmiedl

Euroluca 2019

Milan's biennial lighting fair showcased striking fixtures with surprising arrangements and inspiration from nature.

By Josephine Minutillo



Tubino

Resembling a flashlight, Tubino features a flexible joint to direct light. Designed by Matteo Thun, it is available in several versions, some with dimming options. The white, black, bronze, titanium, and champagne finishes come with either transparent or fabric cables.

panzeri.it



Tube

Japanese designer Ichiro Iwasaki has created a lighting system in which a network of tubes brings light from a specific point and single switch to different shades that can be positioned as required. The aluminum shade comes in several hues of gray and off-white and contains a polycarbonate diffuser. Its four sizes range from 8½" to just under 21".

vibia.com

WireLine

Young Italian design duo Formafantasma continues its innovative design for Flos, first presented at Euroluca 2017. Again using the power cable as a design feature, they this time flatten it to resemble a belt hanging from the ceiling. The LED strip can be installed as a single piece or repeated for a variety of compositions.

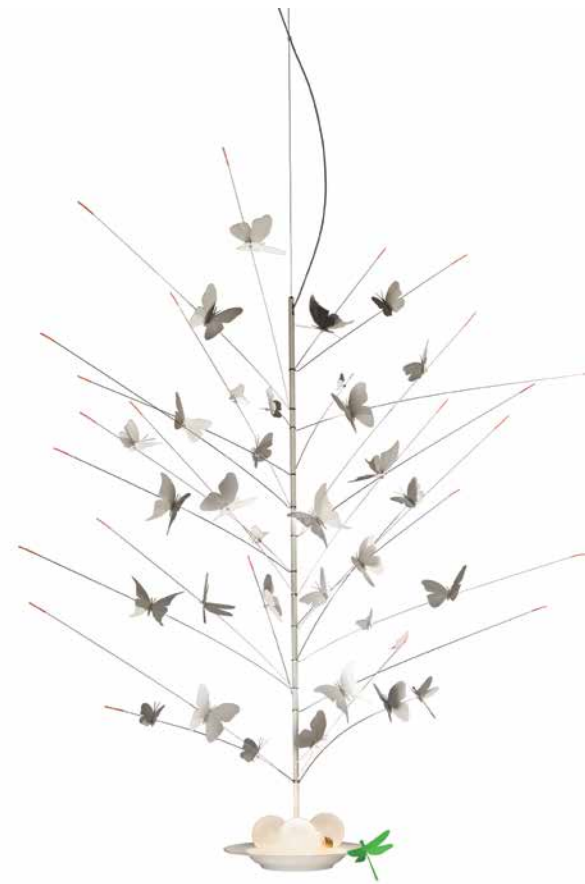
flos.com



NH

Shanghai-based architecture and design office Neri&Hu designed NH as a family of LED floor and suspension fixtures in brass that, like much of the firm's work, combines tradition and innovation by offering a reinterpretation of Eastern culture with a contemporary approach.

artemide.com



La Festa delle Farfalle

The always enchanting German lighting designer Ingo Maurer this year brings us a chandelier whose name translates to "feast of the butterflies"; 34 white butterflies and one green dragonfly made of paper flit about the LED source integrated into the porcelain plate, which provides up- and downlight. A black version is also available.

ingo-maurer.com

Adonis

Even the more traditional Barovier&Toso got in on the trend of incorporating nature into its light fixtures. Graceful butterflies and tulip buds adorn this chandelier by Dutch designer Marcel Wanders that highlights the more than 700-year-old Venetian company's glassmaking mastery.

barovier.com



Viceversa

Noé Duchaufour-Lawrance designed Viceversa as a system where light and nature coexist in perfect harmony. Each module, consisting of the structure containing the LED bulb and the colored glass diffuser/vase, can be combined with others to create different compositions, bringing light into the heart of a vertical garden.

Viceversa is available in three versions: floor, suspension, and floor-ceiling.

kundalini.it



Madre

Designer Andrea Anastasio conceived Madre as a vessel that is a container of life. The 14½"-high dimmable-LED table lamp is made of handcrafted etched blown glass. The upper hollow of the large, luminous body contains a vase in frosted borosilicate glass.

foscarini.com

Asana

A versatile floor lamp for indoor spaces such as lobbies, restaurants, or lounges, Asana can also serve as a small table or lectern. Designed by OIKO Design Office for Spanish brand Estiluz, Asana was inspired by yoga; its arms can be folded and unfolded to achieve, in balance, the best position of light.

estiluz.com



New and Upcoming Exhibitions

Our Happy Life: Architecture and Well-Being in the Age of Emotional Capitalism

Montreal

May 8, 2019–October 8, 2019

Focused on the decade following the 2008 economic crash, *Our Happy Life* investigates today's "cult of happiness" and its many contradictions, questioning how the happiness agenda influences the design of our built environment. See more at cca.qc.ca.

