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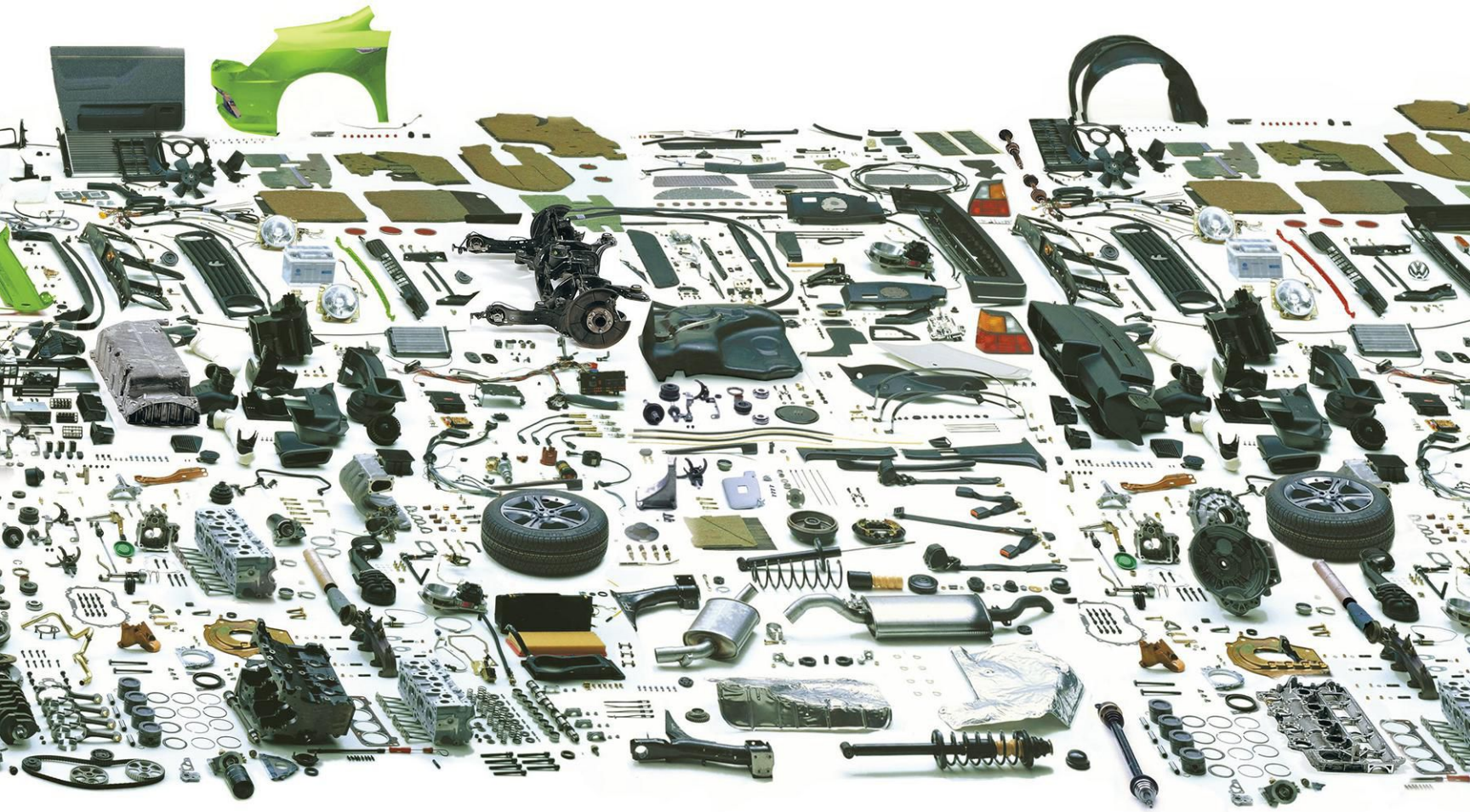
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Shaking Bad

In New York, passing subways can shake entire buildings, but that wasn't an option for Columbia University's new **Jerome L. Greene Science Center**. Home to sensitive laboratory and imaging equipment requiring exceptional stability, the design by **Renzo Piano Building Workshop** relies on a steel structure to reduce floor vibrations to a miniscule 2,000 mips. Even as the elevated No. 1 train roars past, this helps ensure that nothing distracts from the scientific advances being made within the center's unshakable walls. Read more about it in **Metals in Construction** online.

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Page Turner

Queens' new **Elmhurst Community Library** serves one of the most diverse and vibrant communities in New York. Designed by **Marpillero Pollak Architects**, the LEED Silver-rated facility features two structural glass-encased reading rooms that allow light to flood in during the day and offer glimpses of the state-of-the-art library setting at night. Erected by **W&W Glass**, its glazed features have become beacons for the community, drawing its knowledge-hungry members to the wealth of information within. Read more about it in **Metals in Construction** online.

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NEWS

- 25 BALKRISHNA DOSHI WINS PRITZKER PRIZE
By Miriam Sitz
- 28 U.S. PAVILION'S SEVEN SCALES OF CITIZENSHIP
AT VENICE BIENNALE By Miriam Sitz
- 30 CHANGE AHEAD FOR GRAVES'S PORTLAND
BUILDING By Justin Chan
- 32 NEWSMAKER: EVA FRANCHI GILBERT
By Fred A. Bernstein

DEPARTMENTS

- 21 EDITOR'S LETTER: THE SUITE SPOT
- 37 HOUSE OF THE MONTH: MONTAUK HOUSE BY
ROBERT YOUNG ARCHITECTS
By Josephine Minuttillo
- 42 INTERIORS: DOLCE&GABBANA'S LONDON
FLAGSHIP BY TOKYO-BASED CURIOSITY
By Chris Foges
- 49 LANDSCAPE: ASKIM MEMORIAL GROVE BY SWECO
ARCHITECTS By Erin Hudson
- 53 GUESS THE ARCHITECT
- 56 EXHIBITION: *IMAGE BUILDING: HOW
PHOTOGRAPHY TRANSFORMS ARCHITECTURE*
By Cathleen McGuigan
- 61 BOOKS: DAVID BENJAMIN'S *EMBODIED ENERGY
AND DESIGN* AND KIEL MOE'S *EMPIRE, STATE &
BUILDING* Reviewed by Alex Klimoski

- 63 BOOKS: *BEAUTY'S RIGOR: PATTERNS OF
PRODUCTION IN THE WORK OF PIER LUIGI NERI*
Reviewed by Josephine Minuttillo
- 64 FIRST LOOK: A THEATER BY SMILJAN RADIC IN
CONCEPCIÓN, CHILE By Fred A. Bernstein
- 69 PRODUCTS: CONTRACT FURNISHINGS
By Kelly Beamon
- 72 PRODUCTS: FINISHES By Kelly Beamon

PROJECTS

- 74 GASHOLDERS LONDON, ENGLAND WILKINSONEYRE
By Hugh Pearman
- 80 ANASTASIS CHURCH IN SAINT-JACQUES-DE-LA-
LANDE, FRANCE ÁLVARO SIZA By Ana Martins

BUILDING TYPE STUDY 993 HOSPITALITY

- 87 INTRODUCTION
- 88 THE DEWBERRY CHARLESTON, SOUTH CAROLINA
STUDIODEWBERRY/REGGIE GIBSON ARCHITECTS
By Beth Broome
- 94 NOBIS HOTEL, COPENHAGEN WINGÅRDHS
By Josephine Minuttillo
- 100 ACE HOTEL, CHICAGO GREC ARCHITECTS AND
COMMUNE DESIGN By James Gauer
- 106 EMILIANO, RIO DE JANEIRO STUDIO ARTHUR
CASAS AND OPPENHEIM ARCHITECTURE
By Tom Hennigan

- 112 CASA FANTINI, ITALY LISSONI ARCHITETTURA
By Suzanne Stephens
- 118 THE MURRAY, HONG KONG FOSTER + PARTNERS
By Aric Chen

TECHNOLOGY

- 125 FIRE SAFTY ARCHITECTS RETHINK RESIDENTIAL
DESIGN AFTER LAST YEAR'S WILDFIRES IN CALIFORNIA
 By Joann Gonchar, FAIA

- 166 DATES & EVENTS
- 168 CALL FOR ENTRIES
- 172 SNAPSHOT: THE CORAL ROOM IN LONDON BY
MARTIN BRUDNIZKI DESIGN STUDIO
By Josephine Minuttillo

THIS PAGE: DOLCE&GABBANA FLAGSHIP, LONDON, BY TOKYO-BASED CURIOSITY. PHOTO BY ALESSANDRA CHEMOLLO.

COVER: EMILIANO, RIO DE JANEIRO, BY STUDIO ARTHUR CASAS AND OPPENHEIM ARCHITECTURE. PHOTO BY FERNANDO GUERRA.

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



LAFAYETTE ANTICIPATIONS

A discreet new arts center designed by OMA for the Fondation d'Entreprise Galeries Lafayette has opened in a former warehouse in the historic Marais district of Paris. [NEWS]

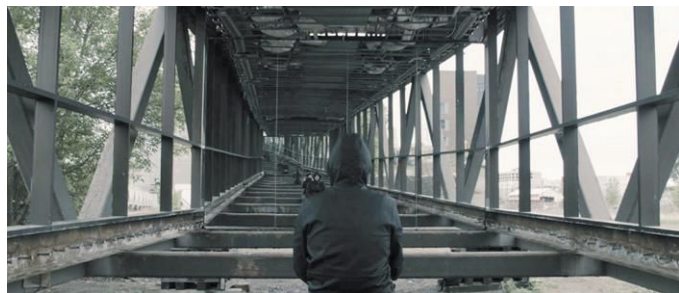


EXHIBITION

A new show at the Smithsonian American Art Museum presents the immersive, ethereal work of Korean artist Do Ho Suh, who creates hand-sewn fabric replicas of places he has lived, tracing his evolving idea of home. [NEWS]

VIDEO

Hide & Seek, by Jennifer Newsom and Tom Carruthers with Clayton Binkley of Arup, is the 2018 winner of MoMA PS1's Young Architects Program. Watch a short film on our website. [NEWS]



RECORD ON THE ROAD

At a Record symposium in San Francisco, Fred W. Clarke, senior principal of Pelli Clarke Pelli Architects, and Adam Greenspan, design partner at PWP Landscape Architecture, discussed the new Salesforce Transit Center and its rooftop park. [EVENTS]



SIZA THE DAY

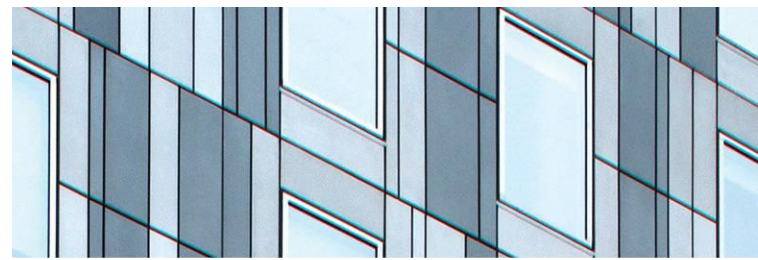
Architect Álvaro Siza, pictured here, attended the opening of Anastasis Church, his new project in northwestern France, on February 11. [PROJECTS]

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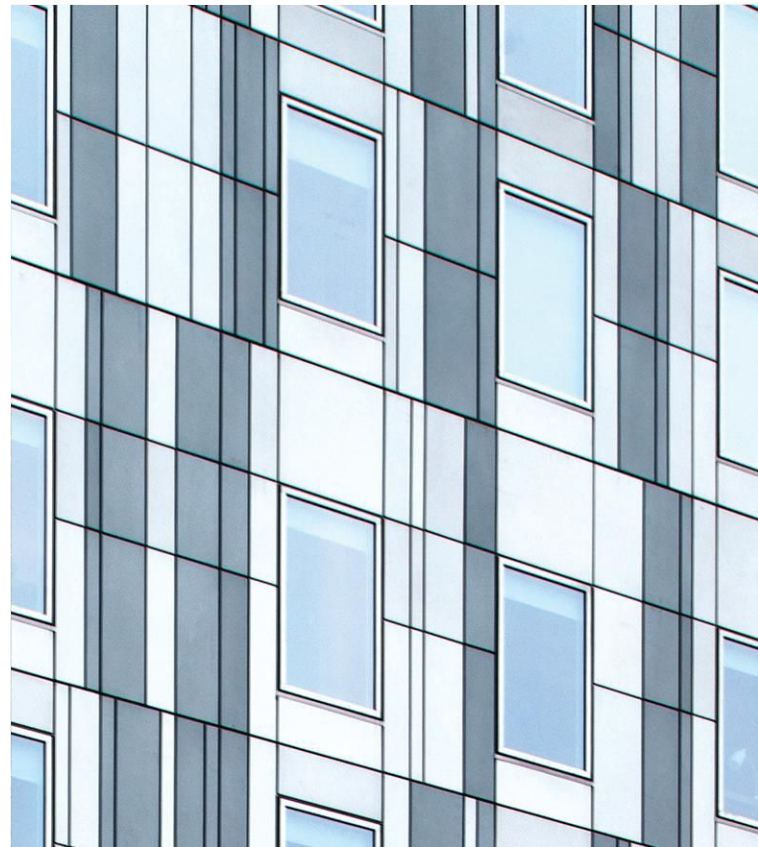
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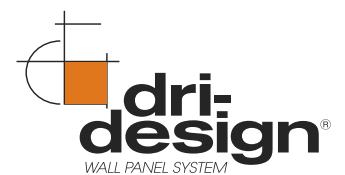
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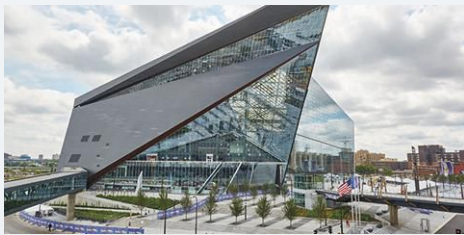
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Page 135

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Page 160

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Specifying Extruded Aluminum Trim for Drywall Surfaces in Multifamily Residential Projects

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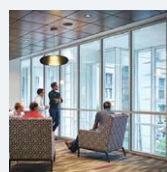
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Style Meets Function and Affordability: Design Strategies for Multifamily Housing Projects

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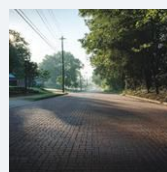
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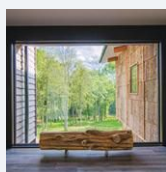
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The Suite Spot

While conformity used to guide hospitality design, now original expression and a strong sense of place inspire hotel architecture.

ANYONE WHO TRAVELS has seen how dramatically the design of new hotels has changed. And if you've worked on hotel design yourself, you know firsthand that distinctiveness is now the mantra in this thriving building type, for which the number of new hotel projects was up 8 percent last year.

Even the big chains have introduced unique designer hotels to their portfolios, such as Amsterdam's Andaz (a Hyatt brand) by Marcel Wanders, or the JW Marriott Venice Resort & Spa by Matteo Thun & Partners (RECORD, June 2016). While such behemoths dominate the business, beautifully designed hotels from smaller companies with their own character and connection to place—not unlike the locavore food movement—are appealing to more travelers, including Millennials. As one trade publication has reported, “Uniformity no longer sells.”

At RECORD, we've regularly covered the best in hospitality design, and, for this issue, we sent design writers to visit a half-dozen unique new hotels, in places ranging from Rio de Janeiro to Hong Kong, where they explored the architecture of guest rooms, bars, dining rooms, lounges, and spas. They also reported on how these one-of-a-kind buildings fit into the surrounding cityscape or countryside. One way such establishments are woven into the local fabric reflects another trend: increasingly, hoteliers are looking to transform older structures that had a prior, different use.

Two hotels in the pages ahead were originally government office buildings from the 1960s. The Dewberry Charleston in South Carolina was a seven-story Modernist structure for Federal agencies. When it was abandoned, a developer bought it from the GSA, and local architect Reggie Gibson, in partnership with the developer's in-house design team, adapted it to new life, with interiors by Brooklyn-based Workstead Studio, the firm behind that borough's uber-chic Wythe Hotel. In Hong Kong, Foster + Partners has converted the 27-story Murray Building, once home to the city's Public Works Department, into a luxury hotel in the center of town. In doing so, the architects had to rethink a complicated sequence of entrances, ramps, and car access on the steeply sloped site. The architects of both hotels added rooftop social spaces with stunning views.

Whether old structures or new, the best small hotels seek to find the genius loci. While the first Ace Hotel to open in Chicago is almost all new construction, it's designed to fit snugly into the gritty historic fabric of the rapidly gentrifying Fulton Market neighborhood. For its first hospitality project in Copenhagen, Nobis Hospitality Group chose an early 20th-century Neoclassical company headquarters, with superb assets—large windows, a majestic central stair, and lots of marble—to convert into an elegant city retreat. In a rustic village in Northern Italy, architect Piero Lissoni added a wing to a 200-year-old house to create a small gem (just 11 rooms) that is all about privacy, quiet gardens, light, and extraordinary vistas of Lake Orta. The complete opposite of that secluded and romantic getaway is the jazzy Emiliano in Rio—the ground-up 90-room hotel by Studio Arthur Casas and Oppenheim



Architecture—overlooking Copacabana beach and the richly patterned Promenade designed by Roberto Burle Marx. Here is a sense of pure fun, with the building's facade covered in white perforated panels that can fold open to reveal guest room balconies, while a rooftop pool with a glazed exterior wall makes swimmers part of the amazing cityscape.

What's striking these days is that hotel guests don't seem to mind bedrooms that are simple and often small—though with luxurious touches—while they increasingly want well-designed and richly varied public spaces to meet, mingle, and relax. Midcentury Modern furniture is in danger of becoming a cliché in such interiors, but the overall aesthetic, with woods and soft furnishings, creates an ambience that is less corporate and more cozy; less disco and more domestic (three of these hotels call their lounges the “living room”).

While many travelers will still seek the familiar comfort of conformity, more architects are designing for the growing cohort who prefer a hotel like nowhere else, that beautifully responds to the local culture and setting, while catering, of course, to every little desire. Smart, imaginative design is essential to creating those ultimate get-away places.

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

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We hope that the word Freespace allows us to burrow into the aspirations, ambitions, and generosity of architecture.

—Grafton Architects cofounder **Yvonne Farrell**, speaking at a press conference in New York on March 12 about the theme that she and partner Shelley McNamara selected for the 16th Venice Architecture Biennale.

Balkrishna Doshi Wins Pritzker Prize

BY MIRIAM SITZ

BALKRISHNA DOSHI was sitting in his garden in Ahmedabad—the largest city in the Indian state of Gujarat—chatting with his wife and a friend when he received a phone call from Martha Thorne, executive director of the Pritzker Architecture Prize. She asked him if he was still able to travel. “When you get old, people wonder about what you can do and what you cannot do,” explained the 90-year-old architect. “I told her, yes, I’m still traveling, and then she mentioned to me this award.” Doshi is the 45th winner of the profession’s highest international honor, and the first from India. “I was very thrilled and extremely surprised,” he told RECORD by phone.

An architect, urban planner, and educator for some 70 years, Doshi was born in 1927, in Pune, India. His extended family has been connected to the furniture industry for two generations; from a young age, Doshi proved adept at art and spatial reasoning. His academic career in architecture began in 1947—the year India gained its independence—at the prestigious Sir J.J. College of Architecture in what was then called Bombay (now Mumbai). As a young man, he traveled to study in London, then went to Paris, where, though he didn’t speak French, he apprenticed under his “guru,” Le Corbusier. Returning to India in 1954, he oversaw work on the great architect’s buildings in Chandigarh and Ahmedabad. Doshi married Kamala Parikh in 1955 and founded his own practice, Vastushilpa, in 1956; he then received a Graham Foundation fellowship in 1958 and traveled to the U.S., where he met Louis Kahn in Philadelphia. They became friends, and Doshi began working with Kahn in 1962 on the Indian Institute of Management in Ahmedabad.

Doshi’s collaborations with Le Corbusier and Kahn, masters of Modernism, continued for years. He transplanted Modernist ideas to India, expertly merging them with the context and customs of his home country, the setting for his entire body of work. “I am a part of this culture, and architecture is a holistic profes-

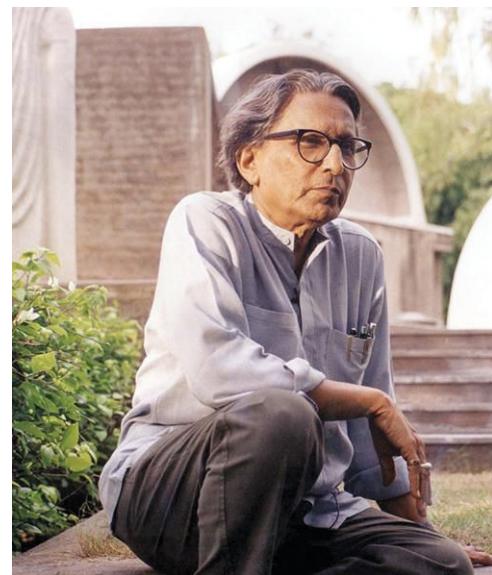


Over the course of almost half a century, Doshi (right) designed the CEPT campus and buildings (above) with an eye toward creating shaded, breezy spaces for interaction.

sion,” he said. “As an architect, if I’m not able to do something for the people, to provide them with what they need, then I think I’m leaving something undone.”

Doshi’s work in low- and middle-income housing demonstrates his dedication to this belief. His designs for projects such as the ATIRA Low-Cost Housing in Ahmedabad (1958), the Vidhyadhar Nagar master plan outside of Jaipur (1984), and the Aranya Low-Cost Housing in Indore (1989) take into account factors like the angle of the sun, the direction of the prevailing winds, and the patterns and order of existing settlements when orienting streets and demarcating plots. As the Pritzker jury citation put it, “The entire planning of the community, the scale, the creation of public, semi-public, and private spaces are a testament to his understanding of how cities work and the importance of the urban design.”

A teacher as much as a practitioner, Doshi’s first experience with the American educational system came during his years as a Graham fellow (1958–59), when he lectured at Washing-



ton University in St. Louis. (He also later taught at the University of Pennsylvania.) “What I learned was that we need to be rooted, but also open-minded; we must be global and local in order to understand how our culture has been sustained over centuries,” he said. “It made me



Terraces, reflecting ponds, and an amphitheater surround Sangath, Doshi's Ahmedabad studio (above), which is known for its distinctive curved vaults of concrete.

want to take a fresh look at architecture in India, and the only way to do that was to start a new school for new thought.”

He founded the School of Architecture in Ahmedabad in 1962 and served as its first director. The institution and its campus, both shaped by Doshi, continued to expand, ultimately becoming the Centre for Environmental Planning and Technology or CEPT University, as it's called today. (RMA Architects' Lilavati Lalbhai Library [RECORD, February 2018]—the school's first building not designed by the newest Pritzker laureate—opened in October 2017; because of Doshi's legacy, CEPT alum and RMA founder Rahul Mehrotra called the commission “intimidating, to say the least.”)

While the breadth of Doshi's work spans civic buildings, educational and cultural institutions, and private residences, all of his projects reflect a profound understanding of their context, a thoughtful response to the human condition, and an innate commitment to sustainability. His Ahmedabad studio complex exemplifies these characteristics; it is called Sangath, which in Sanskrit means to “move together.” Communal areas like a garden and outdoor amphitheater point to the

architect's commitment to collaboration and interaction, while vaulted roofs, sunken spaces, and grassy landscaping allay the extreme heat and defer to the site's natural characteristics. As the Pritzker jury citation noted, “Doshi has created an equilibrium and peace among all the components—material and immaterial—which result in a whole that is much more than the sum of the parts.”

Other notable works include cultural spaces such as Tagore Memorial Hall (Ahmedabad, 1967), the Institute of Indology (Ahmedabad, 1962), and Premabhai Hall (Ahmedabad, 1976); as well as Life Insurance Corporation Housing or “Bima Nagar” (Ahmedabad, 1973) and the private residence Kamala House (Ahmedabad, 1963), among many others. Doshi is still active in his 60-person firm, which boasts five partners and is now called Vastushilpa Consultants. Of their diverse projects, said Doshi, “I work on the buildings I enjoy.”

The newest Pritzker winner is no stranger to the prize: he served as a juror from 2005 to 2007, when Thom Mayne, Paulo Mendes da Rocha, and Richard Rogers received the honor.

Having been both a juror and now a laureate, he told RECORD, “I think it's better to be on this side, no?” ■

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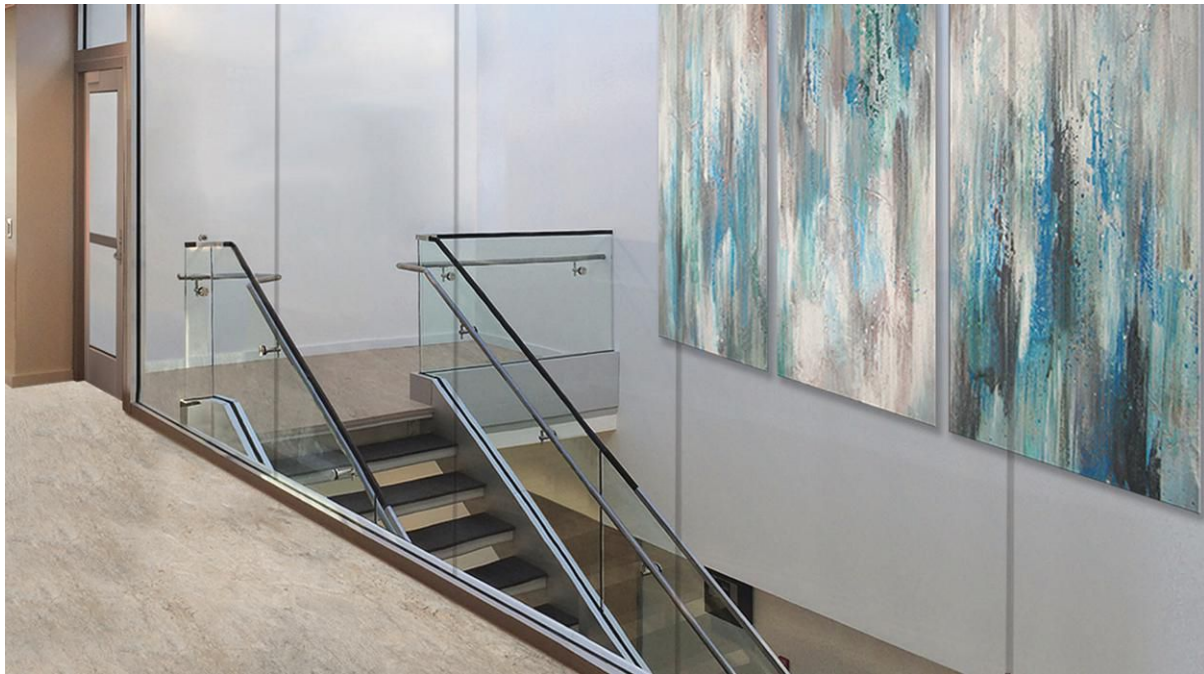


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U.S. Pavilion's Seven Scales of Citizenship at Venice Biennale

BY MIRIAM SITZ

OPENING MAY 26, the U.S. Pavilion at the 16th Venice Architecture Biennale will present a group of installations that look at different facets of the theme “Dimensions of Citizenship.” The curators (University of Chicago associate professor Niall Atkinson; School of the Art Institute of Chicago [SAIC] assistant professor Ann Lui, who cofounded Future Firm in Chicago; Los Angeles–based architecture critic Mimi Zeiger; and associate curator Iker Gil, director of MAS Studio and SAIC faculty member) have commissioned seven teams of architects, artists, and landscape architects to explore how citizenship is represented at different scales, grappling with questions of belonging, sovereignty, and ecology. The Pavilion will also present five film and video works.

“Here in the States and abroad, headlines routinely ask us to consider who has access to the full rights of citizenship and who doesn’t,” said Zeiger at a press conference in New York in mid-March, noting that these issues are “acted out” in public spaces like streets, airports, and border areas. “Architecture can’t evade these thorny questions of inclusion and exclusion.”

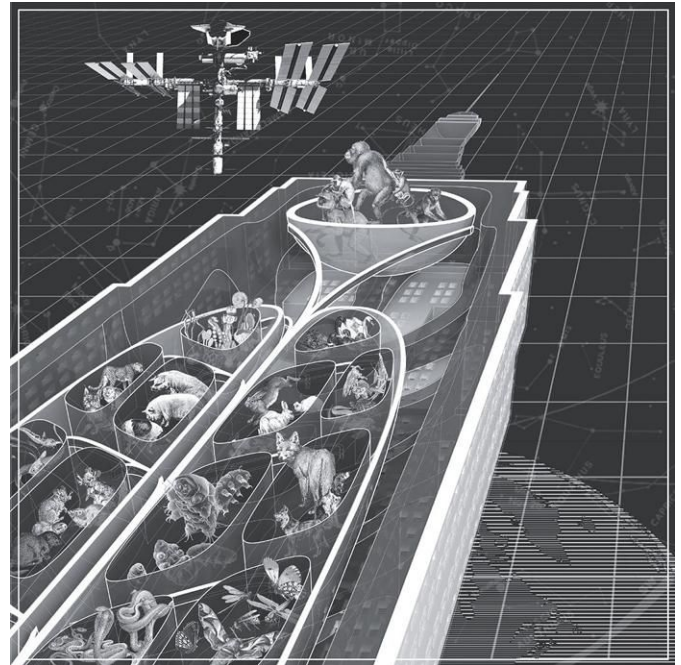
Design Earth considers citizenship at the cosmic scale with *Planetary Ark [1/3]* (All Aboard) the *Architekton* (2018) (right), while *Thrival Geographies (In My Mind I See a Line)* (opposite) by Amanda Williams, Andres L. Hernandez, and Shani Crowe investigates issues at the scale of the individual.

A team of artists, Amanda Williams and Andres L. Hernandez of Chicago, will consider the idea of belonging at the scale of the citizen. They have partnered with fellow Chicago artist Shani Crowe, known for her creations of braided hair, on *Thrival Geographies (In My Mind I See a Line)*. Planned for the Pavilion courtyard, their installation of steel and hand-braided cord will “challenge viewers to recognize that black women’s space matters,” said Lui.

Charged with the scale of “civitas” (community or state), Studio Gang will transport hundreds of cobblestones from Memphis,

Tennessee, to Venice for *Stone Stories*—a project focusing on how the design of urban public spaces intersects with citizenship and empowerment. The Chicago firm, which has been working in Memphis, was inspired, in part, by the efforts of local residents to remove two Confederate statues from public spaces.

New York–based landscape architecture



Yesomi Umolu to Direct 2019 Chicago Architecture Biennial

ORGANIZERS OF the Chicago Architecture Biennial (CAB) selected Yesomi Umolu as artistic director of the exposition’s 2019 edition. Umolu, who is the exhibitions curator at the Reva and David Logan Center for the Arts at the University of Chicago, has a background in architectural design and curatorial studies; her recent exhibitions, such as *The Land Grant: Forest Law* at the Eli and Edythe Broad Art Museum at Michigan State University, have explored the politics of the built environment. She also serves on the curatorial advisory board for the U.S. Pavilion at the 16th Venice Architecture Biennale.

Umolu tells RECORD she plans to assemble a curatorial team over the coming months, then delve into research by the summer. “My aim is to have a team that constitutes different experts, including folks more embedded in the practice of architecture than I am currently, who can speak to the urgencies of the discipline.” She adds that she plans to generate “a cohesive vision for the Biennial, not just a curatorial



agenda interpreted three or four different ways.” She hopes to begin approaching artists and architects by the fall.

The new artistic director also expects the Biennial to embrace globalization. “To bring the world to Chicago is a good thing,” says Umolu, “but for Chicago to learn that there are fantastic things happening around the world, and to foster reciprocal exchange, that’s also super-important to me.”

This is the first time that the Biennial will be directed by just one individual. In 2015, Graham Foundation director Sarah Herda and former Storefront for Art and Architecture director Joseph Grima led the inaugural edition of the exposition under the theme “The State of the Art of Architecture,” while archi-

tects Sharon Johnston and Mark Lee of Johnston Marklee directed the 2017 iteration, titled “Make New History.”

The next Biennial will be open to the public from September 19, 2019, through January 5, 2020. *Alex Klimoski and Miriam Sitz*

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studio SCAPE, founded by 2017 MacArthur Fellow Kate Orff, will address citizenship at a regional scale, taking the rapid wetland loss of the Venetian Lagoon as a case study of the shifting relationships between ecology, infrastructure, and climate. The project, titled *Ecological Citizens*, will also present solutions and design interventions for protecting environmentally fragile areas.

Zooming out further still, Estudio Teddy Cruz + Fonna Forman will challenge the idea that the border of a nation demands a wall. Their project *MEXUS: A Geography of Interdependence* will use a large map of watershed systems along the boundary of the U.S. and Mexico to underscore the inextricably linked social and ecological conditions of the border region.

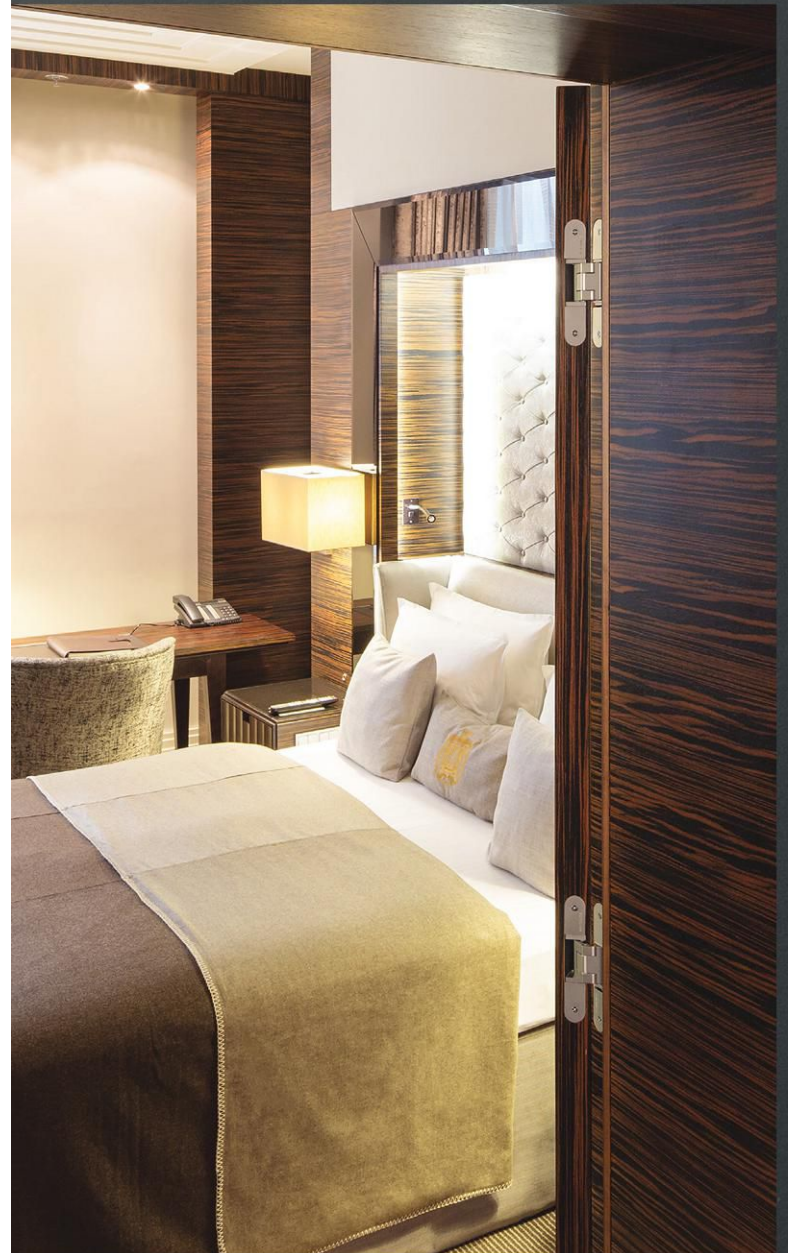
Diller Scofidio + Renfro, Laura Kurgan, and Robert Gerard Pietrusko are collaborating with the Columbia University Center for Spatial Research on *In Plain Sight*. The project will use satellite images and data to visualize where people live around the world, juxtaposing day and night conditions, in order to consider citizenship at the global scale.