Nature—Cooper Hewitt Design Triennial

New York

May 10, 2019–January 20, 2020

Over 60 projects will be featured in this exhibition demonstrating how designers are collaborating on inventive solutions to the environmental and social challenges confronting humanity today. For more information, visit cooperhewitt.org.

Vienna Biennale for Change: Brave New Virtues

Vienna

May 29, 2019–October 6, 2019

This third Vienna biennale will explore what an economically just, socially fair, and ecologically sustainable future could be. Artists, designers, and architects from all continents will focus on visions for achieving this. Learn more at viennabiennale.org.

Van de Velde, Nietzsche and Modernism Around 1900

Weimar, Germany

June 4, 2019–January 4, 2024

This new, permanent exhibition is centered around Nietzsche as philosopher and cult figure, and features Weimar Art School exponents and work by the architect Henry Van de Velde. Learn more at bauhaus100.com.

Design With Nature Now

Philadelphia

June 21, 2019–September 15, 2019

The legacy of environmental planner and landscape architect Ian L. McHarg is explored by showing the efforts of individuals and collectives to mitigate the effects of climate change

through ecological design. For more information, visit mcharg.upenn.edu.

Ongoing Exhibitions

Patchwork: The Architecture of Jadwiga Grabowska-Hawrylak

New York

Through May 18, 2019

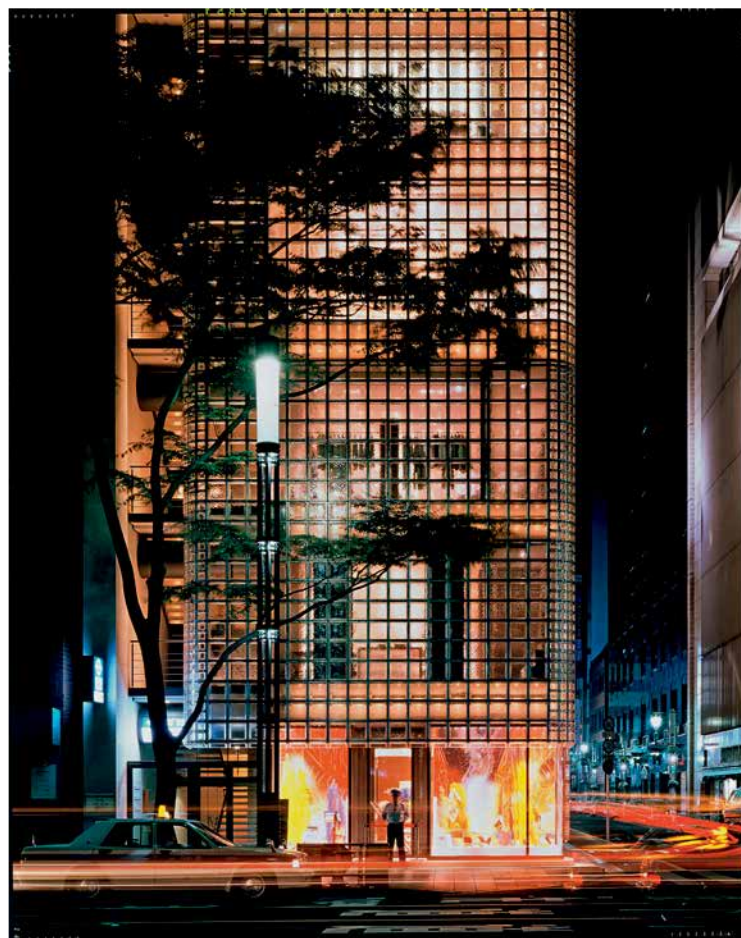
The exhibition presents the work of one of the most important Polish architects of the 20th century. Through models, films, and photographs, visitors can learn about Grabowska-Hawrylak's studies in the 1940s and her involvement in almost all stages of the reconstruction and creation of Wrocław, in what is the first comprehensive presentation outside Poland of her work. At the Center for Architecture. Visit centerforarchitecture.org.

Nari Ward: We the People

New York

Through May 26, 2019

The exhibition features over 30 sculptures, paintings, videos, and large-scale installations made throughout the Jamaican artist's 25-year career. It also highlights the continued impor-



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tance of New York, particularly Harlem, to the material and thematic content of his art. At the New Museum. More at newmuseum.org.