A team led by Keller Easterling—an architect, writer, and Yale University professor—will use the scale of the digital network, which transcends national borders, to rethink potentially outdated notions of citizenship. They are developing an online platform called *MANY* that aims to facilitate the migration of people fleeing economic, political, or environmental crises by matching their skills and talents with opportunities around the world.

Finally, architects El Hadi Jazairy and Rania Ghosn of Design Earth will present a triptych of conceptual drawings for *Cosmorama*, a project that imagines the off-world architecture that might arise as interest in privatized space travel increases and human and ecological systems on earth destabilize.

The University of Chicago and SAIC are institutional co-commissioners of the U.S. pavilion. Architects Yvonne Farrell and Shelley McNamara, cofounders of Grafton Architects of Dublin, are curating the overall Biennale around the theme “Freespace,” which, Zeiger noted, shares with the U.S. Pavilion “important interests in architecture as a potential site for openness and as an agent of civic activity.”

The Venice Architecture Biennale and U.S. Pavilion exhibition will run through November 25, 2018. ■



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Change Ahead for Graves's Portland Building

BY JUSTIN CHAN

CREWS HAVE begun to dismantle the facade of the Portland Building, the Postmodern structure by Michael Graves in the Oregon city's downtown. Architecture and engineering firm DLR Group is leading the building's rehabilitation, replacing teal-colored tiles on the lower exterior with terra-cotta rainscreen tiles, and covering the painted concrete facade with an aluminum curtain wall. The firm also plans to replace the dark-tinted windows with clear glazing. "There was no way to restore the existing design as it was because it was flawed in its detailing," says Carla Weinheimer, who is leading the project for DLR Group.

"What got built wasn't the original design intent," says Patrick Burke, a principal at Michael Graves Architecture & Design who consulted on DLR Group's project. "It was a cheap version." In addition to redoing the exterior, DLR Group will also seismically retrofit the building and upgrade plumbing and electrical systems.

Despite assurances that the new facade will closely resemble the original, preservationists

still insist that the building's exterior should remain untouched, proposing that the facade be patched as necessary—a solution Weinheimer says isn't cost-effective.

The 15-story structure, which housed municipal offices, received significant attention upon its completion in 1982. Considered a major work of Postmodern architecture, the American Institute of Architects gave it an honor award in 1983. In 2011, it was listed on the National Register of Historic Places as a structure of "exceptional importance." Yet the building is not universally admired; in January of this year, a Business Insider survey of Oregonians deemed Graves's work the state's ugliest building.

Appearance aside, the Portland Building's original construction budget resulted in a number of structural and operational problems that led the city in recent years to discuss tearing it down. When questioned about that possibility at a 2014 panel, Graves, who died in 2015, fiercely opposed a complete demolition and instead blamed the city for not maintain-



The Portland Building has experienced extensive leaks since its completion, so DLR Group's restoration plan includes measures to better weatherproof the structure.

ing it properly. "The whole idea of tearing the building down, it's like killing the child," the architect said.

The city anticipates the \$195 million project to be completed by the fall of 2020. ■

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[NEWSMAKER]

Eva Franch i Gilabert

BY FRED A. BERNSTEIN

EVA FRANCH I GILABERT, the executive director and chief curator of New York's Storefront for Art and Architecture since 2010, has been elected director of London's Architectural Association School (AA). The AA, whose alumni include Rem Koolhaas, Richard Rogers, and Zaha Hadid, and which calls itself a "participatory democracy," put the choice of director up to a vote of more than 1,000 students and employees. Franch received 67 percent of the votes cast, far more than the other finalists, Pippo Ciorra, senior curator of MAXXI Architettura in Rome, and Robert Mull, head of architecture and design at the University of Brighton. Franch, who is still negotiating the terms of her employment contract, will replace Samantha Hardingham, who has served as interim director since Brett Steele, a Texan, left last year to become a dean at UCLA. She is the first woman to be elected director of the AA.



In a presentation prior to the vote, Franch said, "The AA possesses an unparalleled combination of rigor and madness, one that should be nourished and cultivated." She later told RECORD that she felt obligated to more than just the AA's 750 students: "We are going to be doing great things, and I want to make sure we share them with the global community."

First she will have to manage the AA's budget shortfalls. Last year, the organization announced that it might cut costs by shuttering its publications and exhibitions units, prompting expressions of concern from curators and educators. Nader Tehrani, dean of the architecture school at Cooper Union (where Franch is a professor) described her as "maybe the only person I can think of who can address the realities of the Architectural Association's financial challenges with a bold and frontal stance, using it as an opportunity for the setting of new pedagogical and intellectual priorities."

At Storefront, Franch mounted a dizzying array of exhibitions and symposia, as well as events that resisted categorization. Other institutions run architecture competitions; Franch created the "Competition of Competitions." For the gallery's 30th anniversary, Franch installed a circular waterbed where, she said, "visitors were invited to dream surrounded by all the failed applications, rejection letters, and other unfulfilled institutional" ambitions. A native of Catalonia, she often cooked paella for Storefront gatherings. "We had some really good parties, and that's important in bringing the community together," Franch told RECORD. She added that each of the parties she threw made a serious point and that she will continue, at the AA, to

use "the fundraiser as a space for critical thought."

As cocurator of the U.S. Pavilion at the 2014 Venice Architecture Biennale, Franch helped document the work done overseas by American architecture firms during the last 100 years. The pavilion portrayed architecture as one of 20th-century America's main exports, and not an entirely benign one.

Franch grew up on a dirt road in Deltebre, a city 100 miles southwest of Barcelona, surrounded by rice fields, and spent

much of her time in her mother's hair salon. She left to study architecture in Barcelona and Delft, practiced briefly, and then moved to the U.S., with stops at Princeton, the State University of New York at Buffalo, and Rice University. Charles Renfro, the Manhattan architect, told RECORD he began noticing her at architecture school critiques, where he pegged her as "someone we would all be listening to in the future." Later, as president of Storefront's board of directors, Renfro traveled extensively with Franch and discovered her to be "a force of nature. I have no image of her sleeping."

In a "vision statement" presented to the AA, Franch listed reasons to believe that architecture is in crisis: "That we are the last ones at the decision-making tables. That we are the last ones to inspire and to move people. That we are the last ones to engage with the most pressing issues affecting the planet today." She concluded: "Yet it is in moments of crisis that opportunities for redefinition emerge." ■

Frank Gehry Tapped for Colburn School Expansion in Downtown L.A.

The Colburn School, a performance-arts institution just blocks from the Walt Disney Concert Hall in Los Angeles, has tapped Frank Gehry to design an expansion of its campus, adding 200,000 square feet of space to the existing facilities. Plans for the project include a 1,100-seat concert hall, three other performance or rehearsal venues, classrooms, and student housing.

Construction Begins on Seattle Asian Art Museum

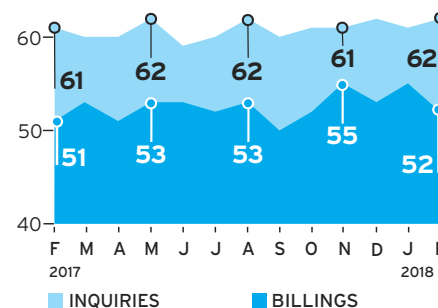
Seattle-based firm LMN Architects is leading a \$54 million renovation and expansion of Bebb and Gould's Seattle Asian Art Museum, to preserve the 1933 building's Art Deco facade and add new exhibition space.

Christopher Hawthorne to Become L.A.'s Chief Design Officer

Architecture critic Christopher Hawthorne will leave the *Los Angeles Times* after almost 15 years to become the chief design officer for the City of Los Angeles. In this newly created role, he will work to raise the quality of public architecture and urban design across the city.

Adjaye's Design for New National Cathedral of Ghana Unveiled

Adjaye Associates' design for the new National Cathedral of Ghana, planned for the capital city of Accra, has been revealed. The multifaith center will accommodate a variety of religious, cultural, and governmental programs. See images at ArchitecturalRecord.com/news.

**Billings Remain Strong in 2018**

The American Institute of Architects (AIA) reports a February Architectural Billings Index of 52, down 2.7 points from the previous month but still showing healthy growth. (Scores above 50 indicate an increase in billings.) AIA chief economist Kermit Baker called the particularly strong billings of firms in the West and Midwest "major bright spots" in the data. Both the project inquiries and design contracts indices rose, to 62.4 and 54.5 respectively.



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Left, Located on Barrington Avenue, in West Los Angeles, Shubin + Donaldson Architects, Inc. used Fortina as a visual element to revitalize the façade and create a fresh architectural identity to this existing brick warehouse. Fortina Louvers in Aging Metal finish.

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SIMPLE VOLUMES COMBINE TO CREATE A DRAMATIC WATERFRONT COMPOUND ON LONG ISLAND. BY JOSEPHINE MINUTILLO



DRIVE DOWN most roads in Montauk—the coastal hamlet at the eastern tip of Long Island—and you’ll find simple fishermen’s cabins alternating with elaborate constructions that serve as second homes for New York’s upper crust. A new house by Robert Young Architects is located on one such road, but its design deftly straddles a delicate balance between achieving a discreet presence and an undeniable grandeur.

Young, who has offices in New York and in Bridgehampton, also on Long Island’s East End, helped find the two-acre property along Lake Montauk, whose calm waters are a far cry from the mighty ocean waves for which surfers flock to Montauk. The site was previously home to a small, poorly built split-level, and sits beside a modest residence. The clients—a Manhattan couple with two small children—wanted the new house to remain unassuming.

To achieve that, despite requiring just over 10,000 square feet of program, Young created several distinct volumes—two connected ones that make up the main house and a third for guest quarters above a garage—pushing them to opposite edges of the property. “They don’t link together in your eye,” the architect says.

The barnlike structures represent “the archetypal suggestion of shelter,” according to Young, their gables visible on the inside, most dramatically in the vast space of the main living room, which soars 20 feet to its peak.

A landscaped garden and pool separate the two barnlike structures of the main house from the guesthouse (above). The expansive living room, modestly finished in painted wood planks, overlooks the lake (right).

That long double-height volume also contains the kitchen and dining area. A taller, two-story structure parallel to it includes bedrooms and auxiliary spaces such as the open laundry area and a television room with built-in furniture that Young’s office designed.

The simplicity of the structures is matched by the materials that form them, ones that will

patinate or become duller or more varied over time. Vertical cedar planks clad the exterior walls, standing seam natural zinc the roofs, and rough brick the chimneys (all interspersed with bronze hardware and light fixtures), giving the compound a slightly industrial aesthetic while remaining highly contextual and appropriate in the salty air.





The three-bedroom guesthouse is an even more pared-down version of the main house, with living spaces on the upper level over a garage (above). A boxy volume beneath the gable defines the bathroom and walk-in closets within the master bedroom of the main house (right).

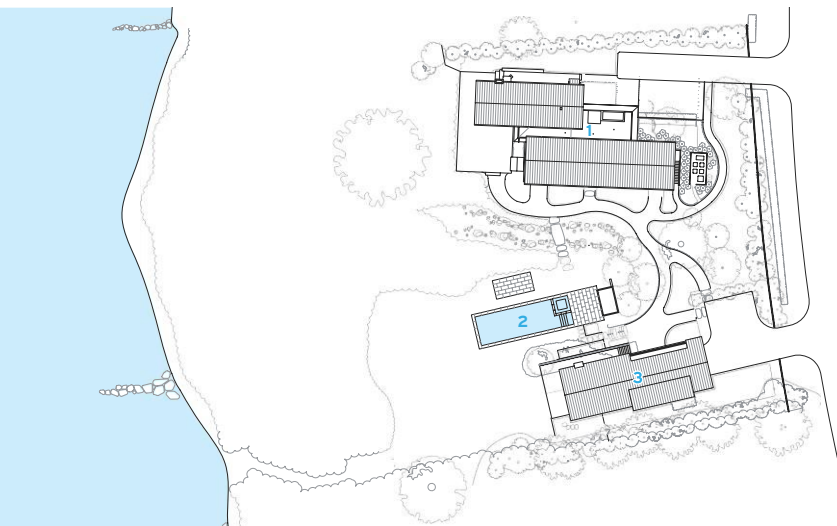


Other aspects of the design are expected to be enhanced with time as well. The property, particularly around the pool that separates the main building and guesthouse and the area between the main house's large outdoor deck and the shore, is heavily planted with native grasses and shrubs. "We want it to look as if we parked the house in the natural environment," Young explains.

Inside, Young maintains a muted palette but again introduces a variety of textures, including rugged handmade Moroccan tiles and finishes of heavily knotted wood. "We didn't want anything blingy," he says.

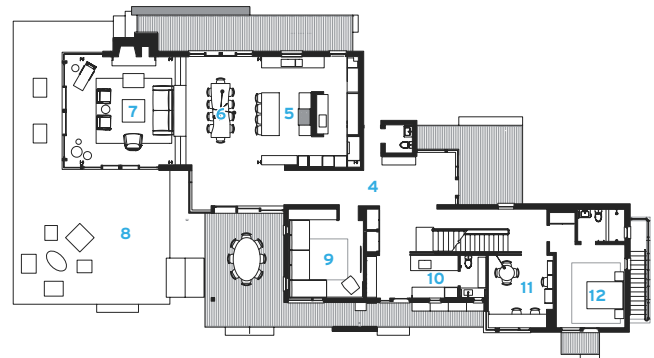
The exterior walls facing the road feature scant, small windows, but the portions of the compound with views across the property and to the water are largely clad in high-performance glass (that captures solar gain). Though not designed to Passive House standards, the buildings have extremely energy-efficient envelopes, with 8-inch-thick structural insulated panels sandwiched between the zinc roofing and the exposed wood structure, and a continuous layer of 4-inch-thick mineral wool outside a layer of conventional batt insulation within the walls. "It just makes sense for a house that is not used that often in the winter to keep it as tightly sealed as possible," says Young. "You barely have to run any heat to keep a stable temperature."

Upon entering the main house, you are immediately greeted with a panoramic view of the lake, a view that permeates many of the spaces within the compound. Any house located here would inevitably compete with its spectacular setting. Young avoided that issue entirely by creating pure, timeless structures in which one is in awe but at ease, and completely at home. ■



SITE PLAN

0 50 FT. 15 M.



MAIN HOUSE - GROUND FLOOR

0 16 FT. 5 M.

- | | | |
|-------------------|-------------------|------------|
| 1 MAIN HOUSE | 5 KITCHEN | 9 TV ROOM |
| 2 POOL | 6 DINING | 10 LAUNDRY |
| 3 GUESTHOUSE | 7 LIVING ROOM | 11 STUDY |
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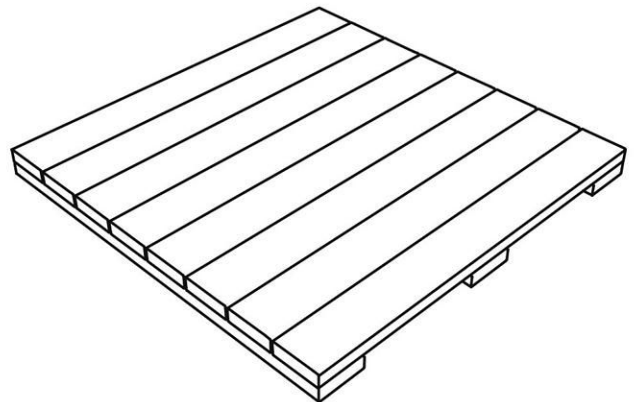
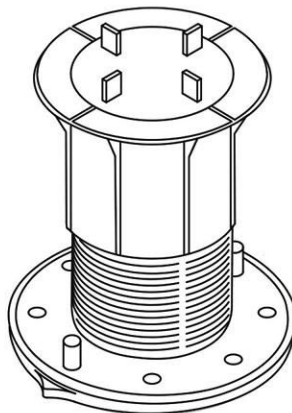
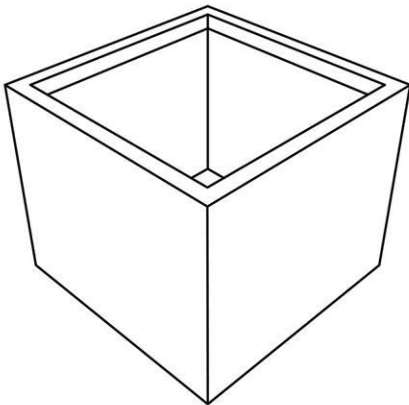




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DOLCE&GABBANA'S LONDON FLAGSHIP BY TOKYO-BASED CURIOSITY
REFLECTS A BOLD, IRREVERENT FORMALITY. BY CHRIS FOGES





“**THE DIFFERENCE** between ‘fast fashion’ and luxury retail is giving the customer a unique experience,” says Gwenaél Nicolas, designer of Dolce&Gabbana’s (D&G) new six-story London flagship. “Especially in the age of Pinterest, the challenge is to make spaces that you only fully understand by being there.” The Old Bond Street store is the latest example of D&G’s new retail approach in which a global identity has been dropped in favor of bespoke, site-specific interiors; it is the third to be completed by the French-born Nicolas’s Tokyo-based studio Curiosity. Its design seeks to induce a sense of the surreal through optical illusion, exploiting the “baroque poetry” of stone.

Having agreed with D&G cofounder and designer Domenico Dolce that a monochrome palette would convey the “strong, elegant” essence of London, Nicolas sourced more than a dozen types of stone from four continents. They include jet-black granite and glittery white marble, alongside several richly figured varieties containing both colors. Laid in bookmatched patterns for the floors, the variegated stone has pronounced wavy stripes that evoke flowing rivers, subtly encouraging customers’ progress through the enfilade of spaces on each of three retail levels (the three stories above those accommodate an appointment-only “atelier” for couture customers). Stone also marks the vertical elements used to guide movement, from the linings of deep doorways to the store’s centerpiece staircase, descending through the three floors like a viscous swirl of molasses. Black granite balustrades appear to dribble onto white stone steps, an effect achieved by waterjet cutting so precise that the joints are nearly impossible to discern with the eye or the fingertips.

On the upper retail floors, the dreamlike ambience is enhanced by the use of reflection to play with perception. Black stone-lined niches containing jewelry displays are set into mirrored walls so that they appear to hang in space as flat, graphic panels. Stepping inside causes a momentary double-take. Seemingly secret doors in the black stone walls reveal another surprise: small consultation rooms whose



PHOTOGRAPHY: © ALESSANDRA CHEMOLLO

Curiosity’s renovations included opening the first-floor facade to the street (above) and adding cast iron railings over the stonework to lend a domestic character. A single entrance was created at the center, on axis with a spiral stone stair running up to the third floor (left).



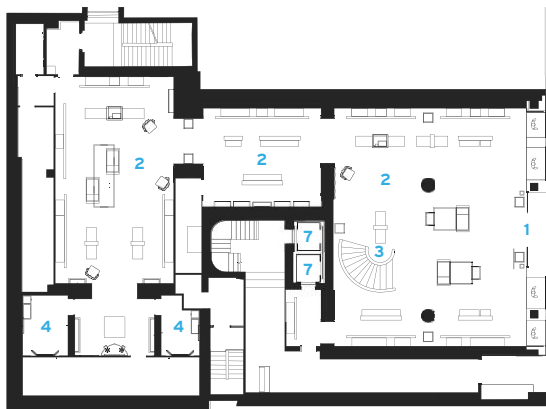
Above the retail store, a three-story "atelier" features an elliptical stair formed of many varieties of black-and-white stone (below). Contrasting colors also contribute to an illusory effect in jewelry rooms on the second and third floors (left), where mirrors lend an unreal thinness to black walls.

walls are padded with black damask, like outside jewel cases.

Opulence is also suggested by florid gold antiques and walnut-lined, gold-carpeted fitting rooms. But elsewhere, says Nicolas, "if you remove the stone, it's actually quite a minimalist space." Off-white plaster walls are enlivened only by a subtle baroque motif in relief, and the custom furniture—though beautifully made—is light and unobtrusive. These elements make a recessive backdrop against which to show D&G's richly colored, "jeweled" clothes and accessories, presented like paintings within polished walnut frames that seem to float free of the walls.

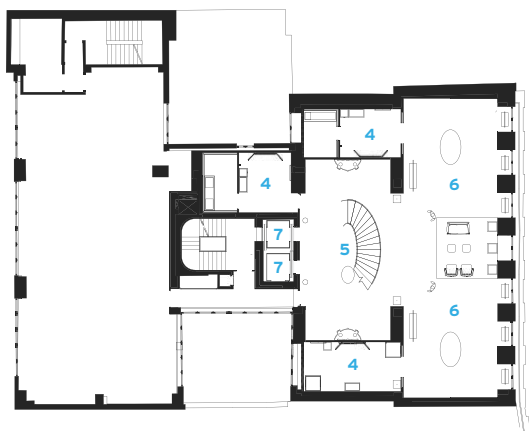
These moments of focus draw on the art of retail merchandising and the science of cognitive psychology. "Understanding natural human behavior allows us to aid orientation or create surprise and confusion," says Nicolas. Products are arranged so that the eye tracks from left to right and low to high, following viewers' instincts. Similar thinking informed the lighting design. "To make something disappear, you can either hide it or duplicate it," says Nicolas. With low ceilings limiting the ability to conceal fixtures, the polished plaster surfaces are instead strewn with many more twinkling spots than are necessary. "If there are five, you see them; if there are 50, you don't," he says.

Like the meandering grain of the floors, the lighting—arranged not to cast shadows—helps to make customers "feel as if they are floating in space." This mild, pleasant sense of disorientation is their reward for visiting the store, an experience that social media cannot replicate. "In retail, you usually create that sensation with smell or music," says Nicolas. "If you can create it with the space itself, that's magic." ■



OLD BOND STREET

GROUND-FLOOR PLAN



FOURTH-FLOOR PLAN



- | | |
|-----------------|--------------------|
| 1 ENTRANCE | 5 ELLIPTICAL STAIR |
| 2 RETAIL STORE | 6 COUTURE ATELIER |
| 3 SPIRAL STAIR | 7 ELEVATOR |
| 4 DRESSING ROOM | |



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The background is a stylized illustration of a building corner. The left side is a deep purple, and the right side is a vibrant red. The building's facade is composed of rectangular panels with thin black lines. A blue window is visible on the purple side. A white curved line with small tick marks is drawn across the bottom of the image, resembling a graph or a path.

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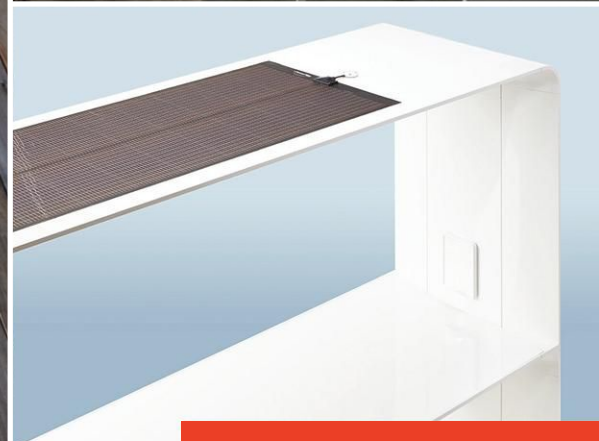
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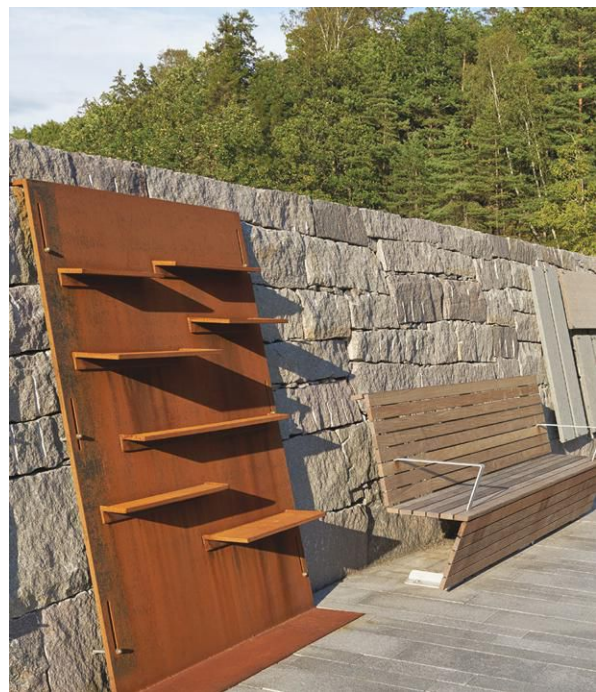
AS MEMORIAL GROVES BECOME MORE COMMON, ARCHITECTS RECONCILE THE NEEDS OF THE LIVING WITH THOSE OF THE DEAD. BY ERIN HUDSON

AN ENVIRONMENTALLY sensitive alternative to the mausoleum, memorial groves—communal plots where cremated remains are buried in paper urns that biodegrade over time—have become a regular part of death rites in Sweden. So, when Askim Church, about 30 minutes outside the city of Gothenburg in the southwestern part of the country, ran out of space in its traditional graveyard, they hired Stockholm-based landscape architect Thorbjörn Andersson to convert an adjacent ravine into one of these burial grounds. What most excited Andersson was the opportunity to design a place for those who are left behind. “It had to be architecturally beautiful,” he says, but, more importantly, it had to defer to its mission as a place “not only to mourn, but for gaining an understanding that we have to go on.”

While the architects cleared the site of vegetation and drained it, they chose to maintain the sloping topography as a contrast to the relatively level site occupied by the church and graveyard above. “The old and the new become very identifiable, but still they are side by side,” Andersson says. The team then created stepped terraces planted with grass. Urns are buried without demarcation in these areas, and benches for contemplation are placed at intervals along the stone walkway that lines the perimeter. At the site’s north end, a granite-block wall shields the grounds from the street. Limestone panels of various sizes and colors are affixed to the wall and are engraved with the names of the dead—the only indication of who is laid to rest there. “They are anonymous in many ways,” Andersson says of the deceased. However, he hopes that the unique space each name occupies on the mosaic-like array of inscribed slabs provides a degree of comfort to loved ones. ■



Terraced burial grounds gradually ascend toward the church (above). The old graveyard overlooks the new memorial grove (below). At the bottom of the hill, against a granite-block wall, is a bench for contemplation and steel shelves upon which visitors can place candles (right).





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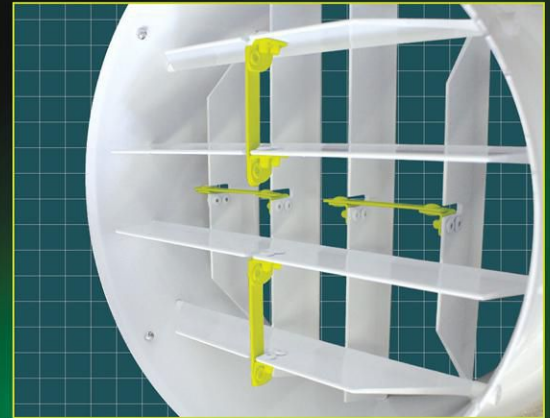
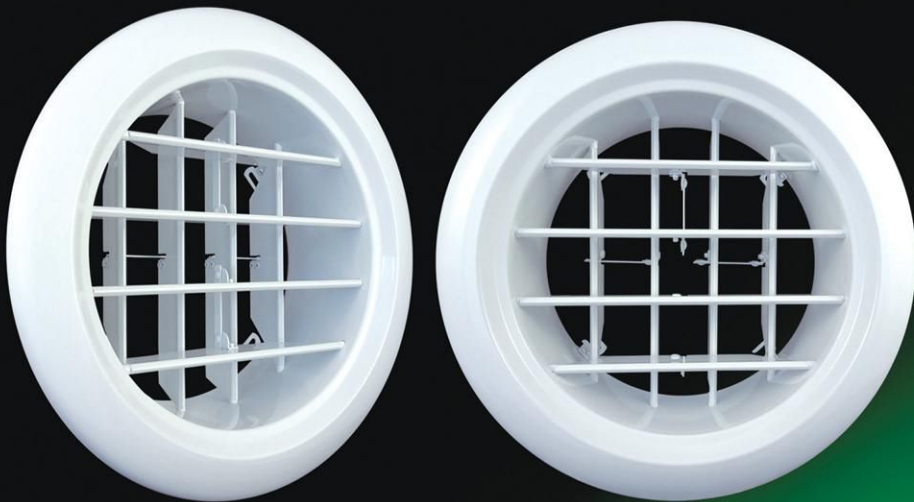


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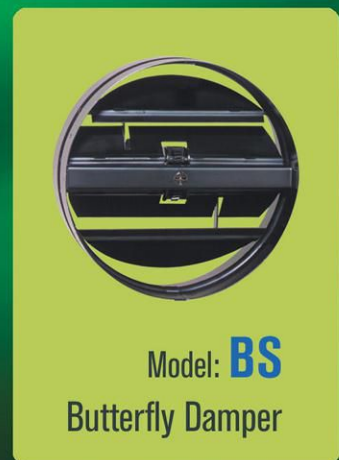
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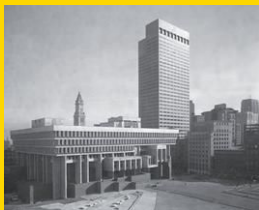
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The architects for the March issue's contest are **GERHARD KALLMANN, NOEL MCKINNELL,** and **EDWARD KNOWLES.** In 1962, the trio won a design competition for Boston's new City Hall (left). The building opened in 1969 to acclaim from the architectural community, although some of the public called it "perplexing."

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Ready for a Close-up

How photography shapes our perceptions of architecture.

BY CATHLEEN MCGUIGAN

IF ARCHITECTURE is “frozen music,” it should follow that a building could stand still for its close-up. But as an exhibition called *Image Building: How Photography Transforms Architecture* makes clear, capturing the built environment on camera has long been a highly subjective enterprise. The show, at the Parrish Art Museum in Water Mill, New York (until June 17, and then traveling to the Frist Center for Visual Arts in Nashville, Tennessee), is a brisk survey of 57 images by 19 photographers, from the glittering night views of 1930s New York by Samuel H. Gottscho (1875–1971) and Berenice Abbott (1898–1991) to the gritty shots of a half-finished Caracas skyscraper, home to a community of squatters, by Iwan Baan (born 1975), a RECORD contributing photographer.



IWAN BAAN *Torre David #2*, 2011



THOMAS STRUTH
Pergamon Museum 1,
2001

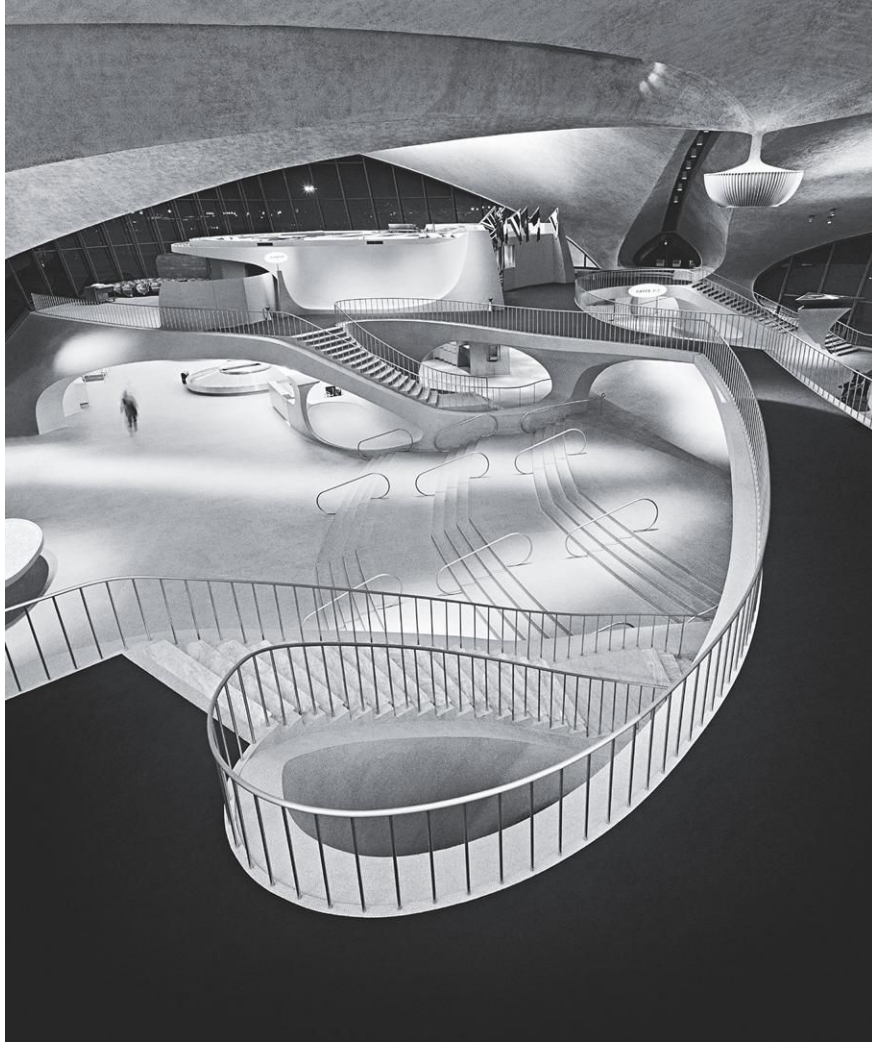
BALTHAZAR KORAB TWA Flight Center in John F. Kennedy International Airport, 1964

With the rise of Modernism, a wide range of visual interpretations of buildings emerged, argues critic Marvin Heiferman in the show's catalogue. While the great formal documentarians like Ezra Stoller (1915–2004) helped shape the heroic image of new architecture—see his 1958 view of the Seagram Building—a stripped-down design aesthetic also encouraged creative license. “The abstraction of the International Style seemed almost made for photographic expression,” wrote Akito Busch. Just one example: the interior of Eero Saarinen’s TWA terminal by Balthazar Korab (1926–2013), with its sexy curves of ramps and stairs flattened to a luscious pattern of swirls.

Many of the more recent photographs in the exhibition are highly personal visions. The poetically blurry images of famous buildings by Hiroshi Sugimoto (born 1948)—made with an old-fashioned 8-by-10 analog camera, using a long exposure—look like a fever dream. And the large-format, finely detailed color artworks of Thomas Struth (born 1954) are created with a heightened sense of reality. In his *Pergamon Museum 1, Berlin*, the museumgoers have been as carefully staged as an Old Master might have done in composing an epic painting, resulting in an image that is more about contemporary experience than the famous museum’s interior it depicts. ■

HIROSHI SUGIMOTO *Seagram Building, 1997* (below)

EZRA STOLLER *Seagram Building, 1958* (below, right)



PHOTOGRAPHY: © KORAB IMAGE (TOP); HIROSHI SUGIMOTO, COURTESY FRAENKEL GALLERY, SAN FRANCISCO/MARIAN GOODMAN GALLERY, NEW YORK (BOTTOM, LEFT); ESTATE OF EZRA STOLLER/ESTO (BOTTOM, RIGHT)





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The Whole Truth About Construction

Embodied Energy and Design: Making Architecture Between Metrics and Narratives, edited by David Benjamin. Columbia University and Lars Müller, 224 pages, \$39.

Empire, State & Building, by Kiel Moe. Actar, 255 pages, \$40.

Reviewed by Alex Klimoski

IT'S TIME for architects to take embodied energy more seriously—the total sum of energy used to extract, manufacture, transport, and assemble materials for building—as Columbia's David Benjamin and Harvard's Kiel Moe make clear in their respective books on the topic. The way we design today results in buildings that consume more energy than ever before, with serious consequences. According to Benjamin and Moe, architects egregiously approach buildings as isolated objects when they are instead moving parts in a far-reaching, enduring, and complex network.

Embodied energy is difficult to calculate, especially since most metrics are insufficient; the nuanced set of conditions that govern how we build, such as the quality of human labor or the state of global trade, must also be weighed if we are to build sustainably. But, as Benjamin, founding principal of the Living, writes in *Embodied Energy and Design*, these aspects are outside what is normally evaluated; the insights in this book of essays bring some to light. An essay by GSAPP colleague Jorge Otero-Pailos, for instance, contemplates the influence of cultural values, writing that they “charge our relationships to architectural objects with a cultural energy that we then reify as cultural capital.”

Essays ponder the various trajectories of building; some even put forth solutions for curbing negative externalities: Mason White, professor of architecture at the University of Toronto, discusses how the geographic sources of material extraction, labor, and fuel are all part of architecture's expanded territory; Stephanie Carlisle, environmental researcher at KieranTimberlake, suggests that design decisions be guided by rigorous material life-cycle analysis to track environmental impacts.

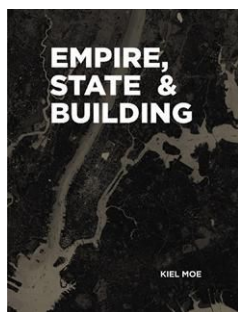
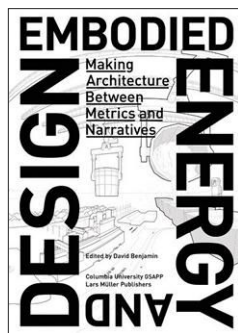
The stories told in *Embodied Energy* attempt to make sense of the overwhelming scales and intricacies involved. For example, a series of

“material stories” advocates simple inquiries (i.e., which cities have steel unions?) for improving efficiency along the supply chain; Daniel Barber, professor at the University of Pennsylvania School of Design, takes a broader view, linking global energy flows to geopolitical events surrounding World War II.

Somewhat similarly, Moe, also a contributor to Benjamin's book, chronicles embodied energy as a product of time in *Empire, State & Building*. Part manifesto, part history, it plots the 200-year development of the Empire State Building parcel in New York, from farmland to rowhouses, mansions, and skyscraper, illustrating how a single city block's embodied energy is tied to patterns of urbanization. He uses archival documents, and occasional wisdom from philosophers such as Henri Lefebvre and Michel Foucault, to look at how energy and material flux within each cycle of construction and deconstruction advanced the parcel to its next phase.

The iconic skyscraper lends each term of its name for the book's three parts: “Empire,” or geographic reach of materials; “State,” or set of relative thermodynamic, political, and socioeconomic conditions; and “Building,” or urbanization processes, involved in the various incarnations of the site. As one might suspect, each successive building embodied more energy than its predecessor. But the skyscraper's speedy construction (just over one year), its density, and its steady occupancy, among other factors, have resulted in net efficacy as an ecological system. It may be even more efficient, suggests Moe, than a comparably sized net zero tower constructed with advanced materials and up-to-date systems, which, ironically, require astronomical amounts of energy to produce and install.

Moe's book successfully navigates the relationships of energy, time, and space in an easily digestible format—but lacking is a compelling account of what's at stake if we continue to build per the status quo; this is where *Embodied Energy and Design* is particularly useful. If there's one crucial takeaway from both texts, it's that architecture must be designed as a holistic system. Considered together, the books serve as a vital provocation to architects to reconsider their capacities as agents of urbanization. ■



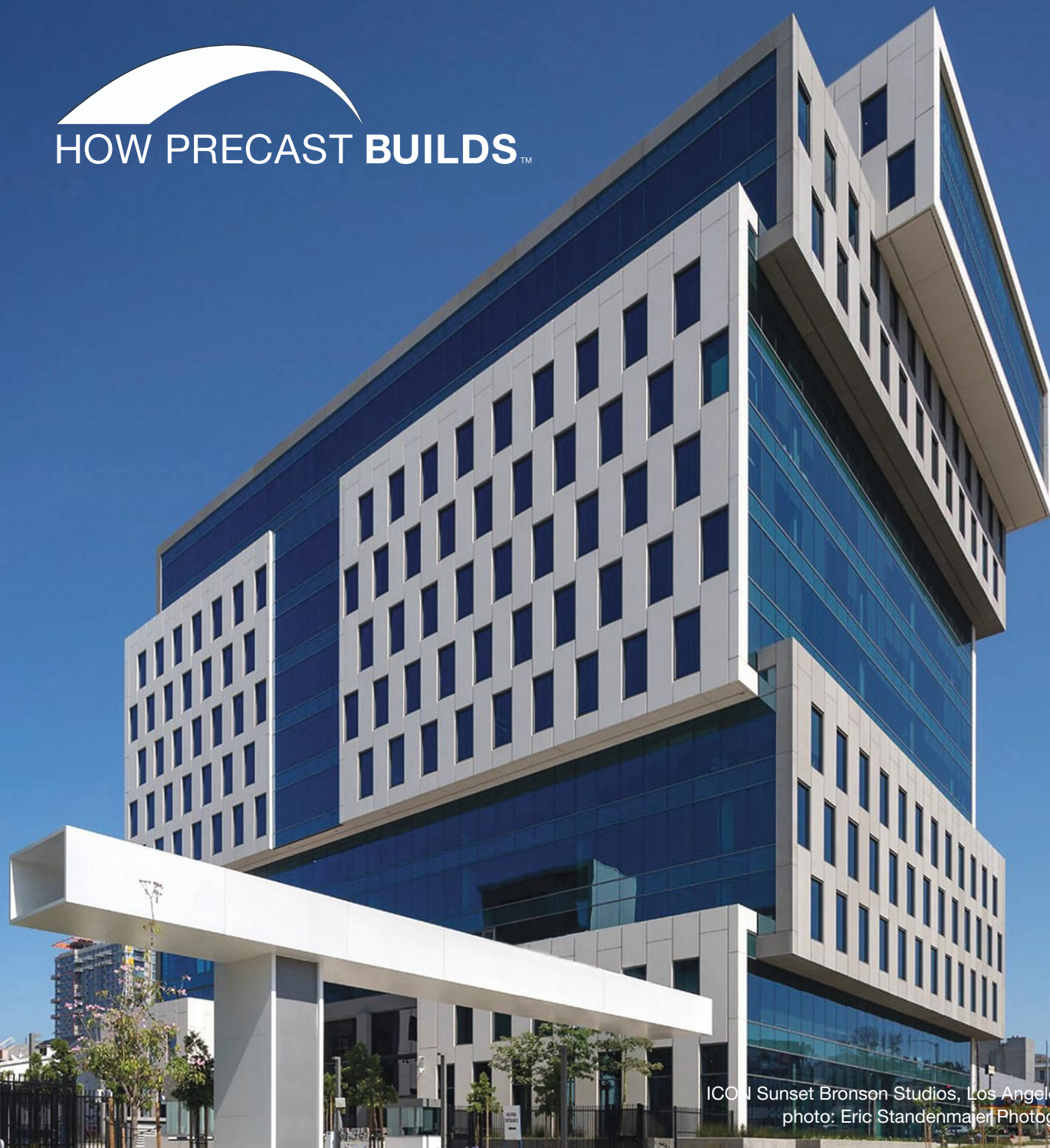
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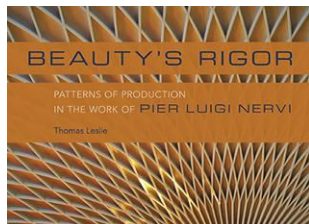
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Coming Out of Its Shell

Beauty's Rigor: Patterns of Production in the Work of Pier Luigi Nervi, by Thomas Leslie. University of Illinois Press, 232 pages, \$49.95.

Reviewed by Josephine Minutillo

IN 1954, Ada Louise Huxtable mounted an exhibition for New York's Museum of Modern Art called *The Modern Movement in Italy: Architecture and Design*. "Italy's outstanding contribution in the field of reinforced-concrete engineering is shown through the work of Pier Luigi Nervi," read a press release for the show. Nervi had yet to build the Palazetto dello Sport, an indoor arena for the 1960 Rome Olympics that was the world's largest reinforced-concrete dome when completed (and whose span-to-thickness ratio of 2,400:1 is, figuratively speaking, eggshell thin). The image of its striking ribbed ceiling played out on television screens across the globe, making Nervi an international celebrity at age 70.



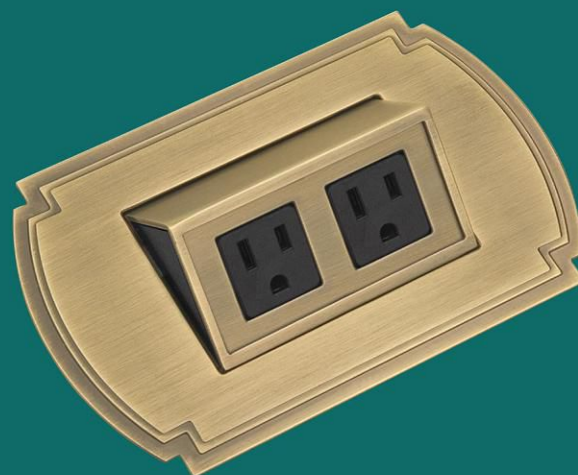
Aside from Huxtable, who would write a short book about Nervi in 1960, only a few investigations have documented his work in English—despite having, in his later years, completed notable structures in North America, including the 48-story Tour de la Bourse (1964) in Montreal with Luigi Moretti, which was the tallest reinforced-concrete tower in the world until 1968; St. Mary's Cathedral (1971) in San Francisco, with Pietro Belluschi, which has a dramatic, tentlike concrete roof; and the Scope Arena (1971) in Norfolk, Virginia, which remains the world's largest reinforced thin-shell concrete dome.

This new book by Thomas Leslie fills out the picture in a consistently engaging manner. Leslie, a professor of architecture at Iowa State University, tells the story of Nervi's education and covers the full arc of his career, from his first partners to his collaborations with acclaimed architects in Italy (Gio Ponti on Milan's Pirelli Tower) and abroad (Harry Seidler on Australia Square in Sydney, and Marcel Breuer on the UNESCO Secretariat in Paris) and to his own works as engineer, architect (and contractor). Leslie details the unremarkable early projects, Nervi's grudging acceptance of Fascist architecture, and the blossoming of his career late in life, following the war and coinciding with Italy's "economic miracle." Most important for the reader, he also writes about complex structural elements with incredible ease and clarity while solidly establishing Nervi's place in architectural history, which had faltered following his death in 1979. Notes Leslie, a younger generation (even, to an extent, Huxtable) "saw Nervi's rigorous approach as part of 'the Modernist straitjacket.'"

Though Nervi designed everything from skyscrapers to open-air stadiums and viaducts, he will forever be linked with concrete-shell buildings. While those structures saw their heyday in Nervi's era, Postmodernism and economic forces led to a steep decline in their popularity. There has been a revival of sorts in recent years, according to structural engineer Guy Nordenson. He cites the work of Mutsuro Sasaki in Japan, who designed shells with Ryue Nishizawa for the bulbous Teshima Art Museum (2010), and Toyo Ito, for the swooping Meiso no Mori Funeral Hall (2006). The nearly 60-year-old International Association for Shell and Spatial Structures will hold its annual symposium at MIT this year July 16–20, with Eero Saarinen's Kresge Auditorium shell structure serving as the principal venue. According to Leslie, "Nervi's reputation is now enjoying a renaissance as his ideal of integrated engineering, construction, and design has resurfaced and performance and efficiency have taken on new importance." ■

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Glow in the Dark

Smiljan Radic's beacon-like regional theater in Chile is a playful concrete structure wrapped as lightly as a tent.

BY FRED A. BERNSTEIN

PHOTOGRAPHY BY IWAN BAAN





THE SHAPE OF THINGS TO COME

The theater (opposite) provides a public space for the people of Concepción, which was badly damaged in a 2010 earthquake. The urban context (above); the main entrance (right).



SMILJAN RADIC may be best known for his 2014 Serpentine Pavilion in London, which resembled a seedpod resting on a group of flattened boulders. That left an impression of Radic, a RECORD Design Vanguard honoree in 2008, as a creator of primitive sculptural forms. But his latest building, a theater in Concepción, Chile, some 300 miles south of Santiago, explores a very different idiom, with a gridded concrete structure supporting a nearly rectilinear shell.

Asked about the dissimilarities, Radic said, “I

don’t really care too much about the shapes of buildings. I start with the materials, and the atmosphere I want to create.” In this case, the primary material is PTFE, a Teflon-coated fiberglass. It’s not generally used for institutional buildings, Radic says, “because it seems impermanent, like a circus tent.” But that’s precisely what Radic was aiming for. The tentlike enclosure (less than an inch thick) would signal to residents of Concepción, heavily damaged in Chile’s 2010 earthquake, that this was a place for socializing



JUNGLE GYM
The interior is a grid of slender concrete columns and beams, intersecting with straight and spiral stairs (left and opposite); the main theater (below).



and for fun, Radic explains. Of course the new building meets stringent seismic codes.

Called the Bio Bio Regional Theater (Concepción is the capital of the Bio Bio region), it contains a 1,200-seat main hall, a 250-seat secondary hall, and two 100-seat multipurpose rooms. Chile's Ministry of Culture selected the Santiago-based architect through an international competition in 2011, and the completed building closely resembles Radic's winning entry. It's an important project to him, he says, because it serves a social need. (Much of his work, such as Casas Pareadas, RECORD, June 2017, is for private clients.) Though the program called for a regional theater, Radic, by adding public space inside the PTFE shell, increased the scale, and therefore the impact, of the building. Self-effacing but not without ambition, he says, "We tried to do something national and even international."

By day, the building looks like a somewhat mysterious, solid object, with jaunty zigzags along the sides of the factorylike form. At night, it glows invitingly: "an advertisement that the theater is operating," Radic has said. Behind the thin exterior, the expansive lobby is a kind of jungle gym of concrete columns and beams (all a slim $11\frac{13}{16}$ inches square) as well as straight and spiral stairs and catwalks. Radic compares the aesthetic to "the scaffolding that holds up stage sets—something normally hidden." He adds that it is "really austere, really crude. Things aren't covered up with layers of materials." The string of lights that snakes through the lobby is a work by the Chilean artist Ivan Navarro. Inside and out, the auditoriums are covered in blackened wood, in sharp contrast to the white of the exterior. The 107,650-square-foot building cost a modest \$33 million, according to the architect.

Radic's future output may not resemble either the "primitive" Serpentine Pavilion or the "rational" Bio Bio Theater. Before boarding a plane for Switzerland for the opening of an exhibition he curated (on the radical architecture of the 1950s, '60s, and '70s, at ETH Zurich Höggerberg through May 18), he said of his next buildings, "I don't think they have to be the same and the same and the same." ■





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Soft Ware

Residential style and commercial-grade durability erase the boundaries between home and work furniture.

By Kelly Beamon



Shell

Designers can tailor this side chair for restaurants, cafés, and workplace kitchens. Swedish manufacturer Karl Andersson & Söner designed Shell to be specified with an array of options, including upholstery (shown), fabric or leather seat cushions, and in three wood species, 10 stains, and eight colors.

morlensinoway.com

Tablo

This 16"-high side table is among Danish manufacturer Normann Copenhagen's first contract offerings in North America. Designers can specify Tablo, with its black or white composite plastic top on ash legs, as well as a collection of Normann Copenhagen seating and service carts, exclusively through office-products maker Allsteel.

allsteeloffice.com



Kashan

Monica Förster's upholstered Kashan lounge chair for Bernhardt Design features a 33"-wide x 31"-deep suspension spring seat made of high-density molded foam. The frame comes in a polished stainless steel or powder-coated matte black finish.

bernhardtdesign.com



Buddy Family

Pedrali's Buddy Family poufs by Busetti Garuti Redaelli provide flexible relaxed seating in three sizes and two heights suitable for collaborative work spaces. The soft seats are comprised of upholstered polyurethane foam.

pedrali.it

Pilot

Washington, D.C.-based industrial designer Scott Mason built Pilot as a modernist take on the classic Captain's chair. Wisconsin-based Wooda uses 3-D modeling and computer controlled cutting (CNC) to create each walnut chair, 30" wide x 25" deep x 32" high.

wooda.co

**BuzziMe Low**

With a subtler profile than the high-backed BuzziMe chair designed by Axel Enthoven, the Low version sits 37" high and uses the same sound-absorbing upholstery as its 53" predecessor. Fabric on all items in the BuzziMe line are abrasion-tested to withstand up to 60,000 rubs—suitable for offices, lobbies, and airport lounges. Velvet (shown) has an abrasion resistance of up to 100,000. Designers can also specify an optional 9" x 11" work surface that attaches to either armrest.

buzzi.space

**New York**

French architect Jean-Marie Massaud designed the 16"-tall New York pouf to serve as a seat, ottoman, and side table. Designers can specify the 21"-wide ottoman in four lengths (72", 48", 39", and 21") or as a 39"-square upholstered in leather or a removable fabric cover.

poliform.it

Pacific Stool

Thos. Moser Contract designed this residential-style stool for heavy use. Available in 25", 27", and 31" seat heights, the Pacific Stool is frequently specified for universities. Its wood profile is available with an optional upholstered seat and in a variety of sustainable American hardwoods, including walnut (shown). A resin lacquer helps the product resist abrasion.

mosercontract.com





PHOTOS COURTESY OF SEMINOLE HARD ROCK HOTEL & CASINO FOR THE SEMINOLE TRIBE OF FLORIDA / KLAJ JUBA WALD ARCHITECTS

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Seminole Hard Rock Hotel & Casino for the Seminole Tribe of Florida (rendering). Scheduled to debut late spring/early summer 2019.



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Outer Beauty

These materials combine commercial toughness with retro colors, classic patterns, and handcrafted details.

By Kelly Beamon



Paint Dot

The simple hand-printed appearance of Designtex's Paint Dot wallcovering is a biophilic design intended to stimulate room occupants' sense of discovery and exploration. Made from latex, cellulose, and polyester, the covering is also low-VOC—an SCS Indoor Advantage Gold-certified alternative to PVC. designtex.com



Origami Field

Lunada Bay Tile's Origami line includes three-dimensional glass field tiles in six shapes. Moxie (shown) imitates the look of unfolded origami paper. This and the additional shapes come in nine opalescent colors including Crystal, Silver, Latte, Banacha, and Clear, plus blues Cottage, Java, Aqua, and Midnight. lunadabaytile.com



Inner Strength

Carnegie's line of woven upholstery features two retro patterns. Cross Stitch (shown) combines delicate florals and commercial durability. The 100% polyester fabric holds up under abrasion tests of 50,000–100,000 rubs. This design and Beam, which features stripes, are available in five colorways. carnegiefabrics.com



Eastern Hemisphere

Designer Suzanne Tick based this Luum Textiles line on her impressions of Tibet's colorful Plateau region. Eastern Hemisphere includes Dhurga, a direct-glue wallcovering; Monotex, a coated, bleach-cleanable, polyurethane upholstery; Ghat, a polyester, wool, and nylon blend for walls and upholstery; and Thangka, a polyester upholstery. luumtextiles.com



Natural Selection

Perennials Fabrics' Natural Selection features mildew-, stain-, and UV-resistant, solution-dyed acrylic upholstery with classic looks. The 6" horizontal pattern repeat on the collection's Go To Stripe can be specified, in bolts measuring 54" wide, in 12 colorways. perennialsfabrics.com

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Gasholders London | England | WilkinsonEyre

Steely Can

A relic from a city's industrial past is reinvented as a complex of upscale apartments.

BY HUGH PEARMAN

PHOTOGRAPHY BY PETER LANDERS

Repurposing tough, idiosyncratic industrial structures just got more extreme. In London's 67-acre King's Cross regeneration area, the architects WilkinsonEyre have transformed a set of Victorian gasholders with exposed iron frames—a peculiarly British infrastructure type—into 145 upscale apartments.

Clearly modern silvery cylindrical buildings now fill the spaces within the frames. But they were once occupied by huge telescoping cylindrical metal gas reservoir tanks (called "bells") that floated on belowground cisterns of water, rising and falling on guide rails. The new vol-

umes within the salvaged frames are designed, in their varying heights and aluminum cladding, to recall these vanished tanks.

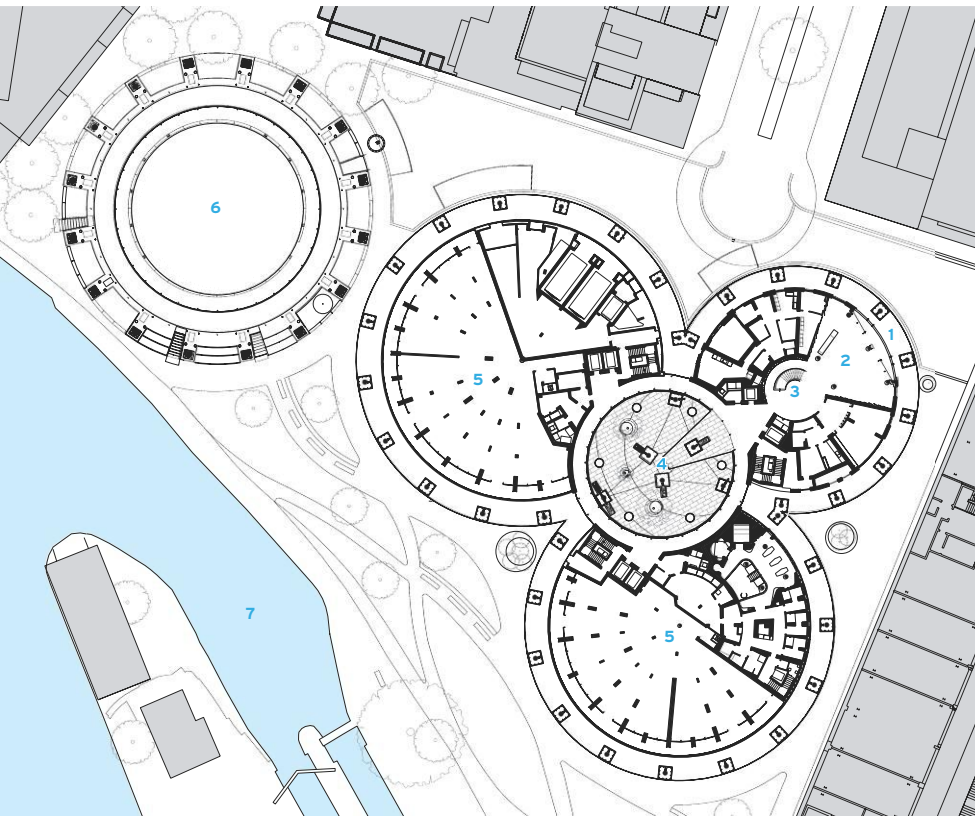
The containers stored gas produced from coal, known in the UK as "town gas" and used for street lighting, industrial processes, cooking stoves, and furnaces. Seldom encased within buildings, as was more common in the United States and Europe, they were once landmark features of most British towns and cities. Relatively few survive, since manufactured town gas gave way to pressurized natural gas in the 1970s.

The town-gas plant here—which was built and extended between 1860 and 1880, in the

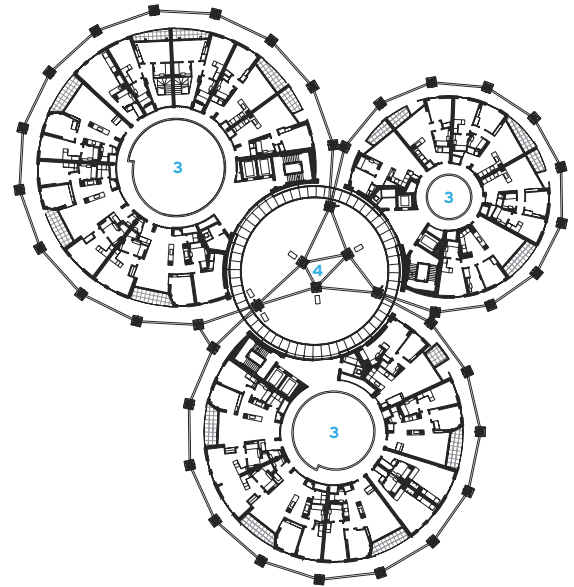




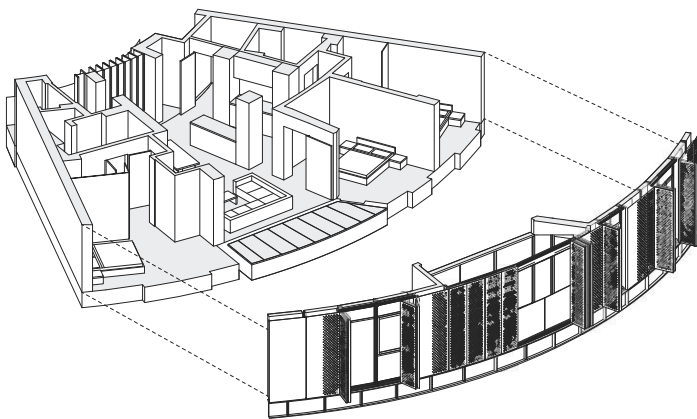
TWILIGHT TRANSPARENCY The new apartment buildings stand within the armature of the restored and re-erected iron gasholder frames dating from the 1860s (here and opposite). Their homogeneous cylindrical volumes are achieved by extending perforated shutters across openings such as windows and inset balconies.



SITE / GROUND-FLOOR PLAN



TYPICAL-FLOOR PLAN



APARTMENT EXPLODED AXONOMETRIC DIAGRAM

credits

ARCHITECT: WilkinsonEyre – Chris Wilkinson, Gary Clark, Jeff Lee, Elliott Krause, Dominic Wilkinson, Danielle Purcell, Louise Cann, Niels Thuesen, Sevil Piu, project team

APARTMENT INTERIORS: Jonathan Tuckey Design

CONSULTANTS: Arup (structural, facades); Hoare Lea (sustainability, m/e/p); Dan Pearson Studio (landscape); Speirs + Major (lighting); Gardiner & Theobald (quantity surveyor); Shepley Engineers (frame restoration)

GENERAL CONTRACTOR: Carillion

CLIENT: King's Cross Limited Partnership

SIZE: 258,000 square feet

COST: withheld

COMPLETION DATE: February 2018

SOURCES

UNITIZED FACADE: Frener & Reifer

CONCRETE CLADDING: Ductal

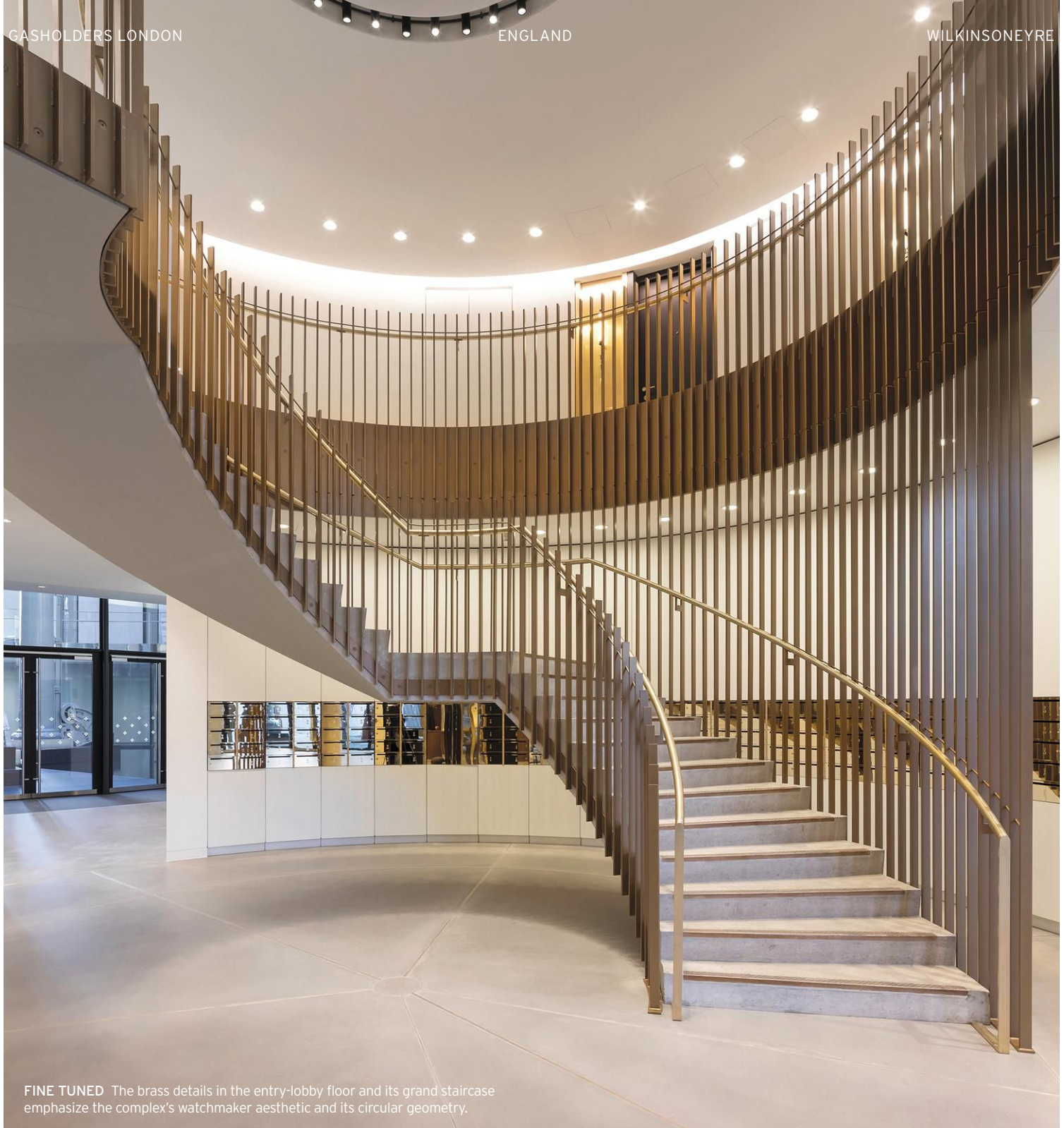
ALUMINUM WINDOWS: Schüco

ROOFING: American Hydrotech, Alumasc

- 1 MAIN ENTRANCE
- 2 LOBBY
- 3 ATRIUM
- 4 CENTRAL COURTYARD
- 5 RETAIL
- 6 POCKET PARK
- 7 REGENT'S CANAL

industrial zone behind the neighboring Victorian railroad terminuses of Kings Cross and St. Pancras—was dismantled in 2001 to make way for a new high-speed rail link to France. But, by then, these interlinked post-and-beam iron frames, with their simplified Neoclassical details, had achieved official “listed” (landmarked) status. WilkinsonEyre won the competition to reuse them in 2002, and the development consortium for the site carefully restored the iron frames, earmarking a new spot to re-erect them a few hundred yards to the north, on the banks of another industrial relic, the Regent’s Canal.

The frames then became the armature for a trio of freestanding apartment buildings in cylindrical drums of different heights. Practice founder Chris Wilkinson explains that such aged cast-iron components—originally carrying no weight, because the gas bells within them were self-supporting—could not be called upon to bear the loads of modern buildings. Accordingly, the frames—now painted battle-ship gray—stand slightly proud of the three new drums, giving clearance for motorized perforated-aluminum shutters on the apartments to open. In total, the conserved structure consists of an interlinked set of four



FINE TUNED The brass details in the entry-lobby floor and its grand staircase emphasize the complex's watchmaker aesthetic and its circular geometry.

gasholder frames, the fourth enclosing a small park designed by architects Bell Phillips.

Wilkinson, who has his own three-bedroom apartment in the complex, developed a scheme of intersecting circles that resembles the gears of a watch. By removing a pie-slice-shaped piece from each of the three new cylindrical volumes, he avoided having them touch or block light and views in any of the apartments. He designed circular atria for the center of the drums, enlivened by “scallops”—balconies that widen at different points to create the sense of spiraling, upward movement. And at the hub of the complex, where the three frames meet, is a circular courtyard, left open to the sky and landscaped with a shallow water

feature at its base. This new space is energized by the iron columns and latticework beams of the conserved—and now celebrated—original structure.

The walls encircling the central courtyard are clad in precast concrete panels, pale gray with fine vertical ribbing, relieved by walkways slung off the wall to connect the blocks on three levels. These contrast with outward-facing elevations that are covered in silver-gray aluminum, with the perforated shutters continuing across openings for windows and balconies. To complete the allusion to the old telescoping gas bells, the exterior skin is divided into horizontal bands by dark-painted steel ring beams. Landscaped roof gardens



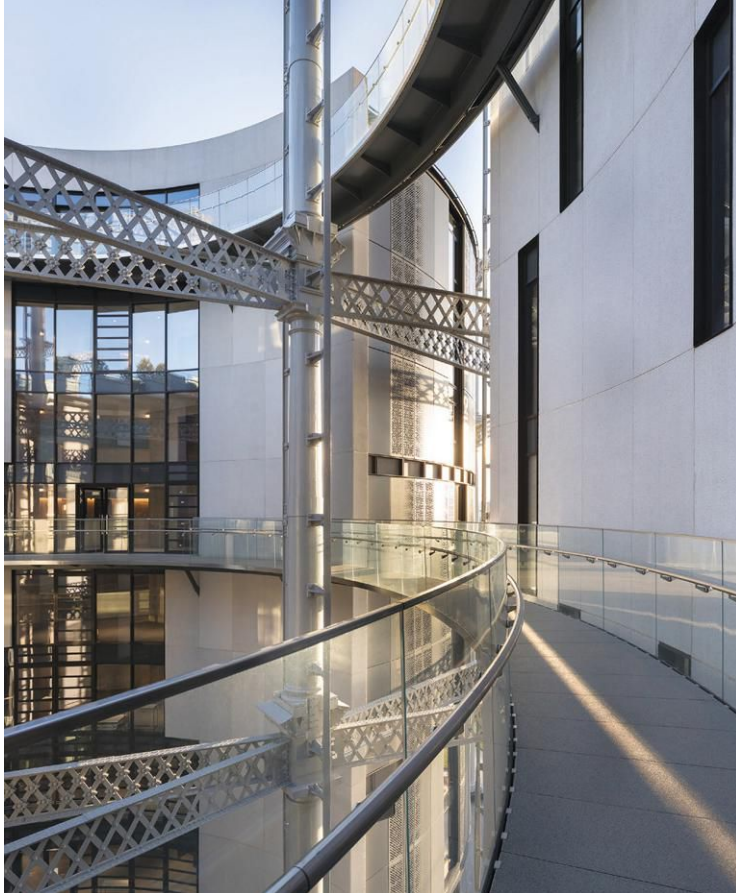
CURVE APPEAL The apartments are accessed via corridors that encircle each drum's atrium (below, right) and feature gently curved millwork (left). At the center of the complex is a courtyard open to the sky (opposite) with a walkway (below, left) linking all three buildings.

occupy the top of each cylinder.