Leonardo Ricci 100: Writing, Painting and Architecture
Florence
Through May 26, 2019
The work of Italian architect Leonardo Ricci (1918–94), author of *Anonymous (20th Century)*, is featured through over 60 original pieces, including paintings, drawings, sketches, photographs, and models as part of a nationwide celebration of his centenary. At the Santa Maria Novella. More at smn.it.

Hugh Kaptur: Organic Desert Architecture
Palm Springs, California
Through June 17, 2019
Exploring the visionary designer’s body of work, this exhibit places him in the context of his Desert Modern peers through archival drawings, models, sketches, slides, period photographs, and ephemera. At the Palm Springs Art Museum. Visit psmuseum.org.

Secret Cities: The Architecture and Planning of the Manhattan Project
Washington, D.C.
Through July 28, 2019
The exhibition delves into the innovative design and construction of three cities born out of the Manhattan Project, tracing their precedents in the Bauhaus and other early-modern schools of architectural thought. The show looks at daily life within those cities and how it was shaped by their physical form. At the National Building Museum. Visit nbm.org.

The Bauhaus and Harvard
Cambridge, Massachusetts
Through July 28, 2019
In conjunction with the 100th anniversary of the founding of the Bauhaus, this exhibition at Harvard presents rarely seen student exercises, iconic design objects, photography, textiles, typography, paintings, and archival materials, including works by 74 artists from the Busch-Reisinger Museum’s Bauhaus collection. Learn more at harvardartmuseums.org.

Kabbalah: The Art of Jewish Mysticism
Amsterdam
Through August 25, 2019
This temporary exhibit showcases the many sides of Kabbalah with displays of ancient texts alongside work by modern and contemporary artists at Amsterdam’s Jewish Cultural Quarter. Visit jck.nl/en for more details on this exhibition.

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Prisoner of Love
Chicago
Through October 27, 2019
The exhibition, which examines human experience by attempting to capture the intensities of love, fear, and grief, features artist Arthur Jafa’s *Love Is the Message, the Message Is Death*, a film that explores the African-American experience in the 20th and 21st centuries. The work is set to the gospel-infused song “Ultralight Beam” by rapper Kanye West. At the Museum of Contemporary Art Chicago. For more, see mcachicago.org.

HOOPS
Washington, D.C.
Through January 5, 2020
This exhibition presents photographer Bill Bamberger’s images of private and community basketball courts around the United States and abroad, taking viewers from the deserts of Arizona and Mexico to the playgrounds of South Africa. At the National Building Museum. Visit nbm.org.

Lectures, Conferences, and Symposia

Architecture, Culture, and Spirituality Forum
Scottsdale, Arizona
May 16–19, 2019
The Forum group will hold its 2019 symposium (ACSF 11), with the

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theme Continuity in/of Architecture, Culture, and Spirituality. See more information at acsforum.org.

Atlanta Design Festival

Atlanta

June 1–9, 2019

The week-plus event will include a series of architecture tours, show-room presentations, talks, and installations around the city, putting its growing design industry in the spotlight. See atlantadesignfestival.net.

AIA Conference on Architecture

Las Vegas

June 6–8, 2019

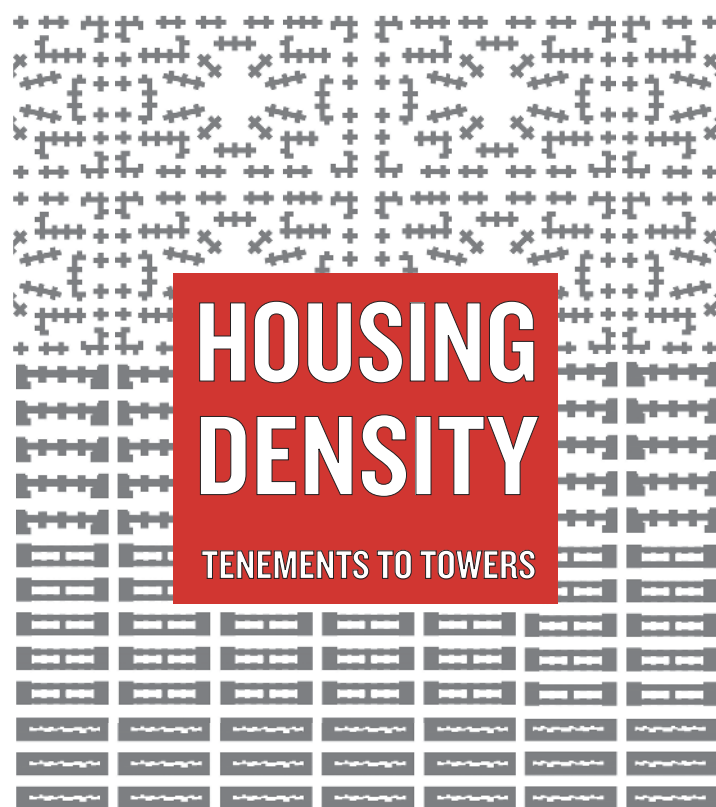
The American Institute of Architects' annual conference event will have the theme Blueprint for a Better Future; at the Las Vegas Convention Center. For more, go to conferenceonarchitecture.com.

Record on the Road Denver

Denver

June 26, 2019

ARCHITECTURAL RECORD will present an evening symposium at the Denver Art Museum moderated by managing editor Beth Broome, followed by a cocktail reception. More at architecturalrecord.com.



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Competitions

2019 Pollinator House Design-Build Competition

Deadline: May 15, 2019

For the 25th anniversary of Garden Walk Buffalo, entrants are asked to deliver a functional, contemporary pollinator house to be auctioned off to support both Gardens Buffalo Niagara and Buffalo Architecture Foundation's programs. This is an open, one-stage, design-build competition. For more information, see buffaloarchitecture.org.

Dedalo Minosse International Prize

Deadline: May 25, 2019

The eleventh edition of this international prize honors the client's role in the design process along with the architect's. Any private or public client, its architects, building firms, the companies supplying the works and materials, or anyone else involved in the building process is entitled to enter the competition. Works must have been completed in the 2018 calendar year. Visit dedalominosse.org/eng for more details.

2019 Record Interiors

Deadline: May 31, 2019

All architects registered in the United States or abroad, as well as interior designers working in collaboration with architects, are welcome to submit interiors-only projects that have been completed in the last year. Special consideration will be given to works that incorporate innovation in design, program, building technology, sustainability, and/or materials. Visit architecturalrecord.com.

Spring Pavilion: Amsterdam

Deadline: May 31, 2019

The objective is to design a multiuse pavilion in Amsterdam's Vondelpark to connect people, nature, and architecture that can become a destination for visitors. All are welcome to submit. Visit switchcompetition.com.

Buildings of Excellence Competition

Deadline: June 4, 2019

New York State governor Andrew Cuomo launched this competition to accelerate the design, development, construction, and operation of very low- or zero carbon-emitting buildings. New York State Energy Research and Development Authority is seeking proposals for projects that reduce energy consumption and per capita carbon emissions. Winners are eligible to receive up to \$1 million in direct funding. Learn more at nyscrda.ny.gov.

The Met's 150th Anniversary Design Competition

Deadline: June 13, 2019

In honor of the New York Metropolitan Museum's 150th anniversary, a cash prize of \$1,000 is being offered for designs for products for the Met Store; realizations of winning entries will be launched in April 2020. Enter a JPG or PNG of an original design in any medium. For more details visit metmuseum.org.

Hyde Park Music Pavilion

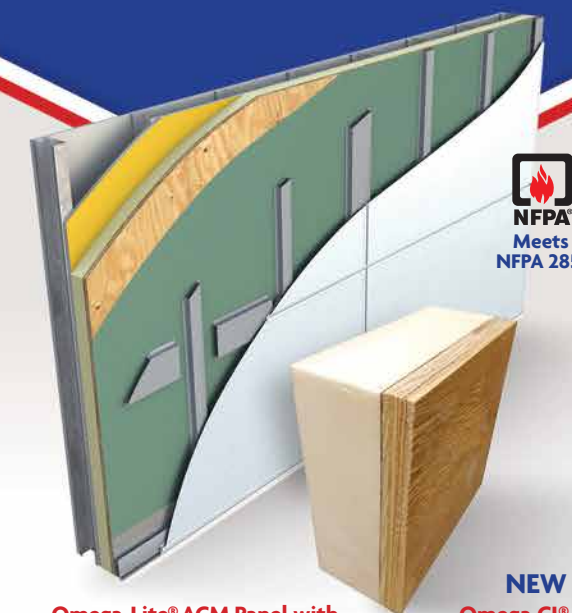
Deadline: June 14, 2019

This competition for students of architecture and young architects requests proposals for a space in Hyde Park to provide information about past and future concerts there as well as host concerts and visitors. See arquideas.net for more submission details and guidelines.