Within the buildings, the common areas have floors and stairs in smooth concrete, with delicate radial brass strips that were inspired by Wilkinson's watchwork model and emphasize the circular geometry. The apartment interiors, by Jonathan Tuckey Design, are highly crafted with much use of sliding room dividers in mid-brown stained wood. Since each apartment is wedge-shaped, the emphasis is naturally on the views out, and the plan of the apartments incorporates the gentle curve.

Gasholders has the expected amenities for such developments, including a business center, a gym and spa, and rooms that residents can book for large-scale entertaining. Overall, however, the project is anything but conventional. And that derives largely from the geometry and expressive character of the preserved original structure, along with a thoroughly appreciative architectural response. ■

Hugh Pearman is a London-based architecture critic and the editor of the RIBA Journal.





Anastasis Church | Saint-Jacques-de-la-Lande, France | Álvaro Siza

Speaking Volumes

Pure geometry of form creates a quiet dialogue between a new church and a growing urban community.

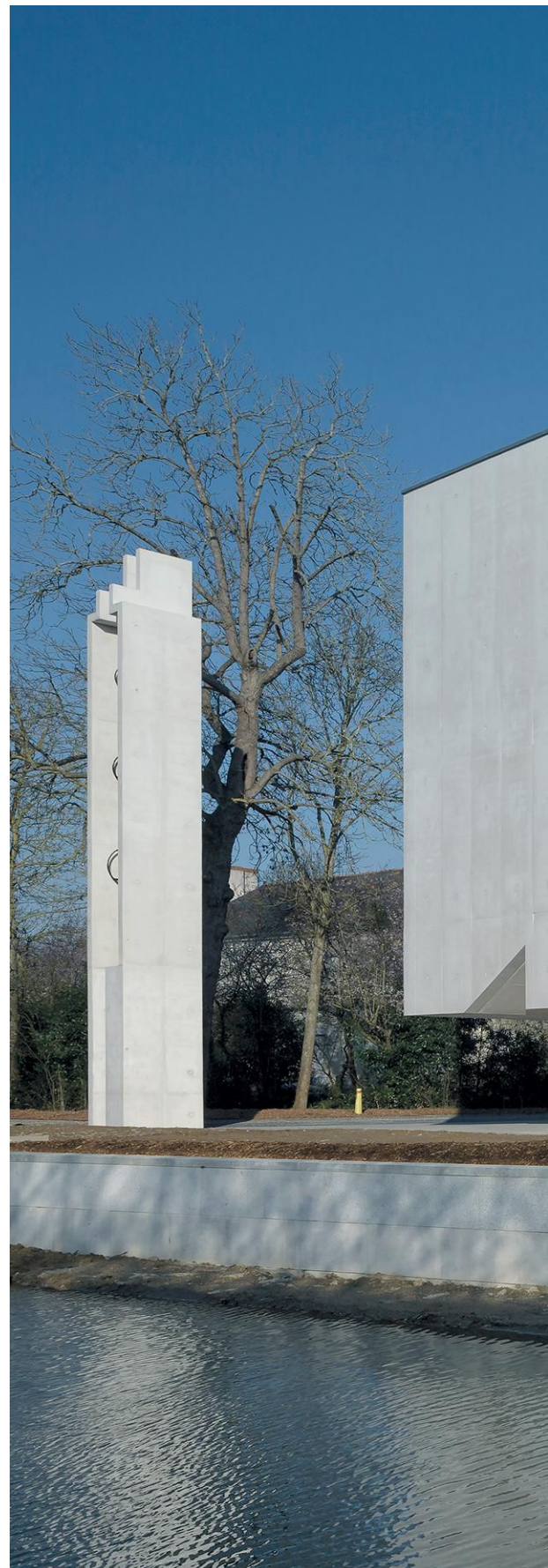
BY ANA MARTINS

PHOTOGRAPHY BY DUCCIO MALAGAMBA

Saint-Jacques-de-la-Lande, France—a small town near Rennes in Brittany—began an urban-development initiative more than 25 years ago, one that included 3,200 new housing units and the relocation of the town hall and municipal services. As the population in this area grew, it became apparent that it should have its own place of worship. The resulting Anastasis Church, an intricate puzzle of geometric forms designed by the Portuguese

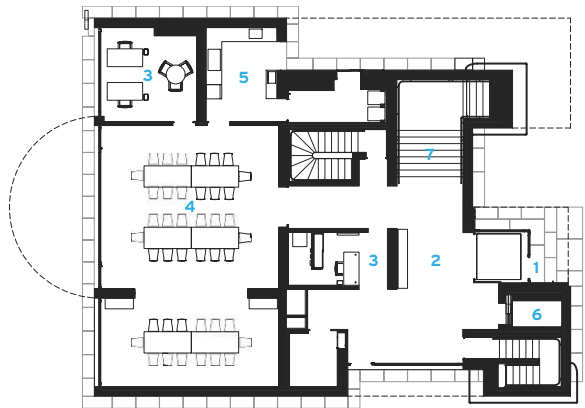
Pritzker Prize–winner Álvaro Siza, opened in February, providing the largely Catholic community with both a spiritual home and a meeting place at the heart of the new town center.

Made of white reinforced concrete, the freestanding 40-foot-high building is straightforward in form: a cylinder on top of an orthogonal volume dotted in each corner by four turret-like blocks. This geometry not only fits comfortably within the surrounding urban fabric, it also exemplifies the work of

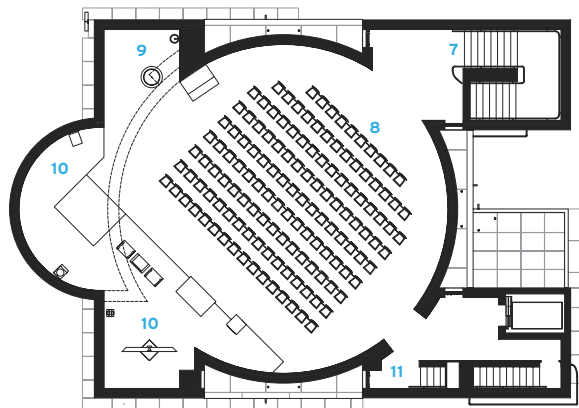
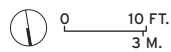




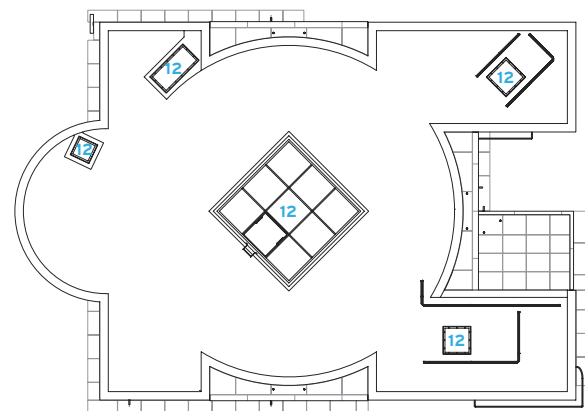
TOWN SPIRIT To integrate the church with the urban fabric, the campanile stands on the grounds (opposite), removed 37½ feet from the main building, at the same 40-foot height. A community center on the ground floor has glazed meeting rooms (here) with views to the landscape. Above them, what appears to be an apse houses a chapel.



GROUND-FLOOR PLAN



SECOND-FLOOR PLAN



ROOF PLAN

- | | | |
|----------------|--------------|-------------------------|
| 1 ENTRANCE | 6 ELEVATOR | 11 SACRISTY
ENTRANCE |
| 2 LOBBY | 7 MAIN STAIR | 12 SKYLIGHT |
| 3 OFFICE | 8 NAVE | |
| 4 MEETING ROOM | 9 BAPTISTRY | |
| 5 KITCHEN | 10 CHAPEL | |





Siza, 84, whom the Italian architect Vittorio Gregotti called, in his essay for the 1992 Pritzker laureate, “the father of the new architectural minimalism.” Beyond this apparent simplicity, however, lies a complex story.

Paris-based architect Jean-Pierre Pranlas-Descours, who planned the expansion of Saint-Jacques-de-la-Lande, originally proposed that Siza design the church and first discussed it with him in 2009. By the time Siza was set to meet with the archbishop and the Diocesan Commission of Sacred Art, he had studied the site and prepared detailed drawings and models. Their instant reaction, recalls Pranlas-

WELCOME PATH A daylit foyer, lined in Portuguese marble, greets visitors (opposite, top). The main stair (opposite, bottom) leads to the second-floor nave (above), which seats 136 people and is outfitted with custom furnishings designed by Siza. Apart from an adapted version of the pews, all elements were developed for this project.

Descours, was, “This is our church.”

One of the main concerns in working out the design was the building’s relationship to its present context and how that will play out in the future. “I wanted the church to emerge by completing the environment—as part of it, not as an ‘unusual’ object,” Siza explains. And, indeed, the 7,300-square-foot building distinguishes itself without



HEAVENLY GLOW Indirect light enhances the sacred atmosphere. In the nave, a dropped ceiling (above) conceals the lighting system and ventilation, as well as the luminescence from one skylight. Other skylights illuminate a sculpture of the Virgin Mary (left) and the baptismal font.

imposing on the surrounding townscape, instead taking cues from it, namely in its height and color. The tension created by the curves and straight lines, extruding volumes and voids, gives it solidity, and the rugged materiality of the concrete formwork reinforces its human scale. With its detached campanile and surrounding plaza, it establishes a strong sense of place.

The brief stipulated that the church be situated on the second floor, with a community center at grade (to include a divisible multipurpose room, an office, kitchen, and restrooms). Siza made the most of this unorthodox request with a design that is surprising in the way it draws on elements of vernacular religious architecture. What appears to be a typical curved apse on the second level, for example, does not correspond to the main altar inside. This is because the building's plan doesn't dictate the orientation of the nave, which is turned 45 degrees in relation to the main entrance.

The sequence of circulation is almost cinematic, beginning with a modest wood-framed glazed entrance. This protected space features a sketch on the glass by Siza depict-

ing the resurrection of Christ, and leads into a welcoming foyer, mostly clad in Portuguese marble, like much of the interior. Climbing the open main stair, the path culminates in the big reveal: a striking view of the 1,500-square-foot sanctuary, bathed in daylight, where curved white plaster walls, marble floors, and wooden furnishings create a serene ambience—with the altar and pulpit directly ahead on a raised wooden platform.

Congregants are guided to move around the periphery of the nave by the placement of the long rows of seating, so that the perception of the space can be taken in all at once. Three small chapels—containing the baptismal font, a statue of the Virgin Mary, and a wooden cross—open off the edges of the circular space. Siza's scheme, as well as the program and spirit of this Catholic church, all come together here, at its nucleus. The archbishop, says the architect, was unwavering in his support.

Siza's constant search for perfection has driven his long career but may have been one of his biggest obstacles here in achieving this level of beauty. "The main difficulty was to realize Siza's design in France, where the culture of detail in construction is not the same as in Portugal, Spain, or Italy," says Pranas-Descours. "The challenge was to explain that every part of Siza's detailed architecture has a relationship with a global concept of the space."

Perhaps the most intriguing feature in Siza's work derives precisely from the simplicity that underlies the complexity of each minute detail. "Personally, I think the project is so exceptional," says Pranas-Descours, "that it will simply enter the more general history of great French architecture." ■

Netherlands-based freelance editor and journalist Ana Martins writes about architecture and design.

credits

ARCHITECT: Arquitecto Álvaro Siza Vieira – Álvaro Siza, design principal; Rita Amaral, project coordinator; Avelino Silva, Clemente Menéres, Ana Silva, Cristina Ferreirinha, Maria Souto Moura, project team

ARCHITECT OF RECORD: Atelier Pranas-Descours, Architecture & Urbanisme – Jean Pierre Pranas-Descours, coordinator; Louise de Chatellus, Delphine Bresson, project team

ENGINEERS: EVP (structural); BETHAC (m/e/p)

CONSULTANTS: Acoustique Vivie & Associés (acoustics); Atelier Bruel & Delmar (landscape); GPIC, LDA (lighting)

CLIENT: Diocese de Rennes, Dol et Saint-Malo

SIZE: 7,300 square feet

COST: withheld

COMPLETION DATE: February 2018



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After



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— KEVIN HANSON
 PROJECT MANAGER
 CITIES EDGE ARCHITECTS
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Before



HOSPITALITY

- 88 The Dewberry Charleston, South Carolina
- 94 Nobis Hotel, Copenhagen
- 100 Ace Hotel, Chicago
- 106 Emiliano, Rio de Janeiro
- 112 Casa Fantini, Pella, Italy
- 118 The Murray, Hong Kong



The Dewberry Charleston | South Carolina
StudioDewberry/Reggie Gibson Architects

Mixing Business and Pleasure

A buttoned-down office building adopts a Lowcountry vibe after its conversion into a luxury hotel.

BY BETH BROOME

PHOTOGRAPHY BY KRIS TAMBURELLO

Though many associate the peninsula of Charleston, South Carolina, with its southernmost tip and its dense streets of magnificent 18th- and 19th-century houses, there is more to the city's story. Moving northward, things get a bit funky. Here, historic homes and churches and Marion Square give way to less noteworthy features, like swaths of surface parking, gas stations, and a crenelated

Embassy Suites. Yet within this unprepossessing context, a lone midcentury office building has been transformed into a stylish 100,000-square-foot, 155-room hotel called the Dewberry.

The former L. Mendel Rivers Federal Building, designed by the now defunct South Carolina firm Lyles, Bissett, Carlisle and Wolff, was built in 1964 to house various government agencies. Modern and Minimalist, it was constructed in accordance with 1962's Guiding



BE MY GUEST The hotel sits on historic Marion Square (left) and is surrounded both by noteworthy structures, like Citadel Square Baptist Church, and less remarkable ones, such as parking lots and gas stations. Charleston Harbor is visible to the south. A lead-coated copper canopy (above) signals the main entrance on Meeting Street.



Principles for Federal Architecture, which charged buildings to “reflect the dignity, enterprise, vigor and stability of the American Government” and incorporate elements that reflect regional design traditions. The facility closed in 1999, after sustaining damage from Hurricane Floyd.

The driving force behind its reinvention is John Dewberry, an Atlanta-based developer with a portfolio of mid- and high-rise commer-

cial and residential buildings. A former Georgia Tech quarterback, he is a larger-than-life personality with an unstoppable drive. When Dewberry, who has a home in Charleston, bought the concrete-and-steel-structure brick building from the GSA in 2008, he saw it as the perfect canvas for creating a luxury hospitality brand. In line with the Guiding Principles, Dewberry hoped for his hotel to retain its civic dignity while capturing the spirit of the Lowcountry. “My idea,” he says,



“was to give a nod to Midcentury Modern, but I wanted the hotel to be about Charleston as well.” While the developer decided to name the property after his father—who died while the project was ongoing—it does double, of course, as his namesake too.

Soon after the purchase, Dewberry assembled his design team: local architect Reggie Gibson—whose proposal was a departure in its intent to preserve rather than raze the building, as many in the community wished—and Lockie Brown, now of StudioDewberry, Dewberry Capital’s in-house design group, which the developer formed as the project progressed, to retain more control. For interiors, Dewberry turned to Workstead Studio, the Brooklyn-based design team behind the public spaces in that borough’s Wythe Hotel (the firm has now opened an office in Charleston). An eight-year-long process of design, financing, procuring permits, and extensive asbestos abatement followed.

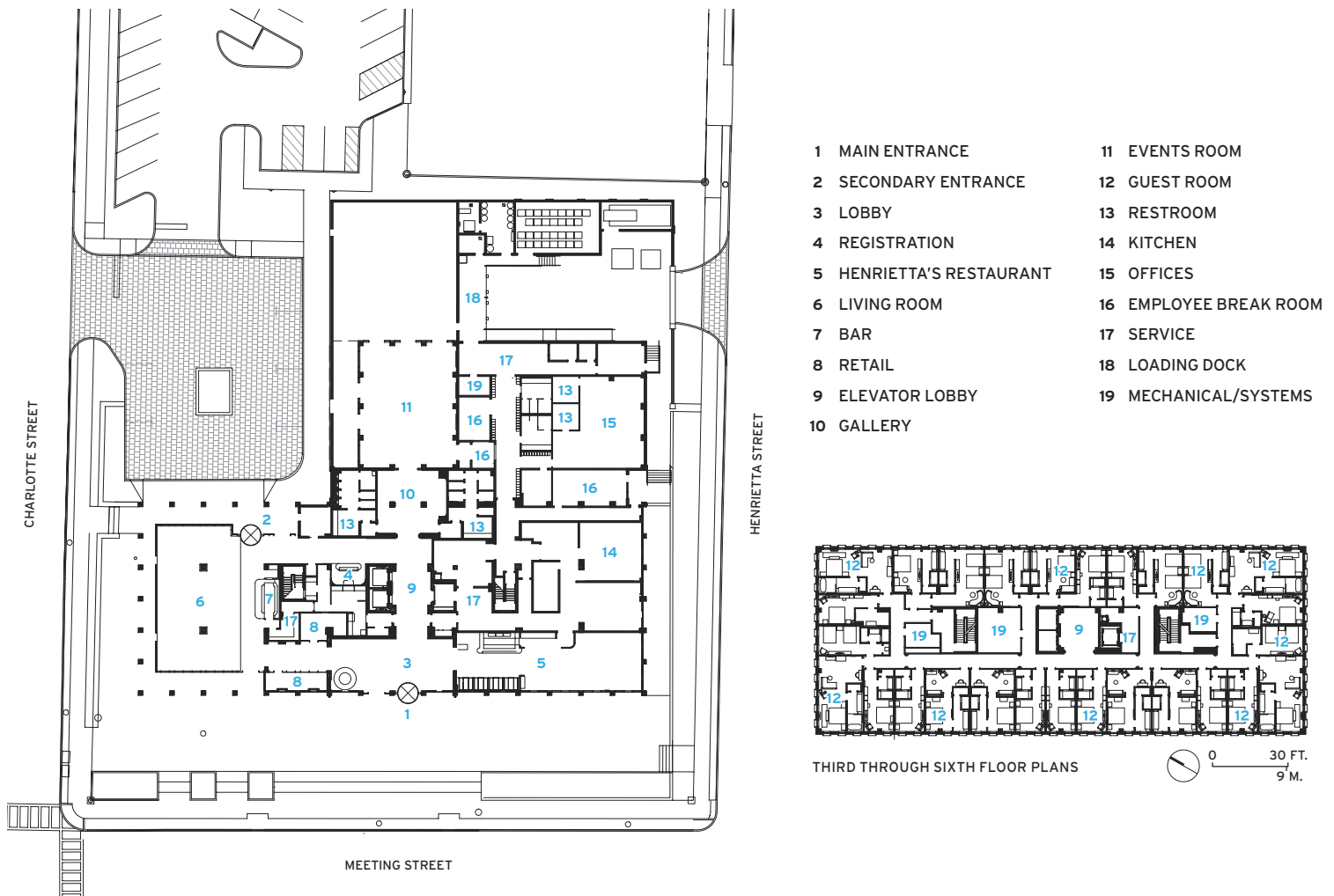
The building exterior today remains largely



SUM OF PARTS

New marble floors and cherry paneling line the lobby (opposite, top), which features a brass map of Charleston and Poul Kjærholm sofas. Henrietta's restaurant (opposite, bottom) incorporates traditionally Southern elements and materials. A freestanding brass bar (above) is a focal point for the Living Room lounge, which is decorated with antiques and midcentury pieces bought at auction (right).





SITE PLAN WITH FIRST-FLOOR PLAN

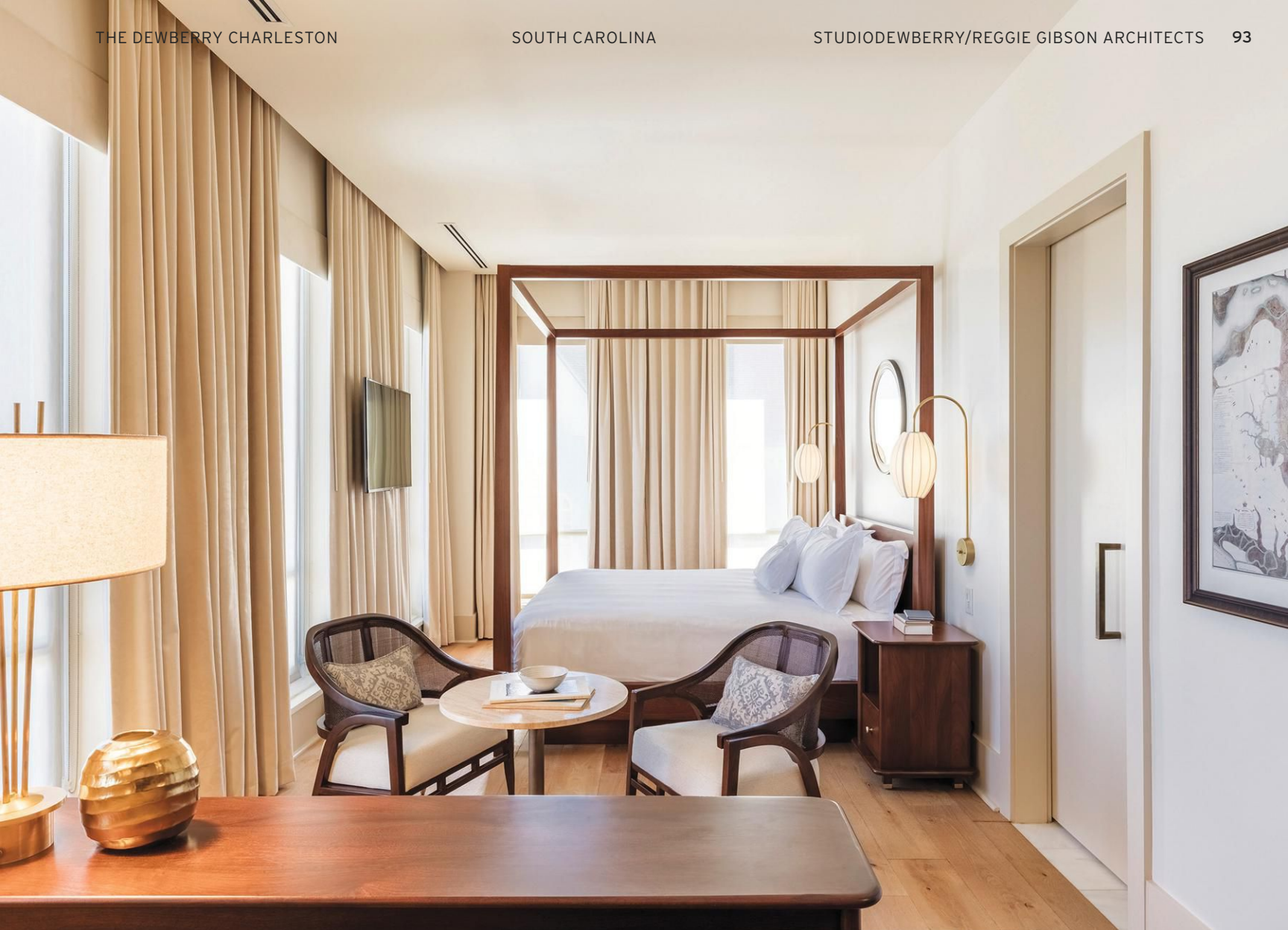
unaltered, save for a ballroom the team appended to its back and a glass box they erected on the roof for a lounge and events space, surrounded by a roof deck with 360-degree views out to the peninsula and the Ashley and Cooper rivers converging in the harbor. The seventh level, just below the roof, originally housed mechanicals but has been transformed into a floor of guest rooms. These moves were necessary, Dewberry says, to make the economics work but also, he remarks of the building, "We thought that she was a little fat, and we needed to lift her up a bit."

Another significant change was to push the glazing back from the colonnade at one end, creating a porch—a requisite of Southern living—that wraps the spacious ground-floor lounge dubbed the "Living Room." The team saw the protruding white marble window surrounds (patterned after a nearby historic building) as the structure's most redeeming quality, but felt they were undermined by the original red brick. One of the more controversial moves was to lime-wash the building, say Gibson and Brown, sparking a battle with the city and neighbors. The fight was worth it, and the handsome dusty gray lends a sober but also light formality and calls out the veining in the marble elements. The lime-washed-stucco treatment of the structure's base, however, lacks the solidity of the rest of the building and is the exterior's weak moment.

Inside, while the team kept the elevator and stair core in place, the rest of the floor plans were completely reworked. Finding that 10 years of

neglect had taken its toll on finishes, very few were salvaged. Now, beneath a new lead-coated copper canopy, guests enter a small lobby with white Vermont Danby marble floors (the old marble was made into tabletops for the outdoor café) and cherry-paneled walls with unlacquered brass trim. This space leads into a brasserie-like restaurant, the elevator bank, and the spacious Living Room, which is divided into zones by the careful placement of artwork and both new and Midcentury furnishings and light fixtures (many of the pieces purchased at auction), so the space has a comfortable, domestic feel. Stefanie Brechbuehler and Robert Highsmith of Workstead call the aesthetic "Southern modernism," and it resonates in the selection and custom design of furnishings, lighting, and soft goods. On the upper floors, the team transformed warrens of offices into double-loaded corridors, pleasantly low-lit, that lead to the smartly furnished guest rooms. With their marching rows of tall, narrow windows, the rooms carry a reminder of the building's former life.

On a recent tour, Dewberry expounded on his vision for the project and his personal investment in the design, construction, fit-out, and branding. The developer hopes to build on the name internationally, starting with multifamily housing on the hotel's adjacent parking lot. Clearly, he has a knack for assembling a team that can make it all happen. The design instinct apparent here through the deft exploitation of an existing building's assets, and an obsession with detail, have combined to create a hotel that stands out as an unlikely new tourist destination in this historic city. ■



credits

ARCHITECTS:

StudioDewberry
– Lockie Brown; Reggie Gibson
Architects – Reggie Gibson

ARCHITECT OF RECORD:

McMillan Pazdan Smith
Architecture – Eric Garris,
Alfonso A. Abate

ENGINEERS:

Forsberg
Engineering & Surveying (civil);
4SE (structural); Promus (m/e)

INTERIORS:

Workstead,
StudioDewberry

CONSULTANT:

BOLD (lighting)

OWNER:

John K. Dewberry

SIZE:

100,000 square feet

PROJECT COST:

\$70 million

CONSTRUCTION COST:

\$20 million

COMPLETION DATE:

July 2016

SOURCES

WINDOWS: Oldcastle
BuildingEnvelope

GLAZING: Vitro Architectural
Glass

ENTRANCES: Dorma, FGD

HARDWARE: Rocky Mountain,
Safelok

FURNISHINGS: custom
designs, Stickley, Westwood
Avenue, Lawson-Fenning, Michel
FERRAND

CARPET: Shaw

ELEVATORS: Otis

PLUMBING: Newport Brass,
Toto, Kohler



THE HIGH LIFE Guest rooms (top) incorporate custom-designed furnishings and lighting. The tall, narrow windows hint at the building's former life and flood the rooms with daylight. Elevator halls (above) have a *Mad Men* aesthetic, with brass-and-crystal chandeliers reproduced from a Joseph Hoffman design, and linen wallpaper that depicts local foliage and blooms, by artist Becca Barnett.



Nobis Hotel | Copenhagen | Wingårdhs

Scandinavian Swagger

A Swedish firm transforms a century-old building in the Danish capital into a chic hotel.

BY JOSEPHINE MINUTILLO

PHOTOGRAPHY BY ANDRÉ PIHL



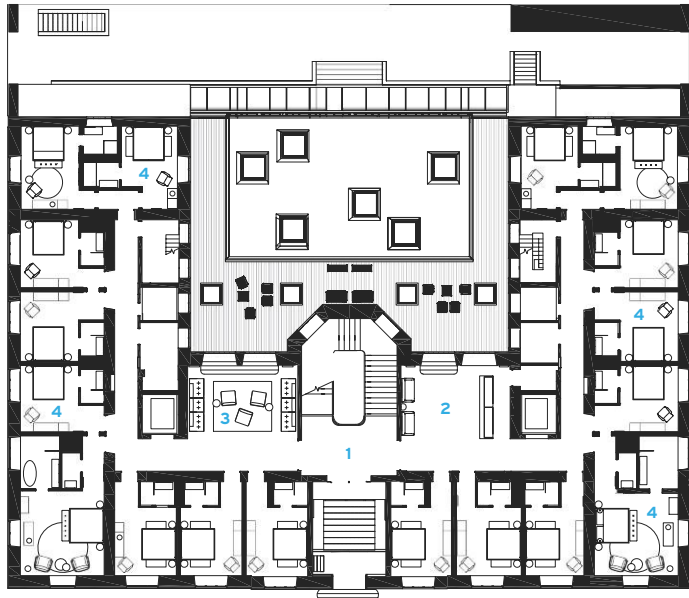
CLASSIC ELEGANCE

The Neoclassical building (below) retains many original features, including the grand staircase, which was extended (opposite). An upper-floor suite combines original molding and bold color (here).

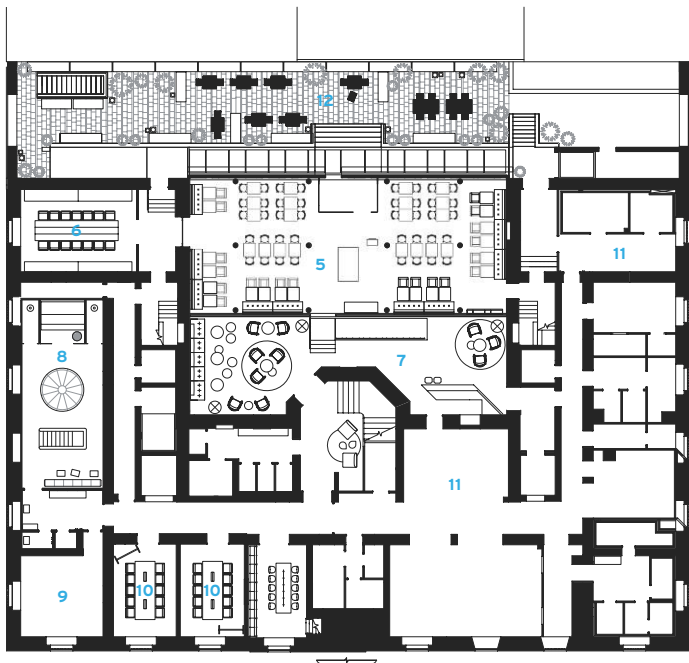
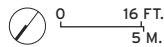
Nobis founder and CEO Alessandro Catenacci doesn't deliberate decisions—he relies on gut instinct. As he did with its five previous incarnations in Stockholm, the head of the hospitality group chose to convert an existing structure for Nobis's first hotel in Denmark rather than build from scratch. "I like buildings that have added value," explains Catenacci. "Whether it's the architecture or the location or just plain sex appeal." The Gothenburg, Sweden-based firm Wingårdhs has worked with Nobis on several of these buildings, bringing a unique character to each, including the latest, a Neoclassical pile in the center of Copenhagen.

The 1903 structure, long abandoned, was one of the first in the city constructed of reinforced concrete. Built for a wealthy insurance company, it has marble accents, large windows, a majestic central staircase,





MAIN LEVEL



LOWER LEVEL

- | | |
|------------------|--------------|
| 1 ENTRANCE HALL | 7 LOUNGE/BAR |
| 2 RECEPTION | 8 SPA |
| 3 LIVING ROOM | 9 GYM |
| 4 GUEST ROOM | 10 MEETING |
| 5 RESTAURANT | 11 KITCHEN |
| 6 PRIVATE DINING | 12 COURTYARD |



and soaring ceiling heights. “I loved it instantly,” says Catenacci. Wingårdhs’s elegant but approachable design enhances those features while bringing warmth to the space. And while the exterior’s Italianate appearance is not typical of the city, where gabled brick rowhouses are emblematic, the new interiors pay homage to contemporary Danish design. “We wanted to balance the grandness and richness of the building with soft, welcoming detailing that is nice to the touch,” says Helena Toresson, lead architect on the project.

Wingårdhs maintained the original Carrara marble steps at the main entrance and central staircase, their worn, slightly wavy treads lending a lived-in feeling. The firm extended the staircase—which had terminated at the piano nobile—down to the lower level, replicating the ornate wrought iron of the rail. “We found the only blacksmith in Copenhagen who could do it!” says Toresson.

The lower level, containing the restaurant, kitchen, bar, gym, spa, meeting rooms, and wine storage, is a hub of activity. The dining area is somewhat detached, located within an addition built inside the central courtyard of the C-shaped structure some years ago by a local university that took over the building to house its music academy. Once a lecture hall with solid walls and little glazing, Wingårdhs reclad the exterior of the addition in copper and opened up the interior with extensive windows, including clerestories, so that it is now bathed in



SUITE LIFE Bathrooms feature a cloudy deep gray Bardiglio marble (opposite). Light woods and leather add warmth to the colorful rooms (above). Custom-designed canopy frames and chandeliers fill the tall space (right).

daylight. (The only other change to the building's exterior—which is classified as being “worthy of preservation”—is the addition of two elevator towers on the roof, barely visible from the ground.)

Inspired by a recent visit to Le Corbusier's La Tourette, Toresson used a similar mullion pattern on the addition's new windows, echoed also in the room's wall mirrors and screens. The cheery room features custom tables and sofas—the former in Douglas pine, the latter in a light saddle leather along the walls. By contrast, the nearby bar, within the building proper, is finished in dark Nero Marquina marble.

A cloudy deep gray Bardiglio marble covers every inch of the spa, including its ceiling. “If you're going to use such a strong material, you owe it to the material that nothing gets in its way,” asserts Toresson. The same marble is used, somewhat less extensively, in the bathrooms of the 77 hotel rooms, which are spread over four floors, including the attic. Ceilings range from 12-foot high on the piano nobile to up to 14 feet on the two floors above it. To fill that tall space, Wingårdhs designed custom beds with posts and canopy frames,



credits

ARCHITECT: Wingårdhs – Gert Wingårdh, principal;

Helena Toresson, senior lead architect; Madeleine Müller, project architect

ENGINEERS: Scandig (structural, civil); AI (mechanical)

CONSULTANTS: Anker & Co. (lighting); Gade & Mortensen Akustik (acoustics)

CLIENT: Nobis

OWNER: Balder Danmark

SIZE: 59,000 square feet

COST: \$154 million

COMPLETION DATE: October 2017

SOURCES

FURNITURE: Carl Hansen & Søn, Gubi, Hay, BassamFellows, Tacchini, Menu, La Cividina, Lammhults, Moroso, Senab, Sarkop, e15

MARBLE: E. Nielsens Mekaniske Stenhuggeri

HARDWARE: Salto, Dorma

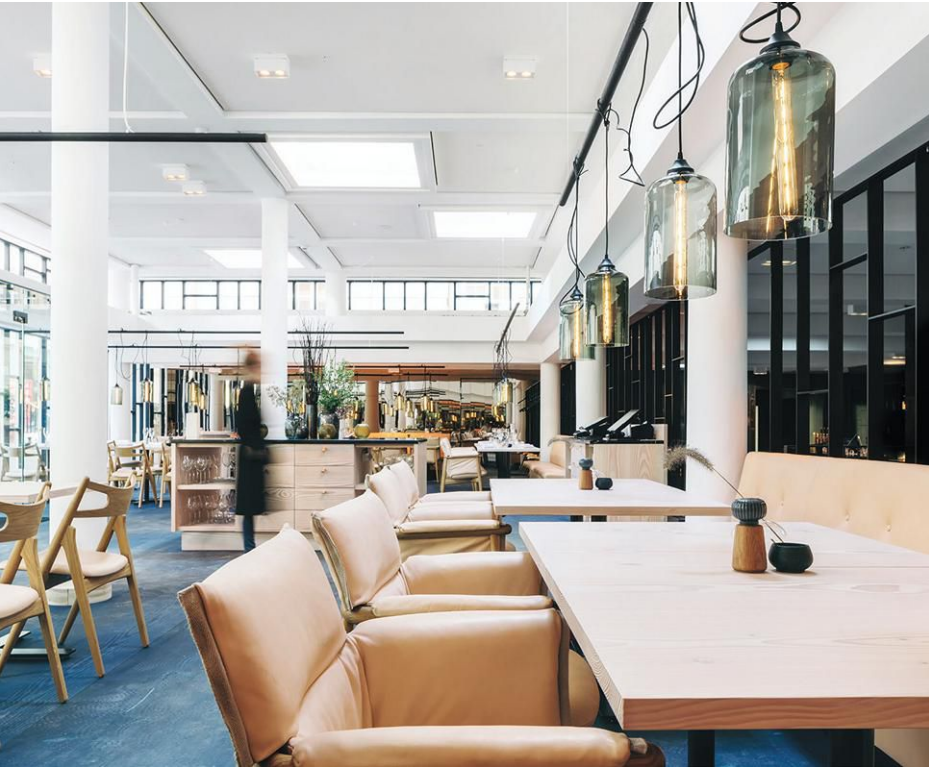
CARPETS AND CUSTOM RUGS: Kasthall

LIGHTING: Nemo Lighting, Vibia, Lambert & Fils, Tekna, Wästberg, Rubn, Senab, Tri West, Morosini, Flos

ELEVATORS: MR motech

PLUMBING: Dornbracht, Unidrain

PAINT: Jotun





FINISHING TOUCHES An addition in the rear courtyard was reclad in copper and now serves as the restaurant (opposite, right and left). Every surface in the spa is clad in the same Bardiglio marble as the bathrooms (opposite, bottom). Beside the entrance hall is a playful living room where guests can lounge (above).

topped by mobile-like chandeliers it also designed. In another nod to Le Corbusier, his *Lampe de Marseille* light fixture adorns each side of the bed.

But the overall design of the rooms has a strong Danish flavor, with saddle leather covering portions of the entry vestibule and select Danish furniture accents by Hans Wegner and others. Floors are oak in a chevron pattern. The intense blues and paler yellow-greens selected for the walls, with a heavy matte finish, were inspired by the colors in the galleries of the Glyptotek, the large sculpture museum located just next door. Wingårdhs designed the tops of the cabinets and mirrors in the rooms to reflect the gently curved windows of the traditional facade. The graphic rugs it created serve as the only art, leaving the colorful walls bare.

Each of the niches within the corridors—some where openings to

offices used to be—are embellished with a different vintage lamp from Catenacci's personal collection (which he wired himself), adding a playful, colorful touch throughout the building. That playfulness culminates in what the hotel calls the "living room," a casual area near reception for hotel guests to lounge in. The one heavy statement is the reception desk itself, a block of concrete that Wingårdhs designed as an ode to the building's history.

Wingårdhs, which had previously transformed an Art Nouveau former girls school into the chic Miss Clara, in Stockholm—a youthful choice in the luxurious Nobis portfolio—is currently working with the company to turn a 17th-century palace in Mallorca into a boutique hotel. But at the same time that Nobis has set its sights outside Scandinavia—it is also always looking in Catenacci's native Italy—its roots are firmly planted in Sweden. Wingårdhs is currently renovating a former warehouse, by Swedish master Sigurd Lewerentz in Stockholm, to become Nobis' next, more affordable, destination. "Functionalist architecture can be just as spectacular as historic architecture," says Catenacci. "I like everything that is beautiful." ■

Ace Hotel | Chicago | GREC Architects and COMMUNE Design

Out of The Loop!

A new hotel borrows from 20th-century Modernism to fit into a gritty landmarked district.

BY JAMES GAUER

A river and a 10-lane expressway separate the Loop, Chicago's high-rise downtown, from the Fulton Market area, a gritty low-rise backwater to the west whose brick warehouses used to provide storage for wholesale-food businesses like meatpacking, in a city Carl Sandburg described in 1914 as "hog butcher for the world."

A century later, the hog butchers are long gone, replaced by hipsters living in condo lofts, techies working at Google, foodies flocking to upscale restaurants, and fashionistas navigating the cracked sidewalks in 6-inch heels. The streetscape is scruffy, but it's only a 10-minute walk from the Loop, so developers have been descending into the area en masse, and today 52 projects are either under construction or on the drawing board. Many are for hotels, which the rapidly gentrifying neighborhood needs, including new outposts for Hyatt, Hoxton, Nobu, and Equinox. Last August, the Portland-based boutique hospitality chain Ace opened the \$44 million, 159-room Ace Hotel Chicago, designed by Chicago-based GREC Architects with interiors by Los Angeles COMMUNE Design, firms that had previously collaborated on the Ace in downtown L.A.

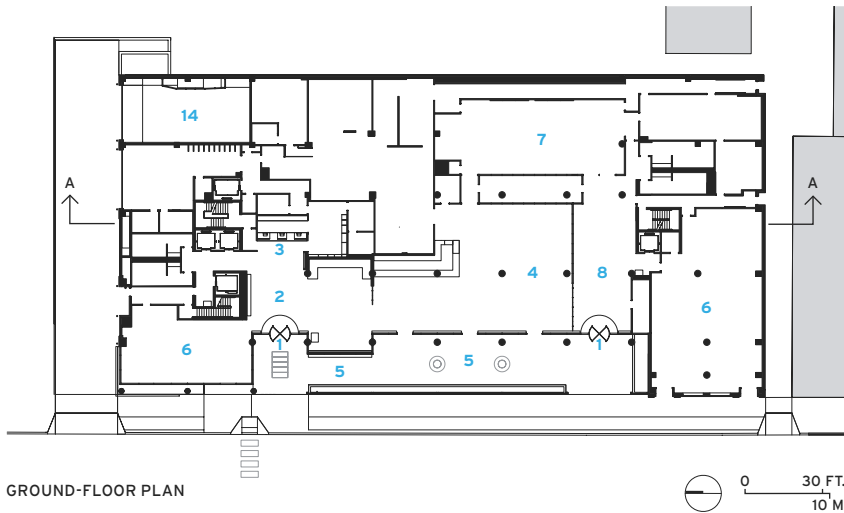


PHOTOGRAPHY: © TOM HARRIS



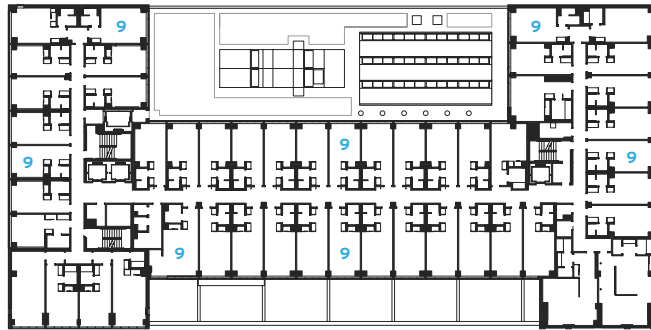
THREE-IN-ONE The hotel is massed to read as three buildings, one incorporating a historic redbrick facade (opposite). The other wings (left) feature charcoal-aluminum windows with floor-to-ceiling industrial sashes and casements in horizontal ribbons.



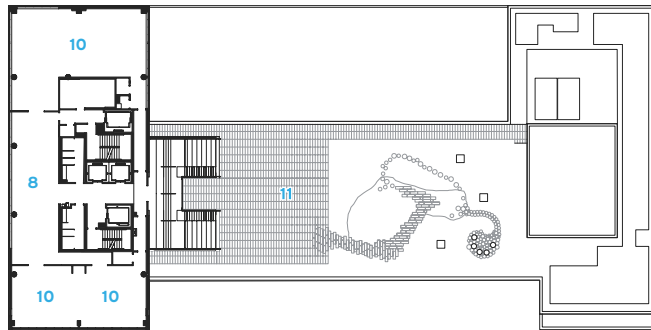


GROUND-FLOOR PLAN

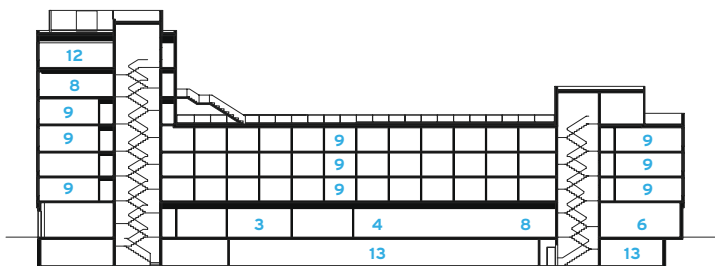
- 1 ENTRANCE
- 2 LOBBY
- 3 RECEPTION
- 4 RESTAURANT
- 5 PATIO
- 6 RETAIL
- 7 EVENTS
- 8 PRE-FUNCTION SPACE
- 9 GUEST ROOM
- 10 MEETING ROOM
- 11 ROOF TERRACE
- 12 ROOF-LEVEL LOUNGE
- 13 PARKING
- 14 PARKING ACCESS



TYPICAL-FLOOR PLAN



SIXTH-FLOOR PLAN



SECTION A - A

Trying to fit into a historic cityscape can lead architects into pastiche, but GREC sidestepped this trap with a sensitive modernist intervention. “Our practice has long been rooted in the principles of early Modernism,” explains principal Don Copper. “A design language inspired by the legacy of the Bauhaus and Mies van der Rohe yet informed by the local warehouse vernacular seemed harmonious with the Ace brand, compatible with the area’s industrial aesthetic, and firmly rooted in Chicago’s architectural continuum.”

The Ace is situated directly opposite Google—a company with enough clout to demand a clause in its lease that stipulated the construction of a hotel across the street. The property was controlled by the same developer that built the tech giant’s offices in a renovated 1920s cold-storage facility. Ace was selected in part because of its track record transforming emerging neighborhoods.

The 262-foot-long hotel site carried three restrictions. Google’s views of the Loop skyline were protected by a height limit that applied to most of the street frontage, leaving only 54 feet at the north end for construction higher than four stories. The area is landmarked, so the 45-foot-wide, two-story redbrick facade of a former cheese warehouse had to be retained, the only historic remnant on the site. Finally, the district’s design regulations stipulated a continuous street wall.

GREC responded to these constraints with a hybrid building designed to look like three smaller ones. At one end, they created a four-story structure behind the historic facade and clad it in matching red brick. At the other end, beyond the boundaries of Google’s height restriction, they built a seven-story volume with meeting rooms, a bar, and lounges on the top two floors. Both of these wings have retail space at grade and guest rooms above. In between, the architects inserted a 163-foot-long, four-story span topped by a roof terrace. Set back 20 feet from the property line, this lean central section contains the hotel lobby and public spaces, which are visually extended by an outdoor patio. This lively gathering place, for hotel guests and casual drop-ins alike, is enclosed by an open screen comprising steel columns and beams with a brick base and spandrels—an airy partition that also provides the required street wall.

The architects reinforced the three-part massing by using different materials for each portion of the building. “This creates a more varied streetscape,” says Copper. The new floors visible above the historic facade not only replicate the original red brick but also

STREET SIDE

The building's low center wing (right) houses the lobby at grade and guest rooms above. Set back to create a patio, it is enclosed by an open steel-frame screen with brick planters and spandrels. The lobby bar and restaurant are furnished in modern classics and showcase commissioned art, such as a textile based on abstract bird's-eye views of Chicago (below).



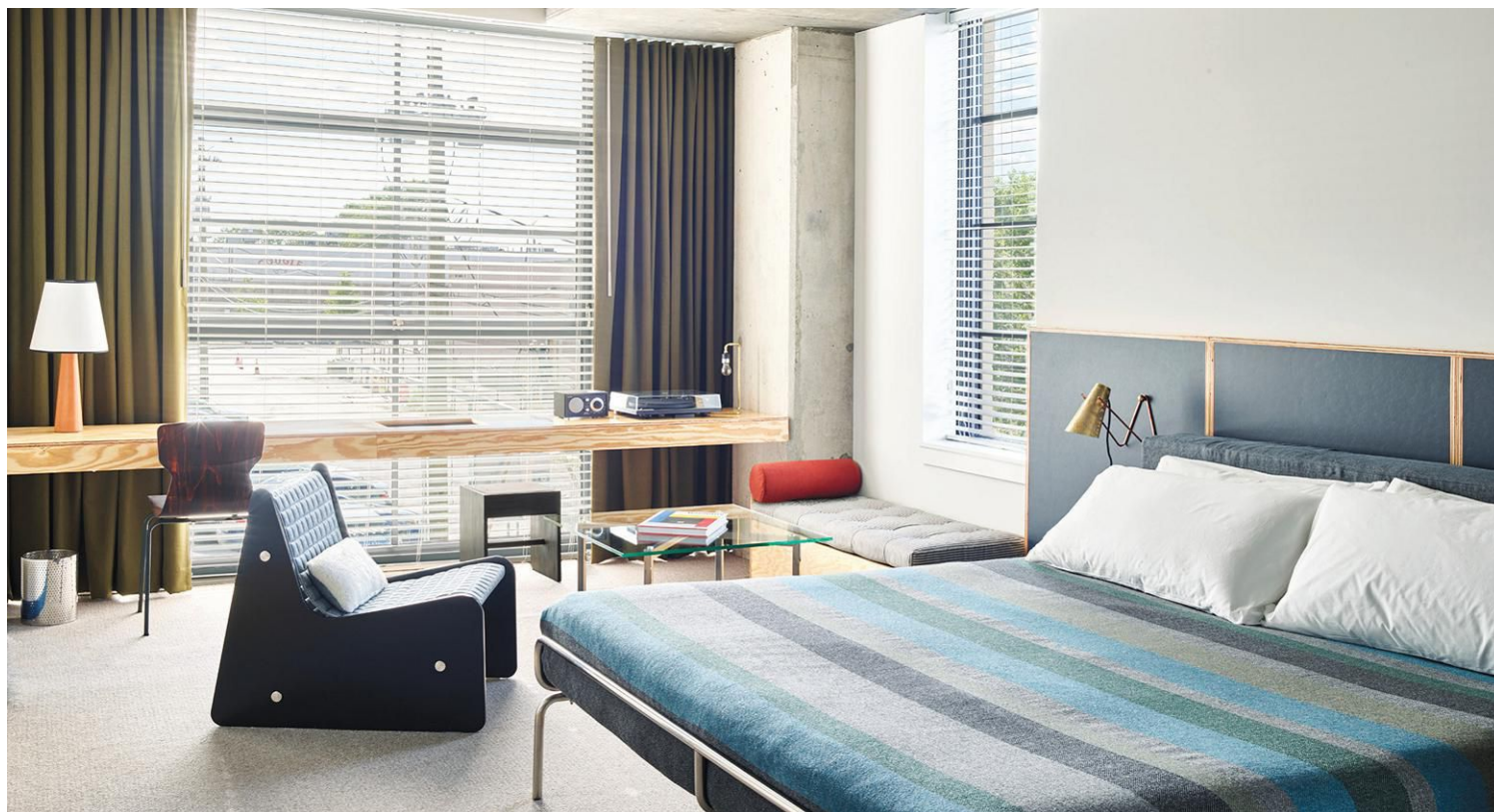
the punched windows. The seven-story wing is clad in creamy white brick, with ribbonlike horizontal fenestration on the side elevation and a graphic grid of floor-to-ceiling industrial sashes on the front, which recalls Mies van der Rohe's 1939 Minerals and Metals Building on the Illinois Institute of Technology campus a few miles away. The facade of the lower, central wing features a steel frame filled with ganged casements and charcoal brick spandrels.

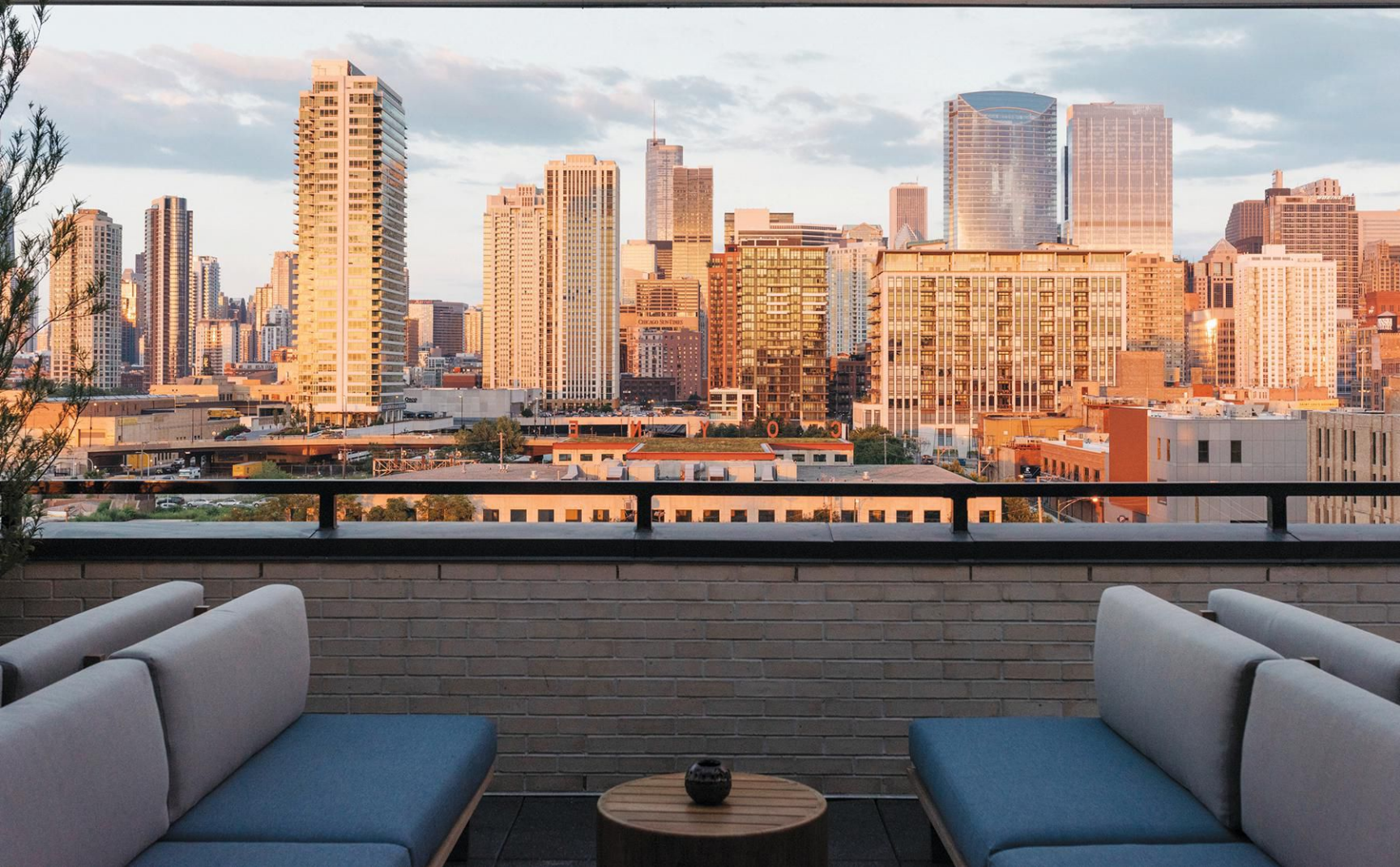
The interiors are a nuanced mix of high and low that Commune's co-founder Roman Alonso describes as "polished but comfortable." The glazed lobby, brilliantly sunny by day, merges seamlessly with a restaurant, bar, and coffee shop on a continuous floor of charcoal terrazzo, under ceilings paneled in plywood and fiberboard. The reception desk and bar are finished in linoleum and brass. In the guest rooms, exposed concrete ceilings contrast with plush draperies and eclectic custom furnishings, while bathrooms and storage are wrapped in crisply detailed plywood. Alonso says the design is "a little more grown-up and refined" than Commune's previous work for Ace. Unlike some hipster hostels that feel like nightclubs, this one is refreshingly light, airy, and calm.

Ace has established its brand primarily through edgy makeovers of historic buildings. Its Chicago venture is only the second that's mostly new construction, but its bold, rigorous formalism, inspired by the local Miesian heritage, was just what Kelly Sawdon, Ace's chief brand officer, wanted—"a modern synthesis of functionality, art, and design in the legacy and spirit of Chicago"—or, as Alonso puts it, "Mies does Ace." ■

James Gauer, an architect and author based in Victoria, B.C., Chicago, and San Miguel de Allende, Mexico, contributes regularly to RECORD.

INSIDE STORY The lobby (right) has terrazzo floors, a rug by George Nakashima, and ceilings clad in plywood and fiberboard. Furnishings are vintage and new. Guest rooms feature plywood built-ins and custom furniture (below). The top-floor open-air lounge has skyline views (opposite, top). Upper-level meeting and public spaces lead to the roof terrace (opposite, bottom).





credits

ARCHITECT: GREC Architects
– Don Copper, principal; Ryan
von Drehle, Nate Casteel,
project architects

INTERIOR DESIGNER:
COMMUNE Design

ENGINEERS: Forefront
(structural); WMA Consulting
Engineers (m/e/p/fp); Spaceco
(civil)

CONSULTANTS: Site
Design (landscape); Integral
Consulting (enclosure
systems); Charter Sills
(lighting); Shiner + Associates
(acoustics); Veneklasen (it/av)

GENERAL CONTRACTOR:
Power Construction

CLIENT: Ace Hotels

OWNER: Sterling Bay

SIZE: 140,000 square feet

COST: withheld

COMPLETION DATE:
August 2017

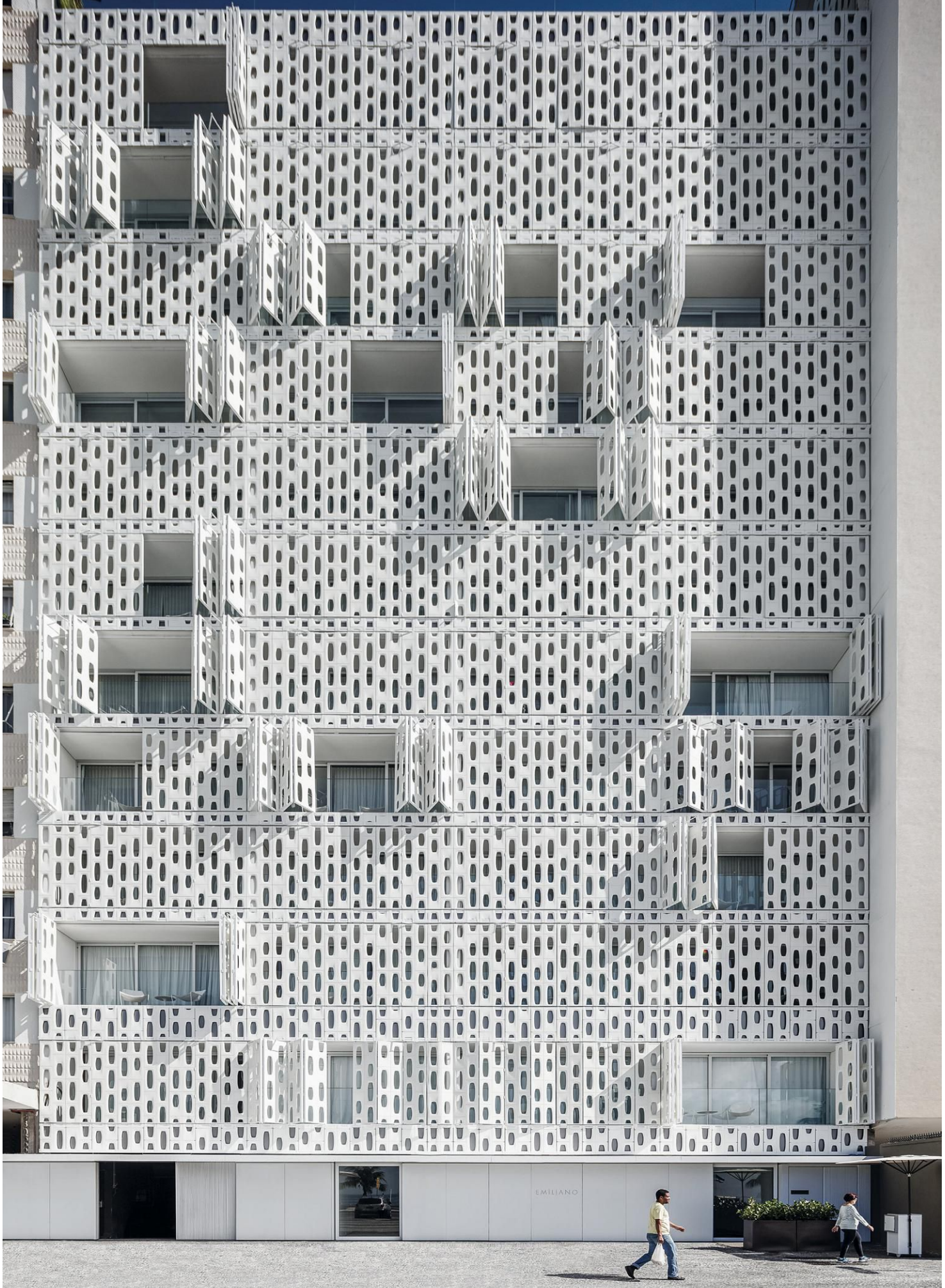
SOURCES

GLASS: Oldcastle
BuildingEnvelope

WINDOWS: Wausau; Winco

MASONRY: Summit Brick,
Lakewood Brick, Ragland Clay
Products

METAL: Benchmark Steel,
Euroclad (Millennium Tiles);
Coast to Coast Manufacturing
(steel storefront)



Emiliano | Rio de Janeiro | Studio Arthur Casas and Oppenheim Architecture

Cabana Carioca

A new hotel fills a gap on the Copacabana with its fresh take on Rio style.

BY TOM HENNIGAN

PHOTOGRAPHY BY FERNANDO GUERRA

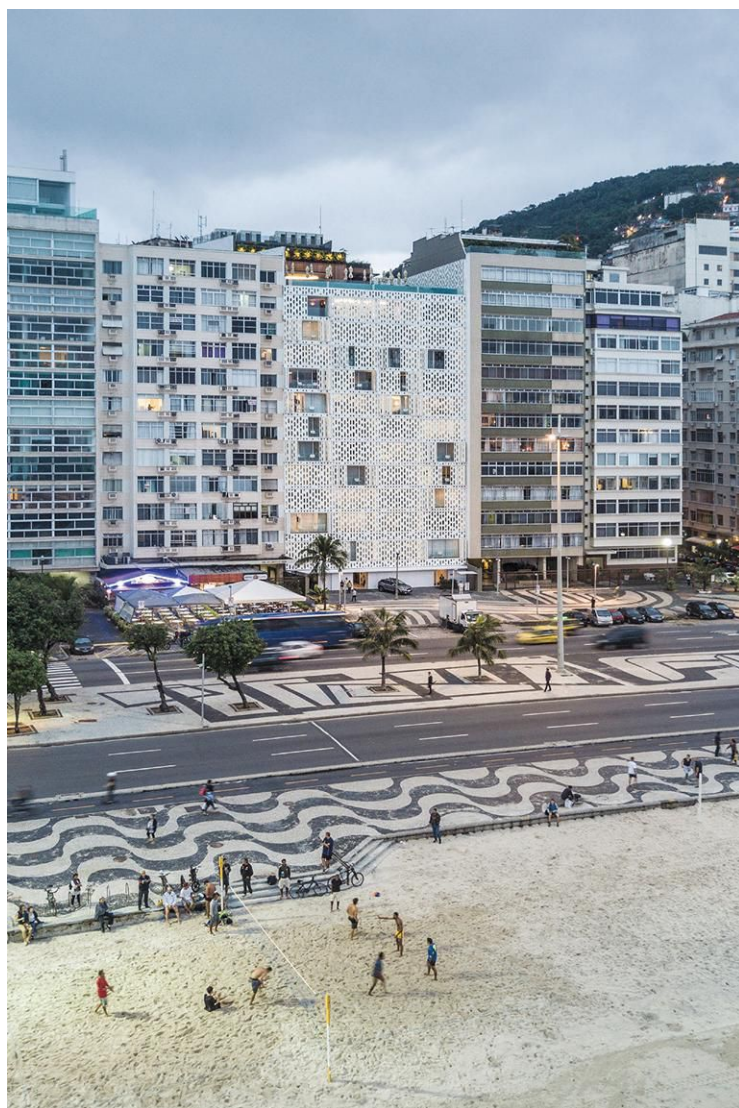
When Brazilian hotelier Gustavo Filgueiras, CEO of São Paulo's luxurious Emiliano hotel, and his family-owned company secured the opportunity to build on one of the last vacant lots along Rio de Janeiro's iconic Copacabana, they knew the property came with a responsibility to uphold the illustrious design pedigree of the beachfront (or *orla* in colloquial Portuguese). Artist and landscape architect Roberto Burle Marx's celebrated Promenade (1970)—a Unesco World Heritage site and pride of the city—stretches along the shore at its seaside entrance. Designed by São Paulo architect Arthur Casas and the U.S.-based Chad Oppenheim, the Filgueiras's second Emiliano hotel gives the Avenida Atlântica a stylish 21st-century flourish while simultaneously paying tribute to the neighborhood's mid-20th-century heyday.

Walking along the Burle Marx masterpiece, one is immediately drawn to the Emiliano's striking facade: a honeycombed resin screen inspired by the *cobogó*, a perforated, ceramic tile typical of many modernist Brazilian buildings of the 20th century. This dynamic elevation is made of white retractable panels that can be opened wide to reveal guest room balconies or closed for privacy, without denying occupants a sea breeze or stunning view.

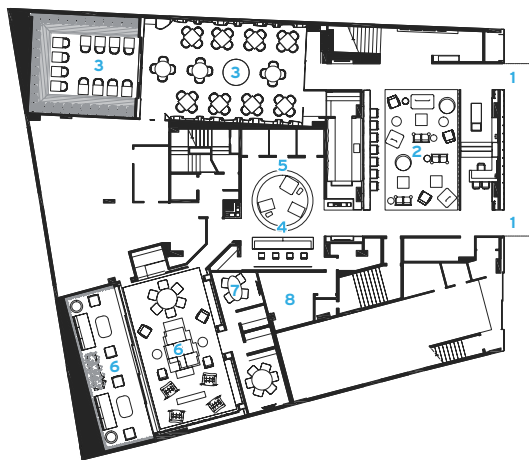
The effect distinguishes the building from the neighboring 1950s structures while sparking a dialogue with the black-and-white curvilinear pattern of Marx's stone paving. Indeed, the Emiliano appears to be a more harmonious addition to the area than the Diller Scofidio + Renfro Museum of Image and Sound under construction a few blocks up the beach, whose more aggressive interpretation of the famous promenade seems more difficult for locals to warm up to.

For the interiors, Casas sought to marry Rio's notorious devotion to informality with the young hotel group's growing reputation for sophistication. "I wanted something lighter, sunnier, more sensual," he explains. "A Carioca atmosphere that employs more organic elements, where the traveler arrives and feels immediately that they are in a Brazilian hotel." Here, too, Burle Marx sets the tone. An abstract panel by the artist—with swirls of green, yellow, and beige—provides a vibrant backdrop to the reception desk.

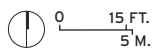
The experience is welcoming and social. Upon entering, one is drawn into the hotel's public bar, its unpolished Italian travertine surfaces recalling the white sands of the beach outside. To the right, the inviting restaurant features two dining areas: an anteroom lined with sculpted floor-to-ceiling freijo-wood panels and a rear skylit "garden" room,



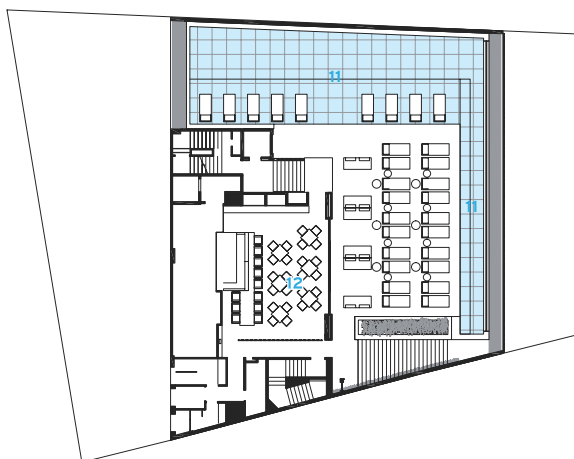
LOCAL FLAVOR Inspired by the perforated Brazilian *cobogó* tile, the facade of the Emiliano (opposite) gives the new hotel a distinctive presence along Copacabana's famed beachfront, or *orla* (above), which has a promenade designed by the legendary Roberto Burle Marx.



GROUND-FLOOR PLAN



TYPICAL GUEST-FLOOR PLAN



ROOF PLAN

- | | | |
|------------------------|------------------|---------------------------|
| 1 ENTRANCE | 5 ELEVATOR LOBBY | 10 SUITE |
| 2 LOBBY BAR/
LOUNGE | 6 GUEST LOUNGE | 11 POOL |
| 3 RESTAURANT | 7 MEETING ROOM | 12 ROOFTOP BAR/
LOUNGE |
| 4 RECEPTION | 8 OFFICE | |
| | 9 GUEST ROOM | |



BRAZILIAN BEAT The glass edge of the rooftop pool (above) complies with a city building code forbidding any edifice from casting shadows on Copacabana's beach. A Roberto Burle Marx panel hangs behind the reception desk (opposite, top left). The lobby bar (opposite, top right) features a mix of contemporary and Modernist furniture. The restaurant opens to a skylit garden room (opposite, bottom).

credits

ARCHITECTS: Studio Arthur Casas
– Arthur Casas, principal; Oppenheim
Architecture – Chad Oppenheim, principal
ENGINEERS: AS Brasil (structural); AQ
Projetos (m/e)
CONSULTANTS: Renata Tilli (landscape)
GENERAL CONTRACTOR:
Sig Engenharia
CLIENT: Emiliano Hotel
OWNER: Gustavo Filgueiras
SIZE: 105,000 square feet
COST: withheld
COMPLETION DATE: July 2017

SOURCES

FACADE: Clamom; Hunter Douglas;
N2 Projeto
AIR-CONDITIONING: Daikin
AUTOMATION: Casa do Futuro
CARPET: Avanti
FURNITURE: Knoll; Poliform; Arquivo
Vivo; Peroba Rosada





SECOND NATURE Organic materials prevail throughout, such as sculpted wood panels by the elevators (left) and rough fabric panels above guest beds (bottom). Inspired by Brazil's Modernist tradition, the honey-combed facade (opposite) provides guests with the option of privacy without losing the sea view or breeze.

wrapped by a double-height living wall that recreates the tropical experience of Rio's lushly forested mountains. Adjacent to the restaurant and opposite the hotel entrance, a staircase provides direct access to a second-floor business center and function rooms.