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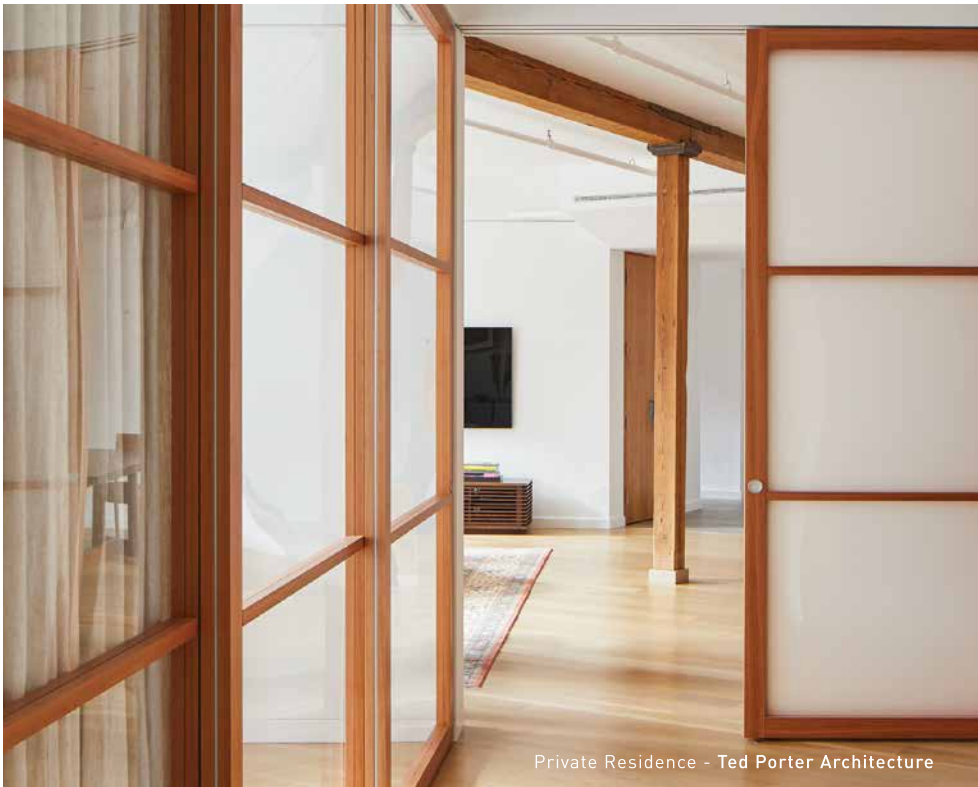
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Robert Wood Johnson Foundation Challenge

Deadline: August 31, 2019

The theme of this design challenge is Building Health into Everyday Life. Imagine how, in the near future, technology might be used to enhance health as part of our daily routines. Entries should include ideas that will be feasible in five to 10 years and will change the built environment to a healthier default. There will be two categories of winner designs: one targeting specific healthy behaviors and one that envisions broad, systemic change. For more, visit centerhxd.com.

2019 Cocktail Napkin Sketch Contest

Deadline: September 6, 2019

Licensed architects or related professionals who practice in the United States are eligible to enter this annual architectural-drawing competition, for which two Grand Prize-winners will be chosen. The winning sketches and runners-up will be published in the November 2019 issue of ARCHITECTURAL RECORD and online. For more information, see architecturalrecord.com.

E-mail information two months in advance to areditor@bnpmedia.com.



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PROJECT SARBALÉ KE AT COACHELLA
LOCATION INDIO, CALIFORNIA
ARCHITECT FRANCIS KÉRÉ

OVER TWO WEEKENDS last month, thousands flocked to the Southern California city of Indio for Coachella's 20th year. Since its inception, the festival has morphed from a modest music and arts gathering into a multimedia bonanza, with a visual identity best described as a glamorous take on Woodstock-bohemian. For this year's lineup of monumental artworks there, architect Francis Kéré designed a cluster of 12 kaleidoscopic towers inspired by the baobab tree, a symbol of community in his native Burkina Faso. Called Sarbalé ke—"house of celebration" in the Mooré language—the installation offered visitors respite from the hot sun; at night, the steel structures, clad with triangular wooden panels, cycled through a glimmering sequence of neon LEDs. "In my culture, where there is no electricity, if we see a light, we watch it for a while," said Kéré. "If it stays lit, we walk toward it, and there will be a celebration." *Alex Klimoski*