Beyond the bar, the reception desk leads to a private guest lounge. Similar to the restaurant, this intimate area comprises a front room with distinctive backlit three-dimensional wooden panels that impart a soft, muted ambience fitting for this inner sanctuary's location, away from the beachfront bustle. It also opens to a skylit indoor terrace lined with a living wall.

A unifying element throughout these spaces and the hotel's 90 bedrooms is the imaginative choice of furniture. Modernist masterpieces by Rio native Sérgio Rodrigues and his Brazil-based Italian contemporary Lina Bo Bardi infuse the hotel with the spirit of the city's golden years that Filgueiras and his family were eager to evoke. These are complemented by contemporary pieces by Italian designer Paola Lenti and by Casas himself.

The guest rooms are infused with rustic beige tones and textured fabric paneling, which provide an organic sensuality. Rear-facing rooms each have a fixed external canvas sun blind that allows for plenty of daylight and fresh air but shields guests from neighboring buildings around this tight urban site.

The views, as always, are at their most spectacular at the top. Here you will find the spa—clad in unpolished black granite, a refuge from the equatorial heat outside—and, one flight up, a rooftop bar and L-shaped pool. Designed to comply with codes that prohibit casting a shadow on the beach, the pool has a vertigo-defying glass wall that aligns with the hotel's roofline. From this vantage point, guests can swim or float and drink in a panorama that sweeps from Sugarloaf Mountain right along the bay to the historic Copacabana Fort.

"The spectacle here is the *orla* itself," says Casas modestly. But with this beautifully executed project, expect to find many strollers along the promenade stopping to take in Copacabana's newest marvel. ■

Tom Hennigan is the South America correspondent for The Irish Times, based in São Paulo.







Casa Fantini | Pella, Italy | Lissoni Architettura

Top of the Lake

A quiet hotel is designed for the romantic views.

BY SUZANNE STEPHENS

PHOTOGRAPHY BY GIOVANNI GASTEL

A discreet 11-room boutique hotel in the tiny village of Pella (population 1,000) on the serenely beautiful Lake Orta, north of Milan, may look unassuming. Yet Casa Fantini—where a protected white-stuccoed house, over 200 years old, has been melded sympathetically to a new three-story concrete-framed bar-shaped structure—is a catalyst in the regeneration of this picturesque enclave, home to Fratelli Fantini, manufacturers of high-design bathroom fixtures. When the CEO Daniela Fantini took over the company after her father's death in 1990, there was no place for business guests to stay in the village or many touristic amenities. Fantini decided to change that, with a hotel that accommodated both business-related visitors and vacationing guests. “The main landmark in the town has been an ice cream shop located in a historical tower,” she says. “Our hotel will give added value and attract

more tourism. We live in a beautiful place—it influences the design of Fantini products. We wanted to express that in the hotel as well.”

Logically, she turned to the creative force behind some of the company's products, plus its graphics and branding—Piero Lissoni, who is also an architect and has designed a number of striking hotels, such as the recently opened Mamilla in Jerusalem. Lissoni's guiding principle was that the architecture needed to be both new and elegant, like Fantini products, but defer to the historic character of the town, enhancing its idyllic lakeside setting.

A strong sense of place stems from the location: the property commands entrancing views across the lake to the better-known town of Orta San Giulia (population 1,200) with its assortment of medieval, Renaissance, and Baroque architecture. Casa Fantini also looks out to the Isola San Giulio in the middle of the lake—which, in any sweepstakes for “most picturesque,” would have to come out on top—dominated by the Romanesque tower



of the Basilica di San Giulio and an 1840s Benedictine abbey for nuns.

Lissoni happily took on the renovation and expansion of the old house and the construction of a new wing where some less prized buildings previously stood. While on its own,

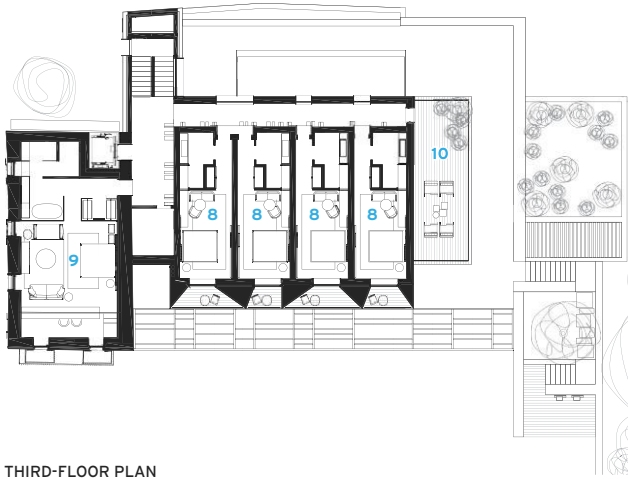


designing two levels of guest rooms above a ground-floor lobby, dining room, and separate bar may not seem to be a sizable commission, Lissoni embarked at the same time on remodeling and redesigning the neighboring low-rise Fantini factory. The crisply defined spaces are

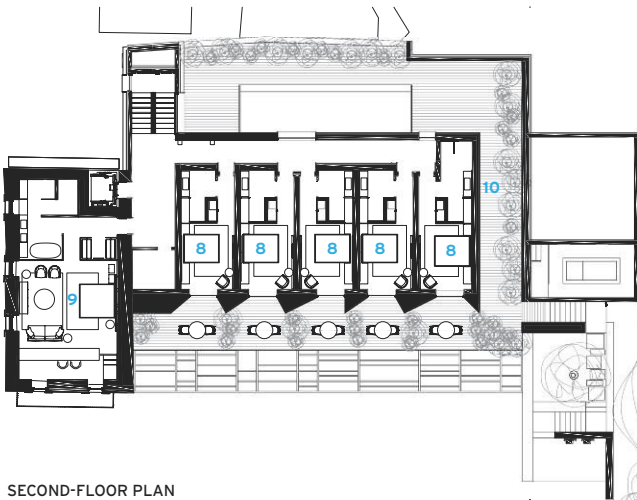
now nearing completion.

With the 12,200-square-foot hotel, Lissoni obviously wanted to capitalize on the view and introduce ample daylight to its interiors. But also important to the architect was integrating a sense of history with modernity in

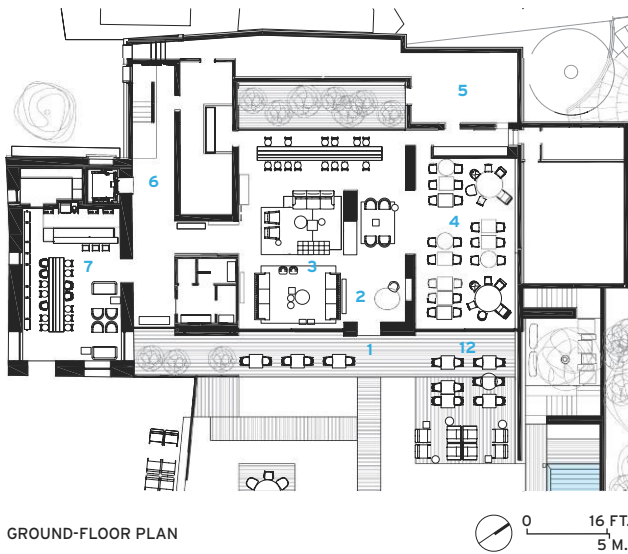
LUXE LIFE In designing the hotel, Lissoni Architettura joined an old building to a newly built bar-shaped structure (opposite). The new wing overlooks a garden (above) where stone walls create outdoor rooms, including one for the pool. The entrance is almost unnoticeable behind the garden and the overhang.



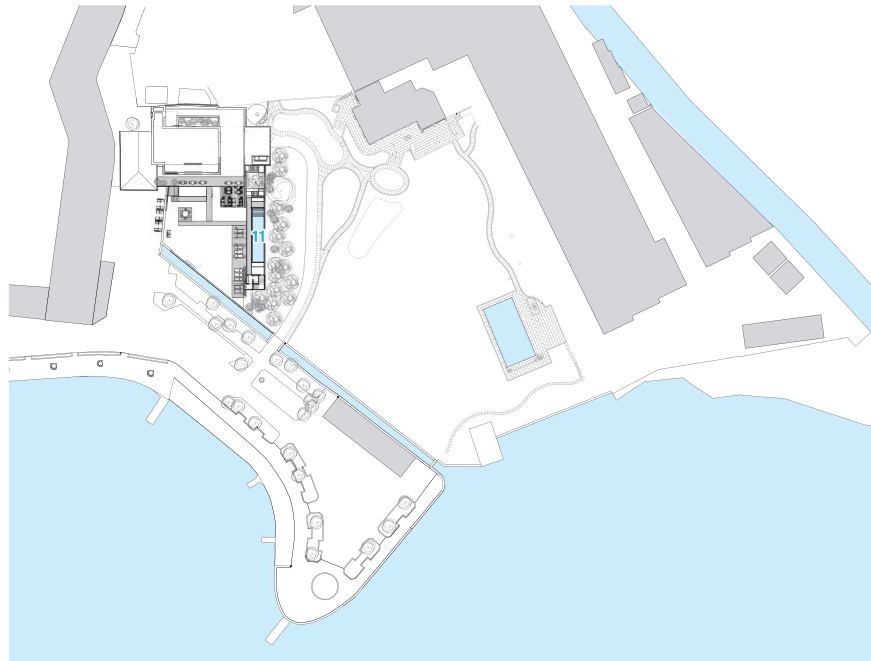
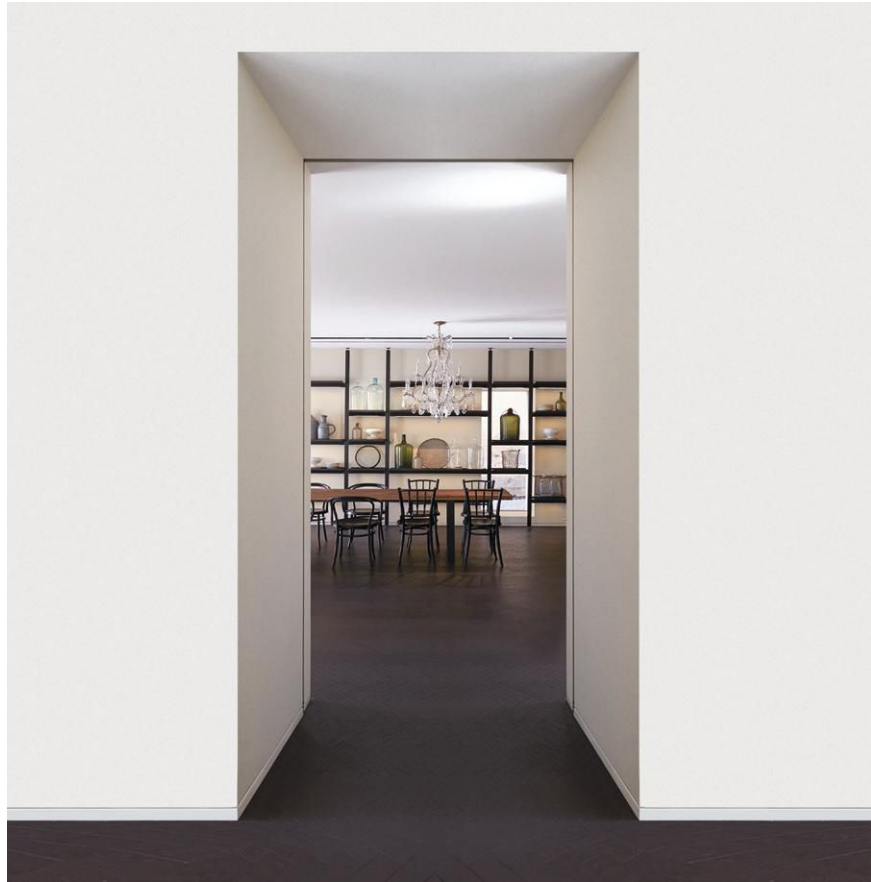
THIRD-FLOOR PLAN



SECOND-FLOOR PLAN



GROUND-FLOOR PLAN



SITE PLAN

- | | | |
|---------------|--------------|------------------|
| 1 ENTRANCE | 5 KITCHEN | 9 GUEST SUITE |
| 2 RECEPTION | 6 STAIR LINK | 10 UPPER TERRACE |
| 3 LOBBY | 7 BAR | 11 POOL |
| 4 DINING ROOM | 8 GUEST ROOM | 12 CAFÉ TERRACE |



HOME STYLE A variety of furniture styles and artifacts prevails in the lobby to give it the look of a living room. One sitting area (above) overlooks a garden and Lake Orta; the other (right) is backed by a glass-and-stone light well. A black metal and glass fireplace separates the room from the entry vestibule. A passageway frames a glimpse of the bar in the old house (opposite).

the solution. “We try to reflect a special sensibility that relies on a sophisticated memory,” says Lissoni, who intends to create the aura of the past rather than just imitate it. He mixed new and old in his employment of natural materials and craftsmanship, on the one hand, and the use of modern construction techniques and precision detailing on the other, throughout the building and its interiors.

With the structure, Lissoni kept the concrete floor slabs very thin and cantilevered them to support and shade the guest room balconies. Inside, the concrete bearing walls are placed on the ground floor so that they appear more like partitions within a flowing open space than a squadron of piers—an arrangement that also helps with earthquake stabilization, Lissoni says.

As for the exterior cladding, Lissoni chose a local accoya wood with a dark-hued, textured surface. The process for finishing the wood



sounds like a recipe from *The Alice B. Toklas Cookbook*: the accoya is steeped in vinegar, burned, cleaned with brushes, and specially cut to create a refined version of vertical boards and battens with a pattern of horizontal striations. The effect is stunning. Local

fieldstone walls enclose and define various spaces in a cadenced rhythm; they form outdoor rooms around the lushly planted gardens and the pool, exemplifying the mastery of the local masons.

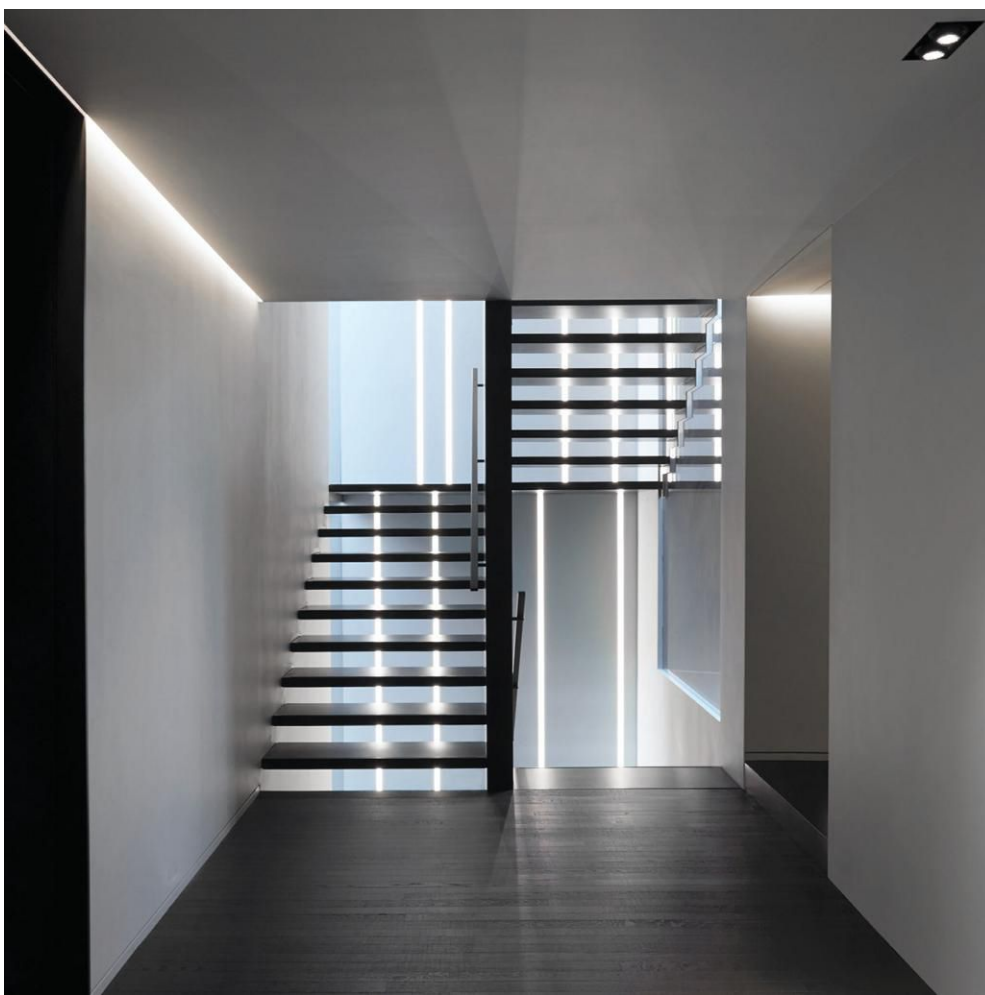
While the bar is open to the general public,



CALM AND COOL A simple but luxurious suite occupies an upper floor of the house (above). The backlit open-riser steel stair (right) dramatizes the link between the old and new structures. The front of the hotel, with its verdant landscaping (opposite) captures a view of Isola San Giulio in the middle of the lake, with its monastery.

the small dining room is reserved for those staying at Casa Fantini. In order to separate the public from the private, hotel guests enter through a gate at one end of a stone wall and walk into a luxuriant garden before coming to an understated entrance. Once inside, they find themselves in a domestically scaled pavilion open to nature: glass walls overlook the front garden and, at the back, floor-to-ceiling glazing reveals a light well with plantings, edged by a stone wall.

The interior's coolly minimal white plaster walls and ceilings are warmed by ebonized wood floors, carpets, and a combination of sleek and rustic furniture: farmhouse tables alternate with glass-and-steel ones in the dining room; comfortable upholstered sofas and chairs are mixed with pieces by Eames, Sottsass, Saarinen, and Castiglione. "I like the contamination between different elements, so you don't feel as if you are living inside a stupid catalogue," Lissoni says. Similarly, the





public Blu Lago bar is a crisply modern space where a plain wood refectory table sits under a gracefully dramatic 1940s copy of an 18th-century Austrian chandelier.

White plaster walls throughout the public and private areas are often unadorned except for such quirky additions as a stretch of peeling shutters (also white) mounted above the beds in the guest rooms. Elsewhere, shelving and tables contain intriguing found objects such as pots, bottles, sculptures, and other artifacts, arranged and selected by Lissoni's consultant Elisa Ossino Studio. The effect is deliberately uncluttered: nothing distracts from the serenity of the environment.

With the guest rooms, the view is also everything: a single-loaded floor plan allows the nine narrow rooms on two upper floors of the new wing to face the front garden and the lake. Lissoni wrapped the bathrooms and closets at the back of each guest room in dark

blue glass that subtly reflects the view of the water. The architects also gutted the older house to make room for two suites, one per floor, which take in the full waterside panorama, also reflected in the dark blue glass enclosing the interior spaces.

Fantini describes the feeling that the hotel strives to attain for its guests as "lake time," where "you come to contemplate, read, draw, relax." She herself seems to be on Milan and New York time (where the Fantini company has showrooms) but is always paying close attention to detail, to create a palpably soothing domestic atmosphere here in Pella. Her architect's mix of old and new, outward warmth and underlying rigor, bolsters her vision. Fantini has provided the town with a worthy landmark that seamlessly interweaves impeccable and sensitive architecture, interior design, and landscaping to enrich the charm of this lakeside settlement. ■

credits

ARCHITECT: Lissoni Architettura – Piero Lissoni, principal; Samuel Lorenzi, Paolo Volpato, Fabrizia Bazzana, Ricardo Hernandez, architects; Ilia d'Emilio, Roberto Berticelli, Marco Guerini, team

INTERIOR STYLING: Elisa Ossino Studio

CONSULTANT: Giardini Paghera (landscape)

CLIENT: Daniela Fantini, Fratelli Fantini

OWNER: Blu Lago

COMPLETION DATE: August 2017

SOURCES

ACCOYA WOOD: Imola Legno

METAL WINDOWS: Secco Sistemi

SLIDING DOORS: Sky-Frame

FLOOR AND WALL TILE: Kerakoll

LIGHTING: Flos

BATHROOM FIXTURES: Fantini



The Murray | Hong Kong | Foster + Partners

A Golden Intervention

A nearly 50-year-old tower is reimagined for a thriving city and its well-heeled visitors.

BY ARIC CHEN

PHOTOGRAPHY BY MICHAEL WEBER

Built for the Public Works Department and other Hong Kong government offices, the Murray Building stood out for its height—a then-towering 27 stories—and the sculptural grid of its facades when it opened in 1969. Designed by British-born government architect Ron Phillips, the building was an elegantly robust concrete block lifted on arches, prominently sited in the Central district at the foot of the slopes leading up to the city's famed Peak. It was as much a Modernist icon as Hong Kong ever produced.

But late last year, this relic of a bygone era was recast in the image of our current age—as a 336-room luxury hotel called the Murray. The renovation, led by Colin Ward and Armstrong Yakubu of Foster + Partners, remakes the building with all the luxed-up finishes the hotel's upscale clientele might expect. But it also deftly corrects some of the original building's shortcomings, in ways that give something back to the city as well.

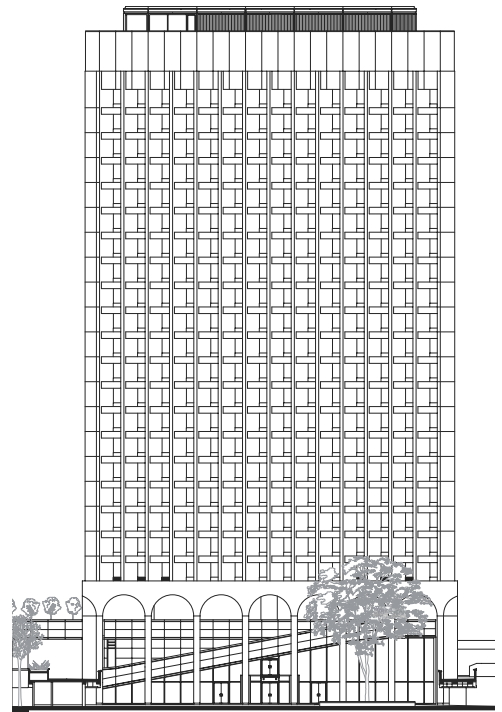
True to its time, the 1969 structure embodied conflicting notions of progress. On the one hand, its powerful facade of deeply recessed windows, oriented at 45 degrees to minimize solar gain, argued for passive cooling in a subtropical city that has since become a thicket of hermetically sealed, air-conditioned glass towers.

But another prominent design feature—a car ramp—celebrated the primacy of the automobile, dramatically snaking around the building's core from behind its arcades. The ramp inventively connected the project to the tangle of roads around it while resolving the site's steeply pitched grade—yet cut the building off from pedestrians and, paradoxically, the street.

The architects were sympathetic to Phillips's work, going so far as to consult their



THE HIGH ROAD The Murray Hotel occupies the 1969 Murray Building, where a former parking lot deck has been opened up to reveal a new plaza (opposite), with a 120-year-old cotton tree. Built for government offices, the concrete structure is on a prominent sloping site in Hong Kong's Central district (above).



EAST ELEVATION: ENTRANCE AND CAR DROP-OFF

predecessor on the redesign. “We gave him a red marker, and he went at it,” Ward says jokingly of Phillips who, at 90, lives in the United Kingdom and “remains an impassioned Modernist.” Still, there’s always room for improvement, and the conversion presented an opportunity to make what was once fortresslike more open to the city.

To begin with, Ward and his colleagues carved out a new entrance. Arriving at the hotel’s lobby and bar on the ground floor, one has little sense that it’s “sort of a found space,” Ward says. “It was back-of-house, plant rooms, buckets, mops, worn-out typewriters—you name it, it was stored there.”

Clad in white Calcutta and black marble, and screened in golden extruded-metal fins, the now generously glazed lobby shows off the kind of ruthless chic that Foster + Partners is known for. But it also opens the building toward the street, with a new plaza that creates much-needed public space. Meanwhile, the lobby soars to double-height from beneath the former car ramp, which has been repurposed as an ample pedestrian walkway, offering De Chiricoesque views from behind the building’s arches as it winds its way up in the direction of a new outdoor event space.

With its restaurants, the mezzanine level—which, due to the sloping site, also serves as an upper ground floor and secondary lobby—further strengthens the building’s links with its site. Just outside, what was once a parking lot



RAMPED UP The building’s windows were oriented at 45 degrees to minimize solar gain (top). A former car ramp has been repurposed as a pedestrian walkway, which snakes behind the building’s arches (above). The hotel’s new entrance and lobby (opposite) were carved out of a “found space” beneath this feature.



deck (“a sea of cars,” Ward recalls) has been pulled back and transformed into black-granite-paved terraces that open to the new plaza area below. The move also liberated a protected 120-year-old cotton tree, which had long suffered the indignity of having to poke through a hole in the deck. “It was being strangled,” Ward says.

The end result is a series of interlocking outdoor spaces on multiple levels, linked by bridges, stairs, and ramps, that begins to stitch together the site’s complex topography with that of its neighbors, which include Hong Kong Park, the 1849 St. John’s Cathedral, and, a stone’s throw away, I.M. Pei’s Bank of China tower and Foster’s iconic HSBC building. Indeed, what was once an impenetrable block now acts as an intimate nexus of urban space, “a completely public walk-through that we hope becomes part of the mind map of the city,” Ward says.

Just as urbanistic, though perhaps not as public, is the firm’s rejiggering of the building’s roof. The architects convinced the client, Wharf Holdings—a large Hong Kong developer not previously known for extravagance—to move the mechanical plant, at great cost, from

credits

ARCHITECT: Foster + Partners – Norman Foster, principal; Armstrong Yakubu, Colin Ward, project architects

ARCHITECT OF RECORD: Wong & Ouyang (HK)

ENGINEER: Wong & Ouyang (structural, mechanical)

CONSULTANTS: Inhabit (facade); Tino Kwan (lighting); Rider Levett Bucknell (cost); Urbis (landscape); Campbell Shillinglaw Lau (acoustics)

GENERAL CONTRACTOR: Gammon Engineering & Construction

CLIENT: The Murray Limited

SIZE: 363,300 square feet

COST: withheld

COMPLETION DATE: December 2017

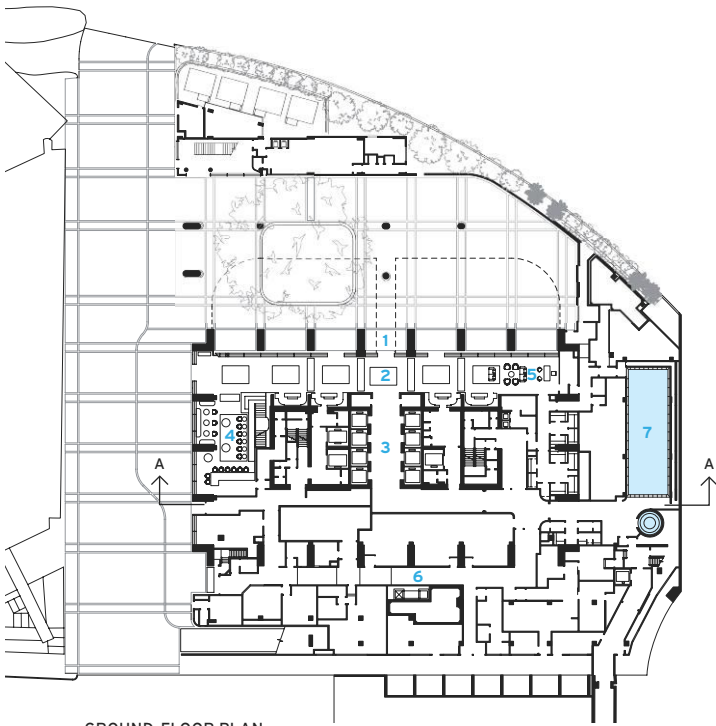
SOURCES

STAINLESS STEEL: Tsukiboshi Art; Chiling Architectural Metal (platinum-gold vibration finish)

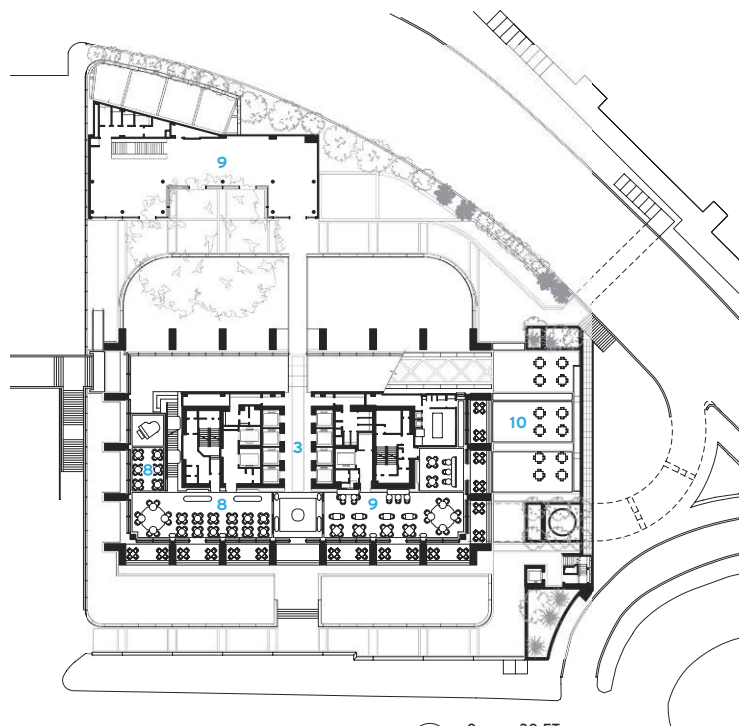
CEILING: Philips (luminous)

LIGHTING: Lutron (controls); Louis Poulsen; FLOS; Lasvit; Fabbian; Artemide; ModuleX; Iguzzini

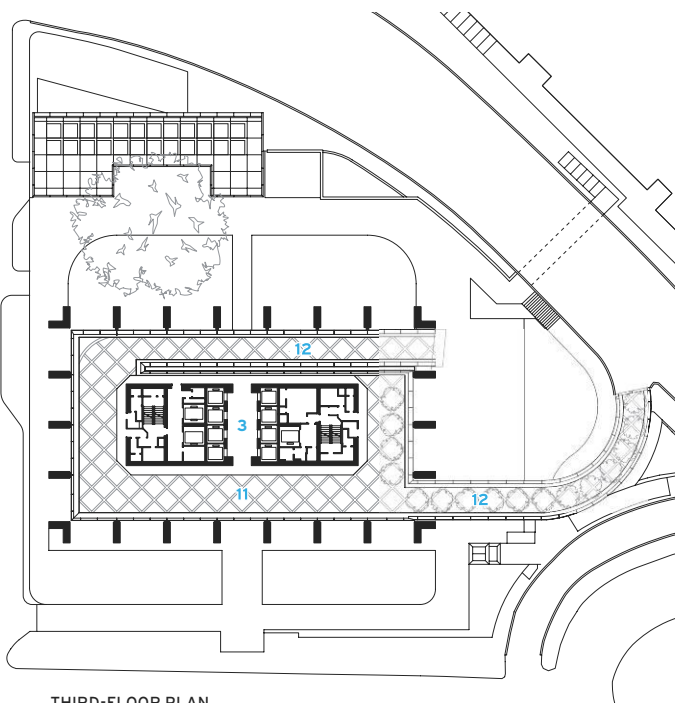
FURNISHINGS: Permeesteelisa HK; Knoll; Fritz Hansen; Poltrona Frau; Poliform; Minotti; Porada, Molteni; AgapeCasa; Alma Leather; COR



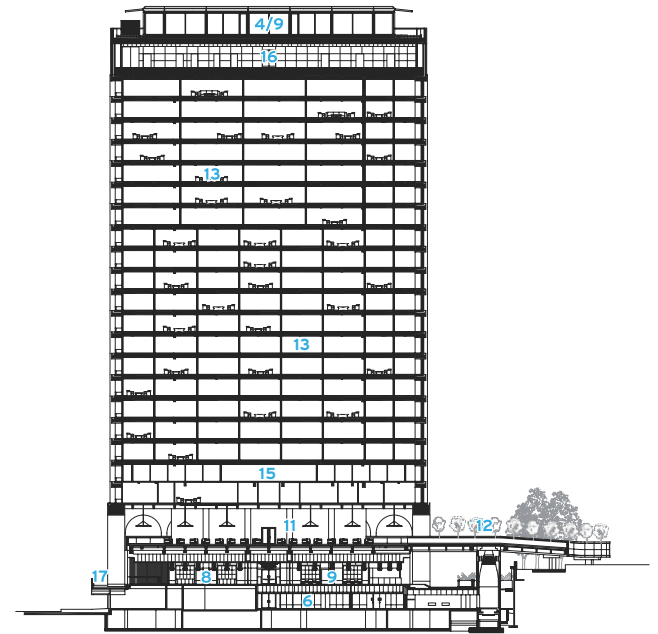
GROUND-FLOOR PLAN



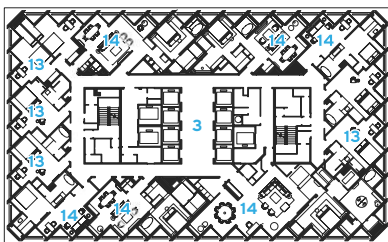
MEZZANINE-LEVEL PLAN



THIRD-FLOOR PLAN



SECTION A - A



GUEST-ROOM FLOOR PLAN

- | | | |
|---------------------|-----------------|----------------|
| 1 ENTRANCE/DROP-OFF | 7 POOL | 13 GUEST ROOM |
| 2 LOBBY/CHECK-IN | 8 LOUNGE | 14 GUEST SUITE |
| 3 ELEVATOR LOBBY | 9 RESTAURANT | 15 SPA/GYM |
| 4 BAR | 10 OUTDOOR DECK | 16 BALLROOM |
| 5 OFFICE | 11 EVENT SPACE | 17 TERRACE |
| 6 BACK OF HOUSE | 12 RAMP | |



VIEW FINDERS A restaurant on the mezzanine level looks onto new terraces and landscaping (above). The hotel's rooms (right) were configured to accommodate the building's 45-degree sawtooth perimeter.

atop the building to a new pavilion at ground level, in order to make room for a rooftop restaurant and bar with near wraparound views of the city.

But perhaps the renovation's key design decision was also the most obvious. Early on, Ward was unsure how the hotel rooms would be configured, given the 45-degree sawtooth of the building's perimeter. The solution was simply to orient the rooms at the same angle. "Silly as it sounds, that was the Eureka moment," Ward says. "We understood the building now. We'd work with it, and not fight it." ■

Aric Chen is a frequent contributor to ARCHITECTURAL RECORD and lead curator for design and architecture at M+, a new museum for visual culture under construction in Hong Kong.



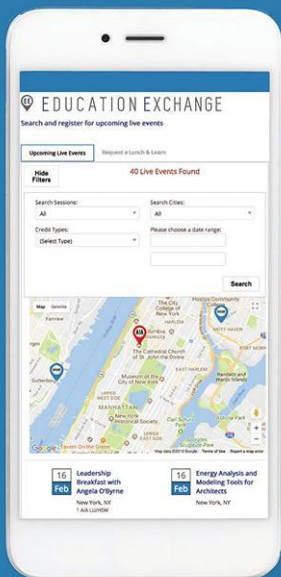


EDUCATION EXCHANGE



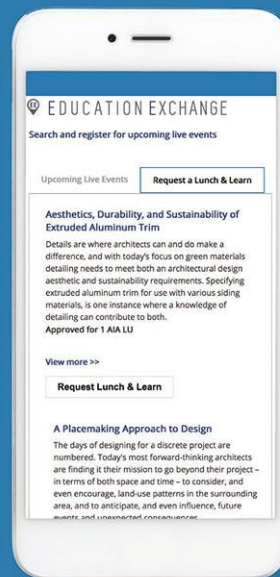
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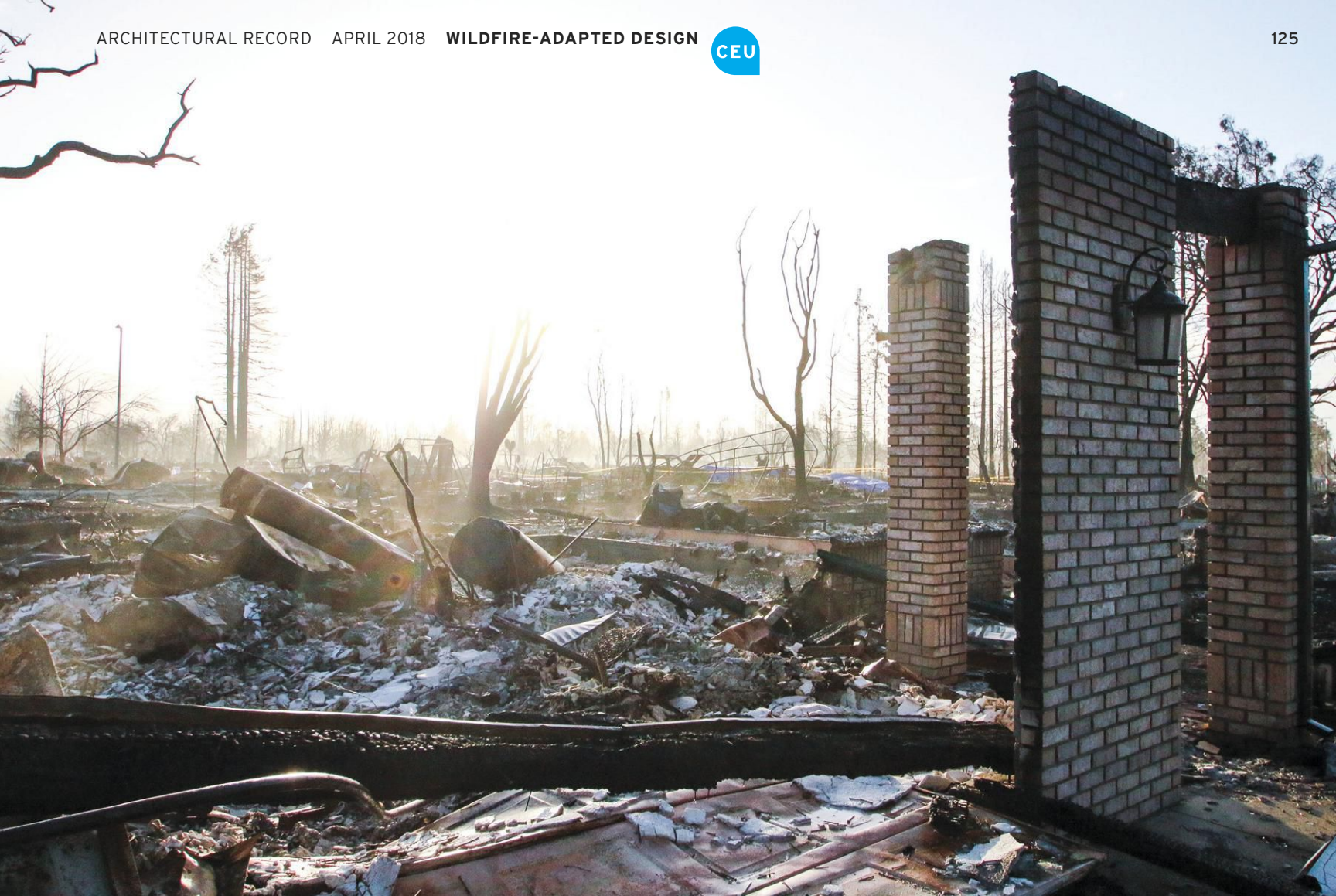
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Out of the Ashes

Architects rethink residential design strategies in the wake of last year's destructive California wildfires.

By Joann Gonchar, FAIA

BY NOW the stats are well known, but still horrifying: 2017 was a devastating year in terms of wildfires across the U.S. Nationwide, more than 10 million acres burned, and a record \$2.9 billion was spent on trying to control and extinguish the blazes. California suffered an especially catastrophic season, with a series of wildfires tearing across the state, including the Tubbs Fire—the most destructive in its history. It ripped through the wine country north of San Francisco in October, scorching almost 37,000 acres, destroying more than 5,600 properties, and killing 22 people. A new series of fires ignited parts of Southern California in December. The largest was the Thomas Fire, which charred

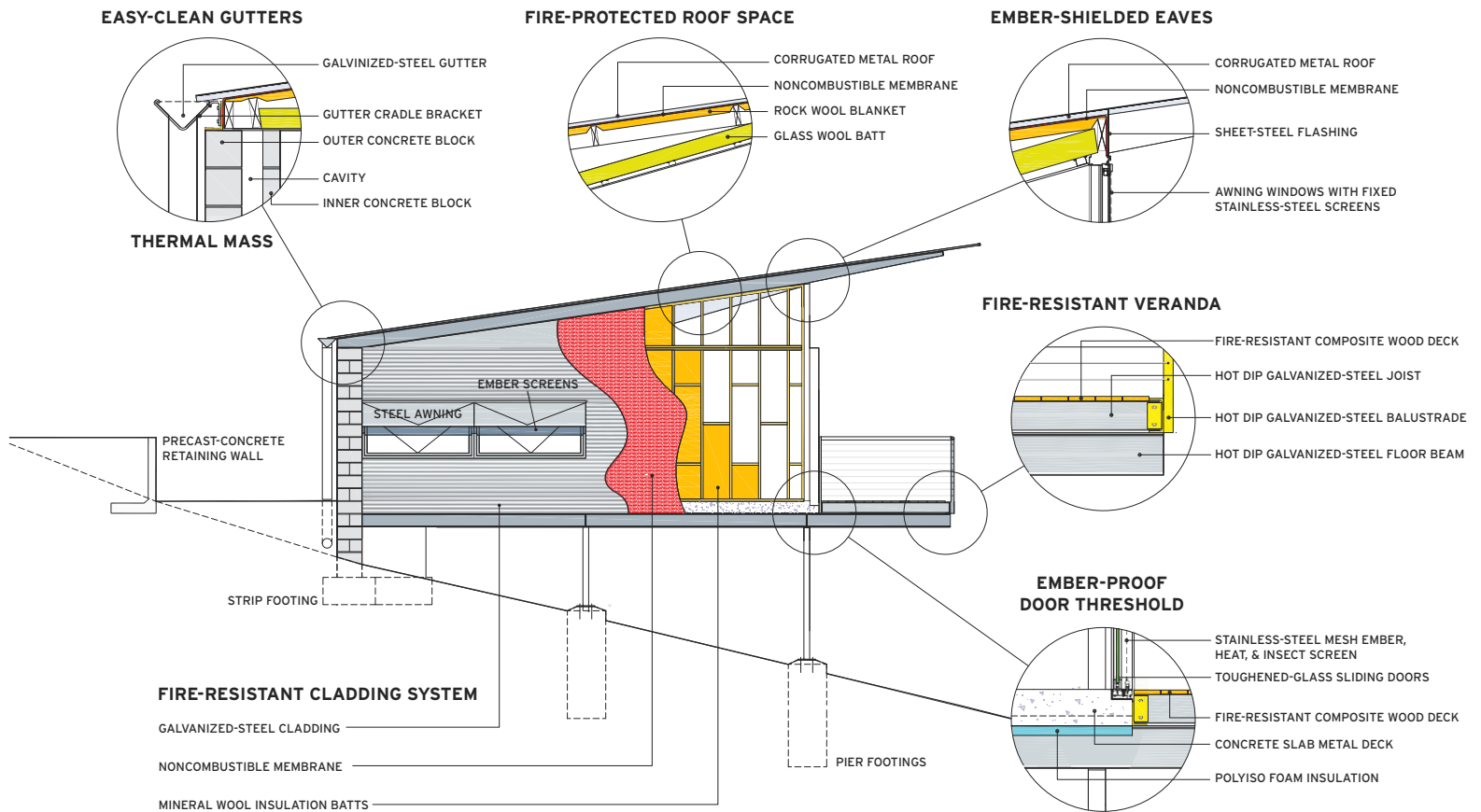
more than 280,000 acres in Santa Barbara and Ventura counties, destroying about 1,000 structures, and killing a civilian and a firefighter. It was tragically followed by a series of powerful mudslides that killed more than 20 people.

The factors that contribute to intense and destructive wildfires are complex and inter-related. They include land-use and zoning policies, woodland-management and fire-suppression practices, and the weather. In 2017, Mother Nature provided the “perfect ingredients” for the fires that would ravage California late in the year, explains Park Williams, a research professor at Columbia University’s Lamont-Doherty Earth Observ-

WAR ZONE The Tubbs Fire ripped through parts of Northern California in October. One neighborhood that was hit particularly hard was Coffey Park in Santa Rosa, where 1,500 homes were destroyed.

atory in Palisades, New York. Although the ample precipitation in the winter essentially ended the state’s five-year drought, it also allowed grasses and other plant life to thrive. The record-breaking hot temperatures that followed meant that abundant dry and fire-prone vegetation was available to fuel the fires. And once they started, they were fanned in northern California by the Diablo winds and in the southern part of the state by the Santa Ana, which typically kick in just as rainy season starts. But the onset of the rains came later than usual, so there was no relief against the tinderbox conditions that caused the flames to spread out of control.

While scientists caution that no individual weather event or single disastrous season can be attributed to climate change, experts do see the imprint of global warming on wildfire activity. An investigation by Williams and John Abatzoglou, an associate professor in the Department of Geography at the University of



KARRI FIRE HOUSE'S FIRE-RESISTANT STRATEGIES



Idaho, shows that human-induced climate change nearly doubled the area affected by forest fires in the American West over the past three decades. Their study, published in the *Proceedings of the National Academy of Sciences*, analyzed satellite data according to eight different metrics, concluding that anthropogenic climate change was responsible for an additional 16,000 square miles of forest fire area between 1984 and 2015.

Many California architects now believe that catastrophic wildfires may well represent the new normal. Last season's blazes "weren't an anomaly; they are a sign of what's to come," says Brandon Jorgensen, a Napa-based designer. He has assembled a group of Bay Area practitioners to propose solutions for building in fire-prone areas. In addition to organizing an exhibit slated for next fall in Napa, the team plans to examine the state's Wildland-Urban Interface (WUI) regulations—guidelines intended to protect life and property where wildfire risk is high—and then recommend changes to code officials.

Some of the region's architects are focused on rebuilding as quickly as possible. Julia Donoho, chair of the AIA Redwood Empire's



TREEHOUSE The Karri Fire House is built to the second-highest of six levels of resilience specified by Australian code. Its entry facade (opposite) is largely masonry, but the eastern elevation (above) opens to views of the surrounding eucalyptus forest.

Firestorm Committee and an attorney as well as an architect, is advocating a “whole neighborhood” reconstruction effort that would coordinate contractors and homeowners in certain areas in an attempt to rebuild en masse and expedite reconstruction. She says that 10 builders are interested in such an approach for Coffey Park—an especially hard-hit development in Santa Rosa. A group-reconstruction process is moving forward in another Santa Rosa development, the Mark West Estates, where one contractor is building about 80 houses.

As the rebuilding effort gets off the ground, other architects are putting forward ideas to bring life to devastated neighborhoods. For instance, Byron Kuth and Elizabeth Ranieri, principals of the San Francisco firm Kuth Ranieri, propose small popup shelters that could be distributed throughout a neighborhood and offer shade, cell phone charging powered by rooftop photovoltaic panels (PVs),

and a place where homeowners could meet with their contractor or architect. They are also proponents of easing restrictions on accessory dwelling units—often referred to derisively as mother-in-law apartments. Such structures, which many jurisdictions have frowned upon because they increase density, could allow homeowners to rebuild in phases, serving first as their short-term housing before being turned into a home office or a rental apartment.

As design teams start to develop long-term solutions, they will need to consider vegetation along with structure. “Almost every bit of landscape acts as a fuel,” warns Stephanie Landregan, the former chief landscape architect of the Mountains Recreation & Conservation Authority, an agency dedicated to the preservation of open space and parkland in and around Los Angeles. Among her recommended strategies are a defensible space around buildings, use of water-retaining plants such as succulents, and avoidance of branches that overhang the roof.

But before building or planting anything in a fire-ravaged landscape, project teams will have to prepare the land, including stabilizing

sites and grading. These operations can help prevent catastrophic events like the mudslides that occurred in the immediate aftermath of the Thomas Fire. The procedures can provide important safeguards against more insidious erosion and runoff collecting in storm drains and polluting rivers and streams. In California, the Army Corps of Engineers has removed much of the scorched debris and ash, which contain heavy metals and other toxins. However, runoff from exposed slopes denuded of vegetation, and the sediment it carries with it, still poses a threat to aquatic ecosystems, according to Jessica Pollitz, a project manager in the Petaluma office of civil consultants Sherwood Design Engineers. (Her firm is working on several post-fire residential projects in the north Bay Area, including one with Kuth Ranieri). In some cases the charred soil can become hydrophobic, further hindering infiltration and exacerbating the problem, she points out.

Architects involved in the recovery effort and looking for fire-resistant precedents can be found elsewhere, not just in California, or the United States. One designer who created his practice around wildfire design is Ian



RUGGED REFUGE A house atop a promontory in Montecito, California, has garage-style doors that can be rolled down to protect its glazed facades. The swimming pool water can be used for firefighting if necessary.

Weir, an architect and landscape architect based in Brisbane, Australia. He advises that anyone building in areas prone to wildfires (or bushfires, as they are known there) prioritize fire-resilient construction strategies over site clearing and management of surrounding vegetation. It isn't practical to assume that such landscape maintenance activities will be performed in perpetuity, he says.

An illustration of this principle is the Karri Fire House, completed in 2014 within a mature eucalyptus forest outside the town of Denmark in western Australia. The bar-shaped, three-bedroom residence for a firefighter and his family, designed in collaboration with Queensland-based architect Kylie Feher, has one masonry wall but is otherwise supported by a shop-fabricated steel frame that cantilevers over the steeply sloping site. Galvanized cladding, intended to reflect the radiant heat of a bushfire, covers the roof and three facades. Underneath is a noncombustible fabric membrane similar to that used in firefighting apparel.

Many of the house's features perform dou-

ble, even triple duty, helping conserve energy and improve comfort, in addition to maximizing fire resistance. For instance, the masonry wall—which incorporates a fireproof cavity—along with the suspended concrete floor, provides thermal mass to help modulate indoor temperature. Metal screens can be rolled down over the east-facing facade, which consists of sliding glass doors. These can be used on a daily basis to shield the interior from heat gain and glare from the intense afternoon sun, as well as keep out insects while letting the breezes in. They can also be lowered during periods of fire risk to protect the glazing, since glass tends to be the part of a building most vulnerable to fire.

Similar strategies are evident in a 3,100-square-foot, three-bedroom California residence built a decade ago on a promontory high above Montecito. Designed by architect Tom Kundig, principal of Seattle-based Olson Kundig, the muscular building is in tune with its rugged, high fire-risk setting. Built for a retired couple and now owned by a family whose primary residence is on the East Coast, it has a steel structure, weathering steel cladding, an overhanging steel roof and operable, perforated rolling coil garage-style doors. The latter perform much the same way as the screens in

the Australian house, protecting the expansive windows that offer stellar bay views. With the aid of a submersible pump, the pool water could be used for firefighting if necessary.

The house survived last December's wildfires and the ensuing mudslides unscathed (the fire came within a quarter of a mile of the property). But Kundig is careful not to oversell its capabilities: "It is virtually impossible to design a fire-proof house" or, at least, one you would want to live in, he says. "Our guiding principle was not to provide fuel for the fire."

Much the same philosophy seems to be behind a house that Palo Alto-based Field Architecture is working on near Healdsburg, in Sonoma County. Although the site did not burn, wildfire resistance has now "been taken on as an explicit objective for all our projects in areas where fire is part of the cycle," says firm principal Jess Field. Conceived as a series of pavilions, the scheme creates defensible space around the collection of structures with a noncombustible paved area. To prevent embers from accumulating, the individual volumes have a metal skin that folds, wrapping their roofs and wall planes to meet a masonry base. The design also eliminates openings that could permit embers to pen-

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HEALDSBURG HOUSE FIRE-RESISTANT STRATEGIES

1 SITE PLANNING

Structures are sited away from the natural convective draw of ravines and concave landforms.

2 LANDSCAPE INTERFACE

Defensible space is preserved with a noncombustible border at the base of structures.

3 BASE

Noncombustible materials at the intersection of ground and wall planes prevent debris accumulation.

4 RESISTANT ASSEMBLY

Vented soffits and unsealed mechanical spaces are eliminated to prevent ember intrusion.

5 GEOMETRY

Noncombustible siding over heat-resistive insulation continuously wraps the walls and roofs.

6 ENVELOPE DETAILING

Assemblies are detailed to form a tight envelope with minimal collection zones.

etrate the exterior envelope such as vented soffits and unsealed mechanical spaces. Field says that architects working in similar vulnerable settings must accept fire protection as a critical project criterion, “just as we design for other environmental conditions, including earthquakes, wind, and solar orientation.”

Field, Weir, and all the other architects interviewed for this article concur that such design objectives as environmental performance and fire resistance are inextricably linked. To illustrate this concept for potential clients, Kuth and Ranieri have developed a theoretical four-bedroom case study house that integrates green strategies with wildfire preparedness. It incorporates passive systems, such as natural ventilation and thermal mass, with energy-generating PV panels, and battery backup, to provide stable power after a disaster. It also includes rainwater storage and graywater recycling to help conserve potable water while providing a secondary source—along with the swimming pool—for firefighting. They hope it makes the point that the reconstruction effort is “an opportunity not to just rebuild, but to rebuild smarter, more resilient, and ecologically attuned structures.” This goal will become only increasingly urgent as California—and the planet—becomes hotter, drier, and more prone to catching fire. ■

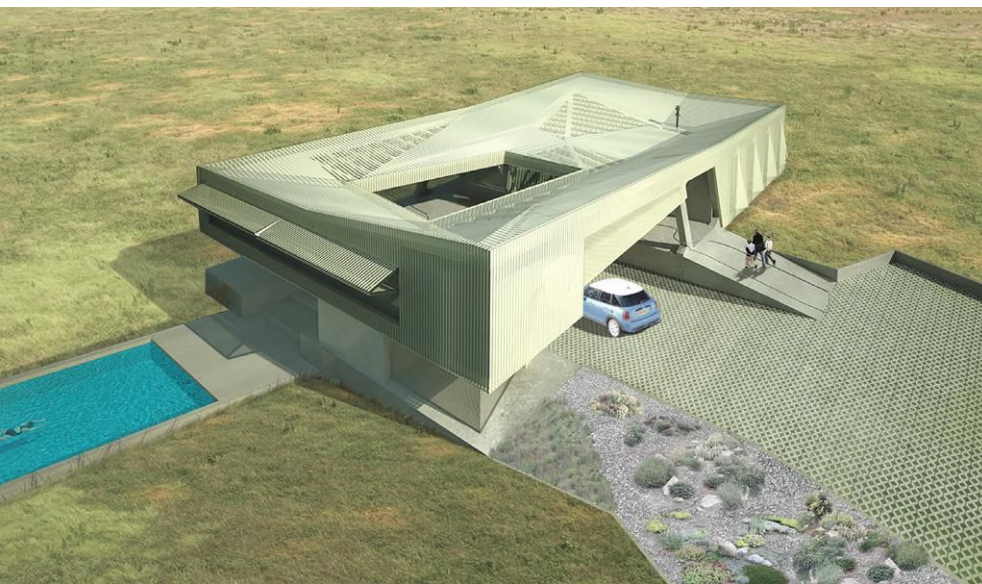
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Learning Objectives

- 1 Outline the factors that contribute to catastrophic wildfires.
- 2 Explain the relationship of wildfire activity and climate change.
- 3 Describe landscape and construction strategies that can enhance a building’s fire-resistance.
- 4 Discuss the overlap between fire-resistant design strategies and those that save water and enhance occupant comfort.

AIA/CES Course #K1804A



RESILIENT RESIDENCE Kuth Ranieri has developed a theoretical case study house to illustrate the relationship between fire resistance and environmental performance. The concrete-and-steel-framed building, clad in corrugated metal, includes renewable energy, graywater recycling, rainwater storage, and natural ventilation, among other features.



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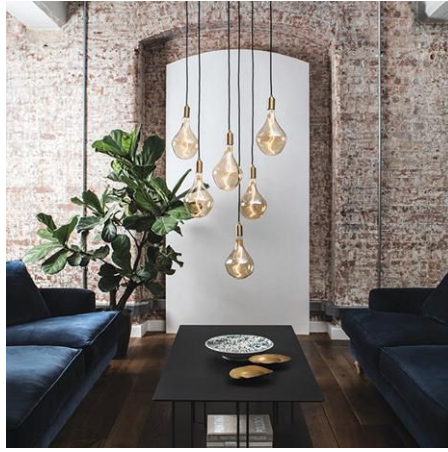
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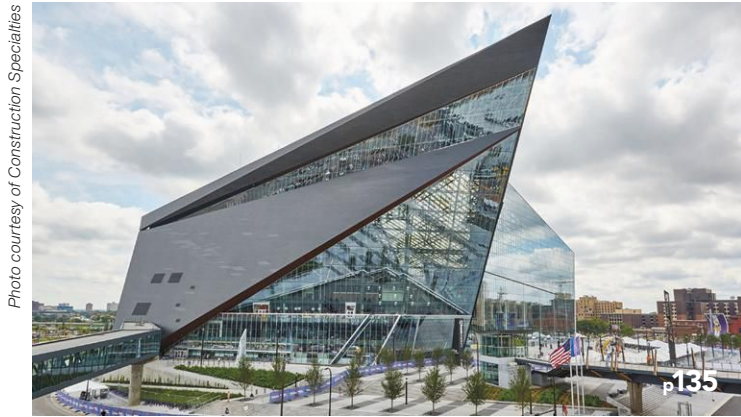


Photo courtesy of Construction Specialties

p135

Winning Stadium Designs

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Fabulous Functional Flooring

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Lightweight Precast Building Envelopes Maximize Performance

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Capturing Timeless Values with Contemporary Design

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Specifying Extruded Aluminum Trim for Drywall Surfaces in Multifamily Residential Projects

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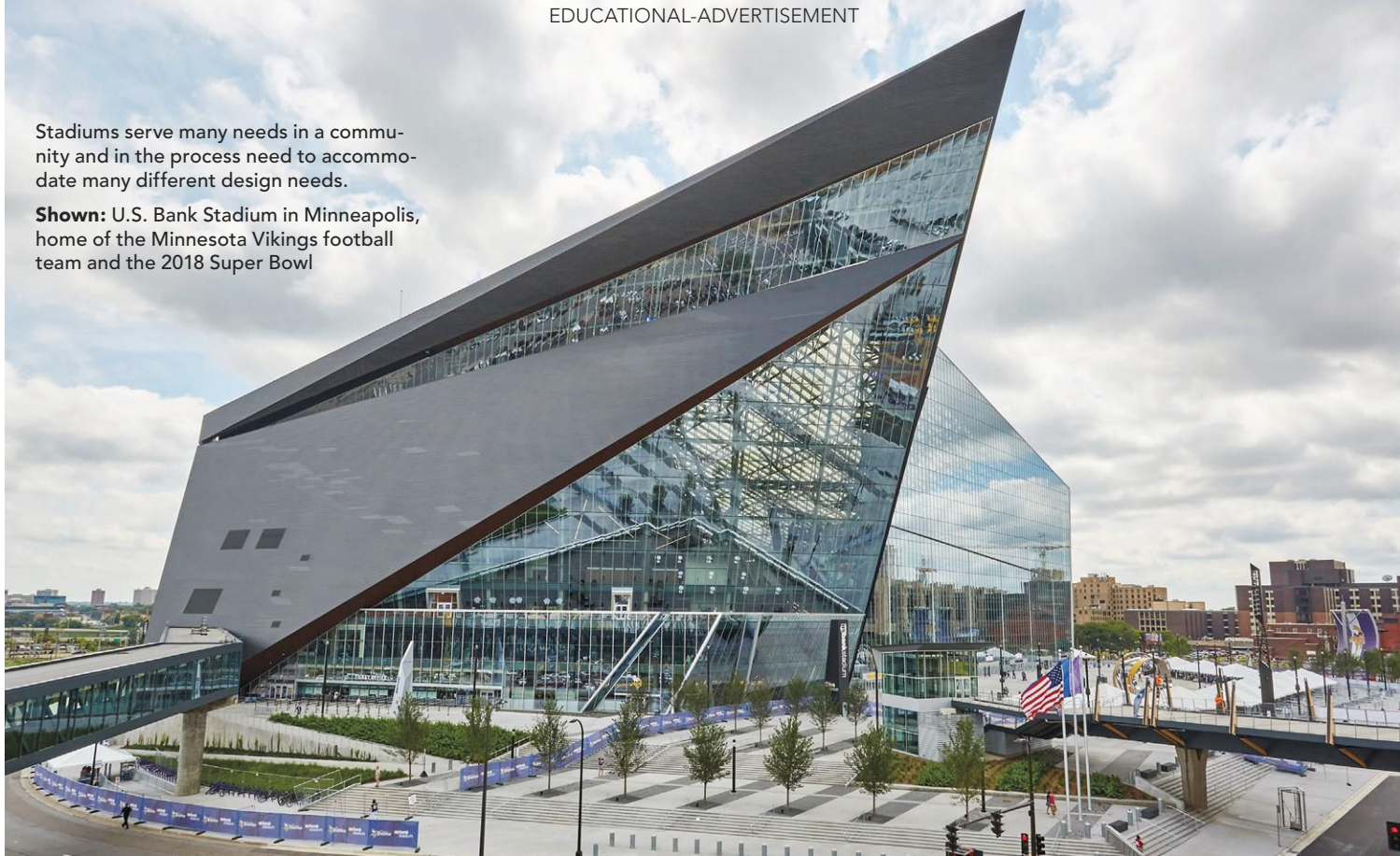
PM PRODUCTS AND MATERIALS
RE RESIDENTIAL

ST STRUCTURAL
SU SUSTAINABILITY

Stadiums serve many needs in a community and in the process need to accommodate many different design needs.

Shown: U.S. Bank Stadium in Minneapolis, home of the Minnesota Vikings football team and the 2018 Super Bowl

Photo courtesy of Construction Specialties



Winning Stadium Designs

Design and performance team up for the best project solutions

Sponsored by Construction Specialties; Hörmann High Performance Doors; JointMaster®, a division of Inpro®; NanaWall Systems; and Sherwin-Williams Coil Coatings | *By Peter J. Arsenault, FAIA, NCARB, LEED AP*

Stadiums continue to garner attention around the world as new ones are proposed, funded, designed, constructed, and operated. Meanwhile, existing ones are renovated and/or expanded in order to keep up with the emerging trends in state-of-the-art sports and entertainment venues. Many are associated with college or professional sports teams, but they also seek more hours of usage by attracting musical, entertainment, and local school events to use their facilities. Thus, they are truly multipurpose, multi-venue, and multi-user community assets. All of these appealing but complex variables mean that design professionals have a lot to consider when working on any of these facilities. Whether for a small community facility of 10 to 20 thousand square feet or large facilities in excess of a million square feet, all of them have to meet some basic requirements for design, construction, and smooth operation. We will take a look at some of those needs in this course.

EXTERIOR DESIGN

A stadium is often known by its exterior appearance. Many people who never step foot inside will still experience it from the outside either

in person as part of the community where it is located or in the media as its image is projected across the country or around the world. It is not surprising then that architects spend a good deal of design effort on this very visible aspect of such facilities, both in terms of expressed form and exterior finish materials. The form can respond to its surroundings, stand in contrast, or reflect the seating and field shape of the facility, all as determined by the design process.

The materials used on the exterior of a stadium are often chosen directly in concert with the form and statement being pursued. Those materials need to not only project the design intent but also provide long-term durability and economy both in terms of initial costs and maintenance costs. Toward that end, exterior design elements such as facade panels, roofing, curtain walls, and louvers commonly use factory-applied metal coatings to enhance design impact. Coatings are used to both protect the base steel and aluminum as well as offer virtually unlimited aesthetic variation. Careful consideration must be given to the selection and specification of the appropriate coating system

CONTINUING EDUCATION



1.25 AIA LU/HSW

Learning Objectives

After reading this article, you should be able to:

1. Identify the significance of large-scale and component elements of a stadium exterior design.
2. Assess the importance of durability, style, health, and safety for interior spaces in a stadium, including common areas and locker rooms.
3. Explain the importance of proper attention to details for the performance of critical design components, such as operable glass walls.
4. Determine ways to apply the principles as presented into building projects demonstrated through case-study projects.

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Photo courtesy of Sherwin-Williams



Fluoropolymer coatings can be used on metal building products to provide a very durable, long-lasting finish in a wide variety of design options to create distinct exterior aesthetics, such as at the T-Mobile Center in Las Vegas.

to ensure it stands up over time. In that regard, factory-applied fluoropolymer coatings have become an industry standard providing durability and design flexibility. These well-known coatings have been in use in buildings for more than 50 years and have proven themselves in the marketplace as a resilient finish that is quite suitable for long-lasting monumental buildings like stadiums.

Fluoropolymer, high-performance coating systems are factory applied for high-quality control and consistency of the finish. There are essentially two types of resins that are used in these coatings. The first is polyvinylidene fluoride, commonly referred to as PVDF. Commonly used for monumental and commercial projects, it is usually formulated with a ratio of 70 percent PVDF resins and 30 percent other materials. It is a factory-applied, baked-on finish using a high heat process to cure the coating system. The second option is fluoroethylene vinyl ether, referred to as FEVE coatings. These offer a wider range of gloss levels from matte to high gloss and can achieve brighter, more vibrant, and higher-impact colors than PVDF. Both of these choices offer nearly unlimited options since they can be matched to any color (solid or metallic). They are also available with unique aesthetic effects like color shifting, high sparkle, and even prints that mimic other building materials, such as natural and weathered metals, wood, or stone. For any of these, there are choices in terms of gloss or matte finish and variations.

An important consideration for the architectural appearance on a building is batch-to-batch color consistency of the materials being coated. When working on a stadium project, the size may dictate an extended construction

schedule such that the coating process is taking place on products spanning over months or even years. In that regard, it's important to identify and work with a manufacturer that offers batch-to-batch color consistency. This helps avoid panels that are mismatched—especially for metallic colors that can have a directionality to them. Properly selected and produced coatings can offer greater color consistency compared to natural and anodized metals, often with a price advantage as well.

Jeff Alexander is the vice president of sales for Sherwin-Williams Coil Coatings and observes, “We commonly see architects specify 70 percent PVDF and FEVE coating systems on stadium facades not only for their lasting durability and color retention but also because they are able to achieve such a wide range of aesthetic looks. Metal wall panels coated with 70 percent PVDF and FEVE coatings create a bold design statement for building exteriors, whether you're looking to incorporate team colors into your design or draw from a more classic color palette.” Clearly, they are an option worth considering.

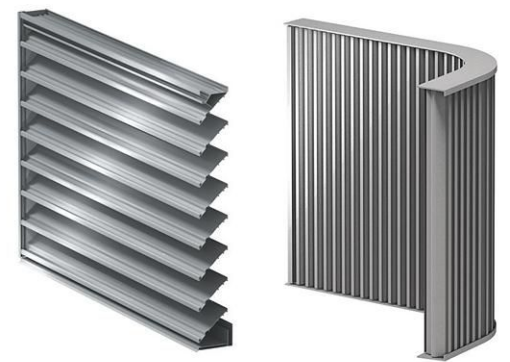
EXTERIOR SPECIALTIES

The large expanse of the exterior of a stadium can have many smaller areas and details that need to be addressed. For example, there may be enclosed viewing areas or windowed parts of the facility that can benefit from sun control systems that can lower energy costs and reduce glare but still allow filtered light to enter. Beyond these performance benefits, they can also help create a unique architectural design by providing intricate patterns, sleek textures, and vivid colors or even incorporating LED lighting.

Another common exterior specialty for stadiums is the incorporation of metal louvers that may be needed for general building ventilation or HVAC equipment purposes. In order to be considered high performance, such louvers need to meet some rigorous design and testing requirements to assure that the amount of air-flow through a louver can be met while at the same time providing resistance to weather or even storms. These performance requirements not only apply to the body of the louvered area itself, but also to the seams and joints between louver components, adjacent louvers, or louvers and adjacent wall facades. While some louvers can be specified as off-the-shelf items that have been independently tested by Air Movement and Control Association (AMCA), many louver systems are custom designed to fit unique stadium situations. That means their performance should likewise be tested in accordance with published standards. Working with a manufacturer who can arrange such testing capabilities for custom products can be important to success. Whether the performance criteria is for high-performing extreme weather louvers, storm-resistant louvers (tested for wind driven rain), or drainable and standard non-draining louvers, having tested performance data is paramount.

From a design standpoint, louvers can be designed to integrate into any high-performance facade. Visually, they can be used as an architectural element that provides an accent, or they can blend into an overall look of the building. Some manufacturers offer options such as design profiles that allow customization of the louver color and customized appearance with accent features, geometric grilles, and even a louver hidden by perforated sheet. Accessories can be added as well such as bird screen, insulated panels (that can be used to block off all or a portion of a louver), and even LED lights.

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High-performance louvers can be customized and incorporated into a stadium facade to provide the needed airflow and weather-resistant performance as well as aesthetic solutions for an exterior design.



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It is the combination of high performance and the options for the architectural look of louvers that allows them to work in complex stadium designs. Eric Sposito, CDT, is general sales manager at Construction Specialties and notes, “High-performance louvers allow architects to defy traditional airflow design conventions in order to achieve their true vision without sacrificing performance.”

OPENING GLASS WALLS FOR FLEXIBILITY

As a multiuse facility, stadiums need to accommodate a range of group sizes and a variety of users. Some prefer, and are willing to pay for, gathering in small groups rather than being part of the crowd, and they may be looking for more amenities than open seating can offer. Hence the growth of private or shared boxes with protected or even enclosed spaces and services has become widespread. Similarly, restaurant and bar areas in stadiums seek the same ability to operate smoothly regardless of the weather and be alternately open to the public or closed and secure. The design challenge becomes how to meet these seemingly competing needs as part of the overall stadium design. One proven solution is the use of opening glass walls that can slide or fold completely out of view when open while being able to provide views but resist weather and lock tight when closed.

The flexible operability of opening glass walls enable suites, gathering areas, in-stadium restaurants, or bars all to have the ability to configure the space based on the needs of the occupants or the event. For instance, when the glass wall is open, the fans experience the crowd directly, but when closed, the operable glass wall provide a transparent barrier with unobstructed viewing. In cases where the playing field is outdoors, the closed wall also provides greater human comfort with protection from wind, cold air, and noise. Further, when there are no events taking place or

in the off-season, the weather-resistant opening glass walls protect interior spaces and furnishings from exposure and/or unauthorized entry.

There are numerous benefits for stadium owners/operator who incorporate opening glass walls and flexible spaces into the design. In many cases, they can command higher ticket prices or permanent seat license (PSL) rates by providing suites that offer a unique experience for the fan, allowing the occupant the choice to open or close the glass panels with ease. Multiple uses and configurations of spaces mean the stadium isn't limited to an all-or-nothing rental facility. That can mean continuous sources of revenue coming in from various types and sizes of events. By using opening glass walls, separate interior spaces can be created, distinguishing flexible suites from standard luxury boxes and thereby offering a variety of choice and price levels. In the end, it is the spectator/user that benefits from an enhanced experience and more opportunities to find a setting to meet their needs.

From a performance perspective, opening glass walls are available in wood- or aluminum-framed systems or frameless all-glass opening glass systems. The framed systems can be large full-door heights spanning unlimited widths, while the frameless opening glass walls offer an all-glass, no-profile panel for maximum view. Depending on the specifics of the particular system, the openings can range in width from as little as 9 feet wide up to as much as 300 feet or more. They are typically comprised of uniformly sized panels with a top and bottom track along which the doors either fold or slide. With the glass panels open during pleasant weather, they can allow fresh air and connection to the outdoor event area. When the panels are closed, however, they need to create a secure, weather-resistant barrier that protects against rain, snow, humidity, noise, and extreme temperatures.

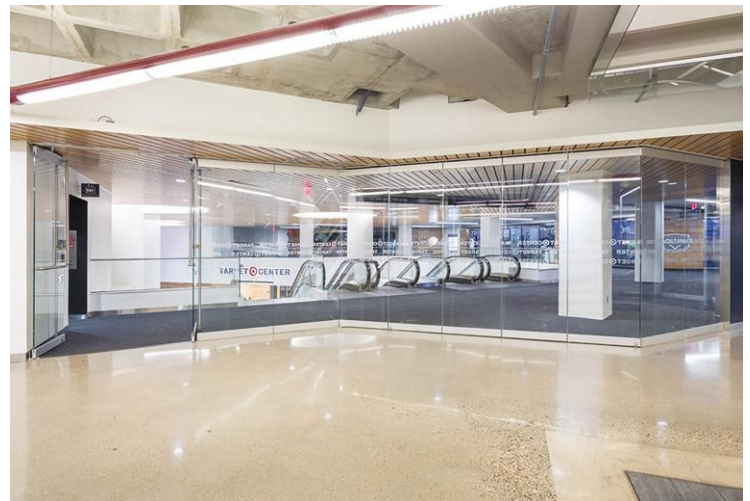
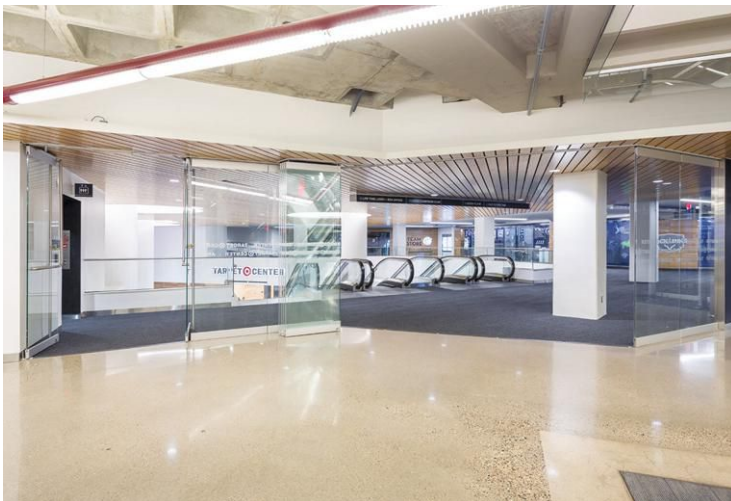
Because of the typically large opening sizes, the corresponding large perimeter area, and multiple joints between panel sections, the ability to seal tightly along all of these locations when closed is important. Therefore, most manufacturers will have their products independently tested to assure that they meet standard criteria for these environmental and security conditions.

From an operational standpoint, the glass panels need to easily glide or fold into position, meaning that the mounting and tracking mechanisms must be proven and reliable. Those can be similarly tested and documented for their performance, but finding a system that is easy to use and fairly intuitive will make it easy for stadium staff or even the general public to operate the panels.

The manufacture and production of operable glass wall systems can certainly vary between suppliers since they require considerable diligence and attention to detail in order to achieve high-performance levels. Hence, it is incumbent on specifiers to request independent testing reports on the selected products to determine the results for thermal performance, penetration of wind or water, security, and acoustical characteristics. This stringent and thorough third-party testing ensures optimum performance for specific site conditions. It also means that interior separation of spaces between several smaller groups is effective and does not compromise users in either space.

PROTECTING INTERIOR SURFACES WITH STYLE

All stadium interior spaces that encounter heavy pedestrian and equipment traffic are subject to wall damage. Incorporating wall and corner protection within interior spaces provides more resiliency and time savings for maintenance teams who are challenged with keeping the walls free from scuffs and damage that requires constant



Opening glass walls used in stadiums, such as the Target Center shown here, create flexibility in space usage by functioning in either the closed or open positions, all in a durable and transparent manner.

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attention and repairs. Relying on a maintenance team to address the damage after it occurs can be costly, not to mention disruptive to operations, so it makes sense to look for an alternative in the form of a wall-protection system. These systems are applied to wall substrates and are often manufactured as durable sheet products that come in a variety of thicknesses, most commonly 0.040 inch, 0.060 inch, and 0.075 inch to accommodate different wall conditions and help resist damage from day-to-day use and abuse. Similarly, corner guards can be installed that resist the potential for damage there. Different types are available, including 16 gauge/304 alloy stainless steel sheet for high durability. All of these measures keep the interior of the facility looking as good as it did on opening day, usually for many years down the road. Incorporating resistance to physical abuse reduces the need for maintenance dramatically, making these products a logical choice for designers and building owners alike by eliminating the need for repainting, resurfacing, or repairing unprotected surfaces.

It is worth pointing out that such protection need not be limited just to walls. Rather, doors in a stadium can be selected that have an impact-resistant fabrication and are covered with the same type of sheet products used on walls. This can be particularly helpful in creating durable door solutions for restrooms, janitorial closets, clubhouse entries, and many other high-traffic areas throughout a stadium concourse. The makeup of such doors can meet fire-rating requirements and help extend the service life of the door, making it a very economical solution over the long haul.

Whether used for walls, doors, or both, protective products offer abundant design options and color choices that can create accents or blend into any interior space. A wide range of solid colors, patterns, and simulated wood or metals are available. There are even sought-after options that allow artwork to be installed behind a clear protective sheet and mounted onto a wall or door. Photographs, logos, patterns, or custom artwork can be reverse-printed behind clear rigid sheet, serving as a protective shield for the design while providing impact-resistant protection to the surface below.

Overall, surface protection products offer a highly durable, long-term wall-protection solution that stands up to years of abuse while offering a range of design options appropriate for utility spaces to board rooms and just about everything in between. Renee Hite is the assistant business development manager for Acrovyn by Construction Specialties, and she comments on this type of protective product: "The resiliency, abundant design options and color choices can add style or blend into any interior space, all while offering protection needed in high-traffic interior building spaces."

Photo courtesy of Construction Specialties



Interior wall surfaces and doors in stadiums can be subject to a lot of use and abuse. Incorporating protective surfacing products over walls and doors can provide the needed durability while offering color and design options as well.

SPECIALTY PRODUCTS

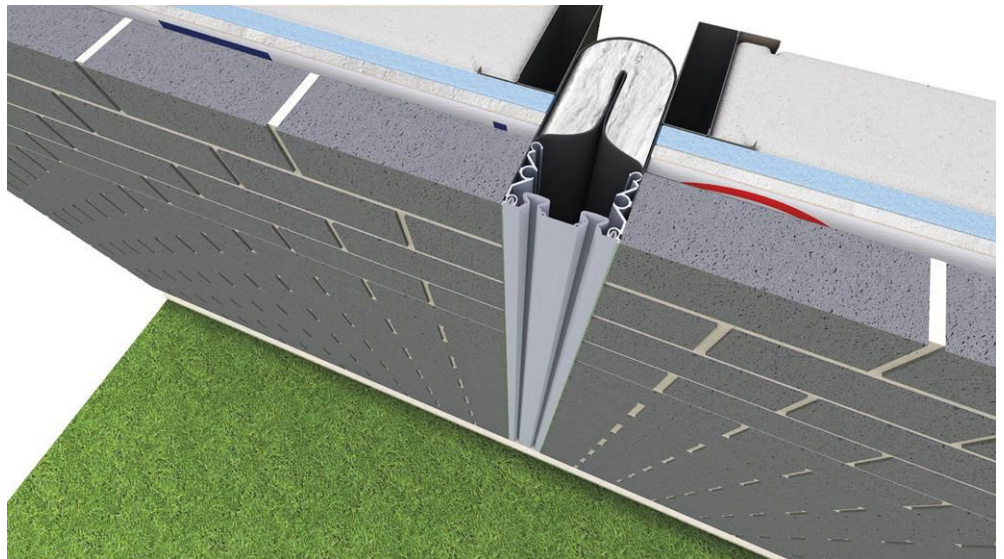
Stadium design requires attention to detail, and that often translates into the use of specialty products to address some specific needs. Of course those specialties also need to work with the overall design of a stadium.

Expansion Joint Systems

With their sheer size and surface area, stadiums are subject to significant movement of floors, walls and roof areas from thermal or other environmental forces. Therefore, expansion

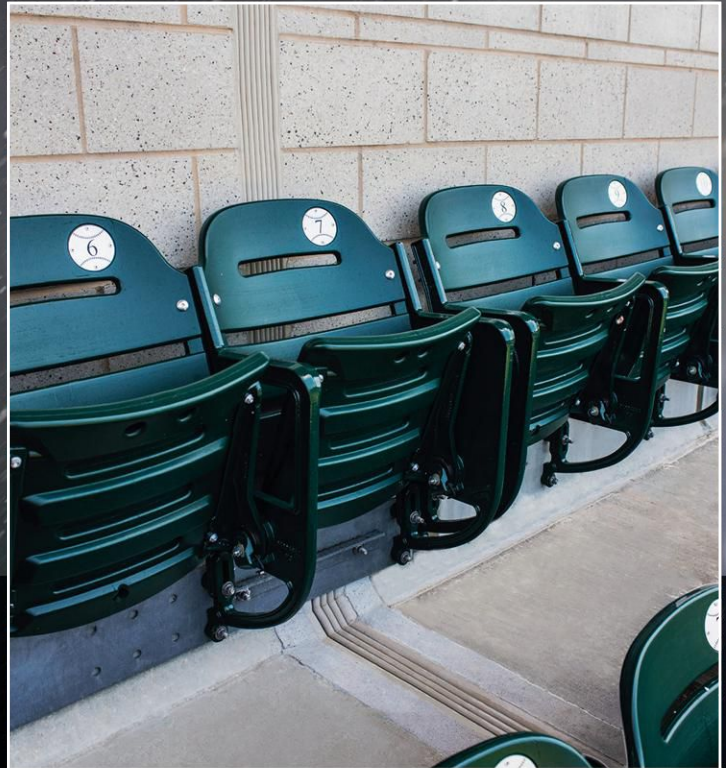
joint systems are a necessary component that must be engineered to handle not only movement but address several other factors too. First is the need for high durability of the joint materials and covers to withstand pedestrian traffic, push carts, scissor lifts, etc. Another factor is the ability to act as a moisture barrier since expansion joints in exterior walls or roofs must prevent rainwater infiltration or help channel rainwater to drainage points. Finally, if the expansion joint is in a fire-rated assembly, then the joint needs to be fire rated as well. Since wet fire barriers can become worthless and dangerous, preventing water from entering a fire barrier is critical to life safety. In that regard, choosing a supplier for expansion joint systems and fire barriers that are truly effective cannot be overstressed.

When looking at expansion joint system selection and specification for stadiums and arenas, several things need to be considered. First is the nominal joint size compared to the range of movement between the minimum fully contracted size and the maximum fully expanded size. The expansion joint system selected needs to accommodate this full movement range. Second is recognizing that building sections can move due to a variety of reasons, including one-directional thermal movement, multidirectional seismic movement, or movement along the joint as in wind-load induced movement. Third is loading requirement, referring to the type of weight and actions that will be induced onto the joint system, including its cover, during building occupancy. Fourth, is continuity of the expansion joints. Since a project scope could include interior and exterior joints or both, the joints need to run continuously through all adjacent planes



Properly designed expansion-joint systems are continuous across all planes of a structure and take into account the differing conditions in different locations.

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Large-scale graphics can enhance the stadium experience for fans, guests, and patrons by incorporating standard or custom imagery into the interior design of selected spaces.

to fully separate building sections and allow independent movement in things like building veneers, soffits, parking decks, patios, roofing systems, etc. Fifth is attention to fire resistance and moisture control since expansion joints may interrupt building assemblies that need to maintain one or both of these traits while still allowing the appropriate movement to occur. Finally, the form and appearance of expansion joints should be addressed so that it works with the design scheme of the adjacent finishes. With these considerations taken into account, the selection of expansion-joint systems can be worked into specifications and construction drawings to help assure stadiums are properly allowed to move, remain weather and moisture tight, and protect life safety.

Large-Scale Graphics

Incorporating standard or customized artwork into a stadium is often desirable for a lot of reasons. These could include creating decorative wall panels, facility branding, storytelling, timelines, lobby displays, informational displays, wayfinding, or as a means to provide a connection with teams or the community. Of course, incorporating such art can be expensive, not to mention easily vandalized or damaged. In order to provide protection but keep the art fully visible, there are systems available that allow art to be printed and combined with a protective covering. The sizes of such protective wall art systems come in a variety of standard sizes and custom sizes are possible too. Mounting options include stand-off style, screwed in place, adhesive, or cabled.

Manufacturers of such systems promote unlimited colors and design options to help create a custom look and fit for any facility. Any image can be used (provided proper reproduction authorization is obtained) and printed in a variety of formats.

LOCKER ROOM SHOWERS

Stadiums typically contain high-quality locker rooms and showers for the home and visiting teams. That quality is needed not only for the high-end appearance that may be expected but also for durability and ease of maintenance. Shower stalls, in particular, raise questions about the most suitable material to use in order to meet these needs. Many have assumed that ceramic tile is a good choice since the glazed surface of the tile can be appealing, is easy to clean, and provides good hygienic properties. However, the grout lines in between the tiles can quickly become problematic, allowing mold, mildew, cracks, and water penetration to occur. That all adds up to ongoing maintenance demands at best and very unsightly conditions or building damage at worst.

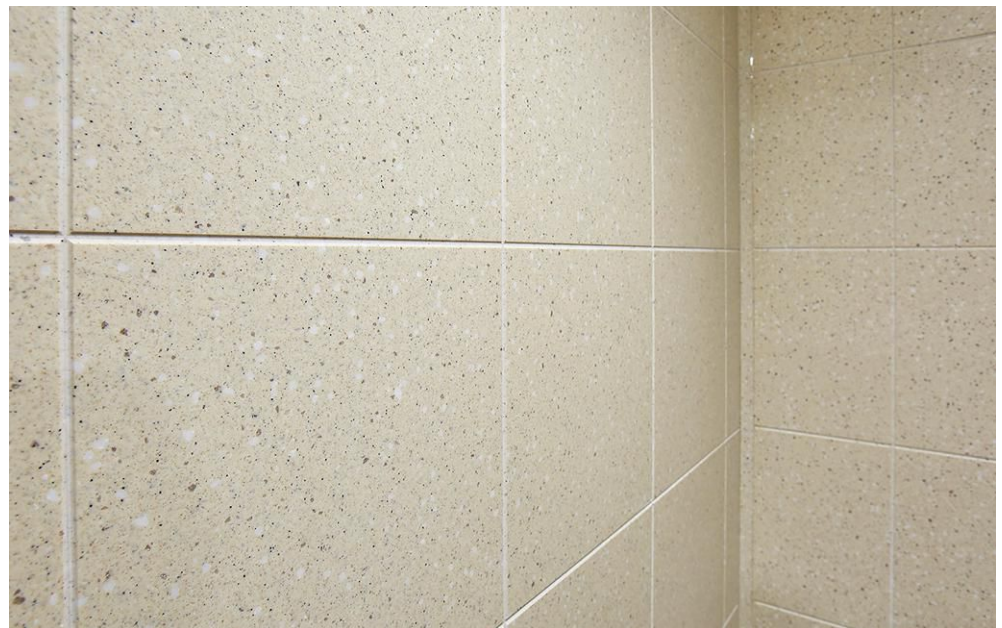
A preferred alternative is to use solid-surface panels to provide an excellent shower enclosure, including the shower base pan. Since the panels can be designed and sized to fit fully in a shower, there are no or minimal joint lines. Further, solid surface is non-nutritive, meaning it does not promote the growth of mold and mildew and resists bacterial growth. The inclusion of active antimicrobials like copper within the solid surface itself can reduce odor-causing bacteria. During construction, solid surface showers can

mean quicker turnaround on installation over traditional tile. From start to cured finish, solid surface showers can be ready to use in as little as four to five days. Traditional tile can take up to 12 days by the time all steps are finished, including mortar bed prep and curing, grouting and curing, and finish seal cure.

A common misconception among designers and contractors is that shower receptors must always have the drain in the dead center of the receptor. That is simply not true. Being able to put the drain hole in virtually any position is a distinct benefit of solid-surface shower receptors that are made in a manufacturing plant and can be sloped according to project specific needs, including accessibility requirements. Solid surface receptors can also be installed in as little as 1 hour versus a tile pan that can take up to three days to finish.

HIGH-SPEED, HIGH-PERFORMANCE DOORS

There are plenty of things that need to move around in a stadium besides people. Equipment, supplies, seating, and the machinery to move all of that are common so that food service can be provided, stages can be set up and taken down, and sports teams can function. All of this not only means that corridors and passageways need to be designed to handle these back-of-house functions, but it also means that appropriate doors need to be used to access the spaces off of those passageways. In some cases, an alternative to swinging doors is sought so that forklifts, carts, or other equipment can pass through without fear of damaging the doors, meaning that the doors roll up or slide out of the way. It also means



Team lockers and showers made from solid-surface material, like the example shown here, can provide a superior appearance with multiple finish options, be easier to clean and maintain than tile, and provide durable surfaces on all sides, including the drain pan.

Photos courtesy of Hörmann High Performance Doors



High-speed, high-performance doors can provide a durable, efficient, and economical solution to many large opening needs.

that the doors need to be able to open and close automatically so the equipment operators don't need to stop to perform that function.

One of the best responses to these door needs is to use high-speed automatic doors. According to the Door and Access Systems Manufacturers Association (DASMA), high-speed doors are a subcategory type of high-performance doors. They are power-operated, coiling, folding, or sliding non-residential doors, generally characterized by high cycle-ability (75–100 or more opening and closing cycles per day) and/or rapid operating speed (32–40 inches per second or more). Several types fit into this category, including fabric panel rolling doors, rigid panel rolling doors, folding doors, and sliding doors. They are typically made to order for high durability and/or designed to safely break away due to equipment impact. These types of high-performance doors offer unique enhancements not available with conventional coiling and sectional overhead doors, including operational cost savings, energy efficiency, and the ability to sustain high usage with minimal maintenance. As such, they are ideally suited to many stadium installations.

DASMA's High-Performance Door Division has presented findings of a two-year research effort involving third-party laboratory testing and summarized it in a DASMA article titled "When a High-Speed Door Is More Energy Efficient." The study demonstrates that if a doorway is used frequently, at or above 55 cycles per day, a high-speed door delivers superior traffic flow and conditioned air conservation as compared to conventional overhead coiling doors. Prior to this work, high-performance doors were only considered in building codes and standards as static, and closed. However, because of this research, codes now recognize the dynamic nature

of these high-performance doors. In particular, high-speed doors offer a unique benefit in controlling air exchange. When other slower-moving doors are activated, the amount of air exchange is high because the door is fully open for a longer period of time. High-speed doors open and close faster so the air exchange between each side is reduced. That can improve energy performance in a building, especially when the door is opened and closed frequently each day. Using the methods described by DASMA, it is now possible to demonstrate calculated energy performance and cost savings on a building envelope in a reliable and verified way.

In the United States, high-performance doors and their components are often engineered to meet material and assembly performance criteria as set forth by well-known standards and testing agencies such as ANSI, ASTM, IEC, and UL. High-performance doors may also need to comply with building codes and standards applicable to stadiums as places of assembly. In recent years, the definition of high-speed doors has been added to ASHRAE 90.1-2013, ASHRAE 189.1-2013, and the 2105 International Energy Conservation Code (IECC). In addition, associations such as DASMA and the National Fenestration Rating Council (NFRC) are involved with developing industry standards specifically for high-performance, high-speed doors.

High-speed, high-performance doors have been available for more than 35 years, primarily installed at industrial locations. Now, high-performance door manufacturers are seeing a rapid surge in product popularity within more visible commercial venues such as stadiums. This is due to the product's ability to enhance thermal performance and energy efficiency for exterior applications or between conditioned space and refrigerated space. Manufacturers

are also responding to some emerging trends by offering greater thru-visibility qualities with clear vision panels, higher operating speeds, enhanced safety features, and more compact designs. Overall, high-performance, high-speed automatic doors have come to be recognized for providing functional and operational solutions for client operations with contemporary aesthetic features and options with minimal maintenance as compared to traditional rolling doors.

When designing with and specifying high-performance, high-speed doors, architects should consider the following:

- **Project type:** Are the doors being used for new construction or retrofit/replacement, and what are the parameters of the new or existing walls where they will be located?
- **Application:** Are the doors being used purely to separate conditioned interior spaces, or are there special concerns such as between parking garages, food and beverage spaces, freezer spaces, tunnel areas, or other demanding locations?
- **Aesthetics:** What are the appearance and design qualities being sought?
- **Desired speeds:** Opening speeds can be identified, typically 32 inches per second or more. Closing speeds are sometimes just a little slower for safety but no less than 24 inches per second.

Continues at ce.architecturalrecord.com

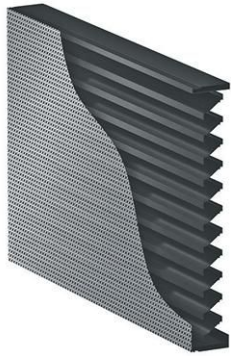
Peter J. Arsenault, FAIA, NCARB, LEED AP, is a nationally known architect, consultant, continuing education presenter, and prolific author advancing building performance through better design. www.pjaarch.com
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PRODUCT REVIEW

Winning Stadium Designs

Construction Specialties

Image courtesy of Construction Specialties



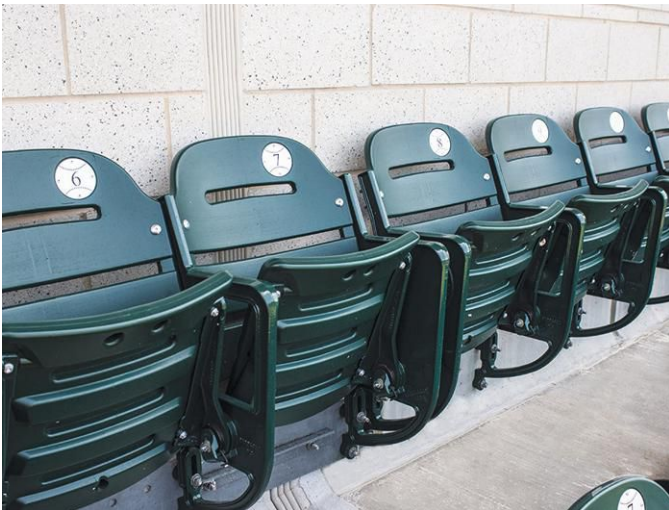
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By Peter J. Arsenault, FAIA, NCARB, LEED AP



Recent innovations in flooring provide many new design options for color, pattern, and texture while also offering increased durability and ease of maintenance.

Photo courtesy of Neolith by TheSize

A recent market research report by the firm Grand View Research (www.grand-viewresearch.com/industry-analysis/commercial-flooring-market) indicated that the global commercial flooring market size for 2016 was valued at just over \$27 billion. That reflects the significance of the market but also the widespread, annual need for commercial flooring. The report goes on to point out that the floor-covering sector is expected to expand within the industry over the next eight years, particularly as product innovation and hassle-free installation technologies come more into play. A general rising demand in the construction industry will help fuel this expansion, of course, but so will consumer expectations and demands that are helping to drive innovative flooring solutions that are durable and require low maintenance. In light of these trends that highlight the significance of flooring as a building product, this course will look closer at four particular design considerations and available product offerings that can be considered for commercial, industrial, and institutional buildings of all types.

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Learning Objectives

After reading this article, you should be able to:

1. Identify the design aesthetic and performance significance of floor surfaces as part of the overall interior design of a building.
2. Assess the health and safety performance aspects of floor surfaces as they relate to indoor environmental quality and durability.
3. Explain the importance of floor structure design to enhance space planning, acoustics, and flooring integrity.
4. Determine ways to incorporate principles presented into buildings as shown in case studies.

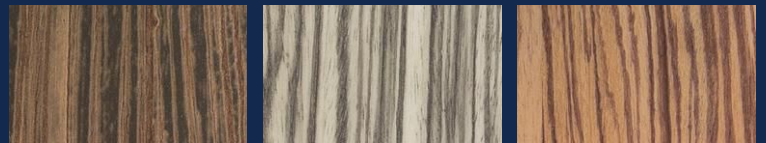
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FLOOR STRUCTURE

The structural floor system of a commercial building provides many attributes for a building. In addition to tying into the rest of the building structure, it creates a solid separation between building stories to prevent the passage of sound, air, light, and fire. It is also the platform or substrate that supports everything placed on the floor, including the finish flooring. As such, it can either create favorable conditions for the finish flooring to function or, alternatively, can cause problems. In fact, most finish flooring problems come about not because of problems with the finish material but because of problems with the material or structure under it. Therefore, the attributes of the structural floor system can directly affect the real or perceived attributes of the finish flooring, regardless of what is selected.

In many commercial, industrial, or institutional buildings, steel and concrete are commonly used to create the structural floor system. However, it is the selection of a specific type of steel or concrete floor system that can greatly affect the overall performance outcomes of a construction project. There are actually a variety of types and range of capabilities of floor systems that can be both complex and versatile. The final selection can directly influence the unsupported span length, acoustic attributes, vibration control, and fire-resistance ratings. Further, the integration of mechanical, electrical, and plumbing systems and even the ultimate height of the building itself can be dictated by the structural floor system selected for a project.

There are at least three common structural floor system choices considered for many commercial buildings. The first is a conventional, lightweight system using steel girders, beams, or trusses to support a metal floor deck that is topped with concrete. This steel-based system is known for its speed of erection, lighter weight, and versatility. Second is an all-concrete system, whether precast or poured in place, which is usually thinner in overall height compared to a steel floor system. However, all-concrete systems need to be assessed for the amount of additional dead weight they create compared to other systems. A third, and innovative alternative, is the use of long-span composite floor systems that combine the lighter weight and erection ease of steel with the strength and durability of concrete. Referred to as a long-span composite floor system, it achieves a thin-slab advantage characterized by a narrow floor structure, longer unobstructed floor spans, and a range of under-floor aesthetic ceiling options. These systems not only address the economy of the structure, but they also address the final design of rooms or spaces, including ceiling design, acoustical treatments, sound attenuation, and fire resistance.

Photos courtesy of New Millennium Building Systems



Long-span, composite structural floor systems create a strong, durable, and economical floor substrate for applying finish flooring materials.

Long-span composite floor systems can weigh up to 40 percent less than comparably utilized cast-in-place (CIP) concrete floors, can provide fire resistance ratings up to 4 hours, and can achieve clear spans up to 36 feet. This makes them very well suited for a full range of new and renovation/retrofit building projects, including multistory residential, commercial, health-care facilities, parking garages, specialty platforms, and high-rise buildings. From an economic standpoint, less steel and less weight in these composite systems contribute to lower overall project costs. As part of an integrated structural system, they can enhance the structural performance of the rest of the building whether those other portions are based on steel, concrete, masonry, or framed bearing walls. Composite floor systems can also be constructed faster, safer, and more cost effectively than alternative systems.

Long-span composite floors function by using the best of each material in this hybrid system: the tensile strength of a corrugated metal deck and the compressive strength of reinforced concrete. Together, this system allows for longer spans that can eliminate the need for intermediate supports and create a single floor/ceiling assembly that allows more economical floor-to-floor heights. Two common types are as follows:

- **Dovetail composite deck profiles:** This typical profile is capable of supporting clear spans up to 28 feet. Its name comes from the dovetail shaped profile of the corrugated metal panel that receives the concrete and bonds firmly with it. This can provide extra rigidity and strength that allows finish flooring to function properly without fear of deflection or movement. This profile can be particularly useful in midrise or multistory residential projects such as hotels, health-care communities, and dormitories, where walls between units can support the floor deck without the need for intermediate supports.

- **Deep-deck composite profiles:** Deep-deck composite floors support even longer, wider, and more open spaces than dovetail profiles. Clear spans up to 36 feet are commonly achievable, meaning they are well suited for buildings where open space and free flowing interiors are sought.

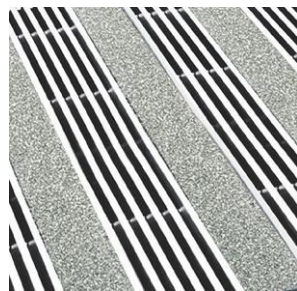
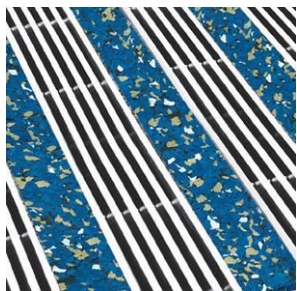
The flexibility and attributes of a composite floor system can change the way architects and engineers view a project. It's no longer just a floor—it's an evolved structural floor and ceiling system that is integral to better building design. Vitaliy Degtyarev, PE, design and research engineer for New Millennium Building Systems, has observed this first hand. "A hospital renovation project called for wide, open floors designed to accommodate unique serviceability requirements," he says. "Thirty-three-foot spans between beams, combined with overhangs as long as 14 feet, provided a unique design challenge. The solution was found in a composite floor slab approach. Since the floor system also supported operating room equipment and an outboard curtain wall system, controlling deflection was a critical and successful function of the composite design."

ENTRANCE FLOORING

Too often, one of the most overlooked and underappreciated products within a building is an entrance flooring system. Comprised of an engineered mat or grid flooring system, entrance flooring is specifically designed to trap dirt and debris at the door. This means that it not only keeps the rest of the building flooring cleaner, reducing maintenance costs, but it also reduces potential damage from things that can be tracked in on shoes, carts, etc. As such, it is one of the most functional and cost-saving products that can be included in a building relative to their overall cost. Entrance flooring also improves



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Photos courtesy of Construction Specialties



The many different types of entrance flooring available can provide an effective transition between indoor and outdoor space, such as the Owego Elementary School (top left), or highlight a logo for place identification, such as the Belton Research Hospital (top right). Not limited to just vestibules, it can make up a full front lobby, such as the SRAbility Lab (bottom).

indoor air quality by reducing airborne particles and the need for harsh cleaning chemicals. From a safety standpoint, dangerous conditions, like slippery floors, can be reduced since rainwater can be captured in the system, thus helping to eliminate slip and fall accidents. In terms of design options, there is a wide range of entrance flooring products available with selections readily made to suit all different building types, usage requirements, and budget ranges, not to mention contributing to a positive first impression when people enter the building. Because of the variety of aesthetic options and available materials, it is easy to create an entrance flooring system that readily complements a building's design.

Permanent entrance flooring systems have been manufactured and incorporated into buildings since the 1960s so they have proven themselves repeatedly over time. Products include systems that are made from alumi-

num or stainless steel with common choices of computer-milled, modular mats, and grids. There are options for both surface-mounted systems that sit above a concrete floor and recess-mounted applications, which require that the concrete slab be formed to accept it. To assist during building design, most entrance flooring manufacturers will provide technical assistance to assure proper sizing coordination, product samples, and other details. Through this collaboration, products can be selected that are best suited to different building types and design factors, such as weather, foot traffic, rolling loads, and ADA compliance. This early collaboration allows architects and designers to gain insights into addressing proper layout and product choices for different situations. It also helps determine which aesthetic options and materials will best suit the overall design intent to either blend with the surrounding flooring or provide

a visual accent. Once the project moves from design into construction, the manufacturing team can assist with field-verified dimensions, on-site technical support, product mockups, and sample coordination.

The value of entrance flooring systems is most fully realized by the building owners and maintenance staff since entrance flooring systems are known for their durability. They have been shown to stand up to years of foot traffic, heavy equipment, harsh weather conditions, and tracked-in debris. Many users see the way entrance flooring helps to extend the life of the interior floors, decrease maintenance costs, improve indoor air quality, and decrease the risk of liability caused by slip/trip/fall accidents. In short, they experience first-hand that by stopping dirt at the entrance, the rest of the building thrives.

Wade Brown, product marketing manager of Construction Specialties, notes that "If entrance flooring systems are not designed and included at the time of construction, it becomes the owner's problem to solve how to best keep dirt and water from entering through their front door, and ultimately protect all the buildings occupants from hazards such as slip/falls and poor indoor air quality. The architect's decision on what products to use, or whether to use them, can have a lasting effect on those who inhabit the building over its life time." Overall, by stopping dirt at the entrance, the rest of the building is protected from it. And since entrance flooring systems are known for their long-term durability, it is easy to see why they have very favorable payback periods.

SINTERED STONE FLOORING

Sintering is a manufacturing process that uses natural materials in powder form and processes them, usually under heat, pressure, or both, to create a desired product. In the case of sintered stone for flooring products, stone and other natural materials are ground to a powder and subjected to specific heat and pressure to produce a uniquely broad combination of characteristics. It is resistant to stains, scratches, chemicals, and heat with a high density, which makes it virtually waterproof—it has a porosity less than 0.09 percent, meaning no sealers are required. For those who maintain the building, they find the dense, nonporous surface easy to clean, including the removal of graffiti so the appearance and color are maintained over time. Even harsh chemicals aren't a problem to use since it is chemical resistant.

From a design standpoint, the surface of sintered stone can provide the look of stone, tile, wood, smooth, or textured surfaces in a variety of colors and hues. However, it is lighter in weight than many other materials, coming in at only 1.1 to 1.5 pounds per square foot for a 1/8-inch thick panel. Further, it is available in large-format sizes ranging from 12-inch by 24-inch tiles up to 60

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Photos courtesy of Neolith by TheSize



Sintered stone flooring can create dramatic visual effects while providing durable and beautiful surfaces.

inches by 60 inches or in full slabs that are 4 feet by 12 feet or 5 feet by 10.5 feet. Larger sizes means minimal grout lines and less concern about keeping those lines clean. The material is also very versatile. In addition to the variety of thicknesses and size formats, it is also available in more than 50 full-body and digitally enhanced decors, allowing design professionals to engage in full creative control over their projects.

When used specifically for floor surfaces, sintered stone is suitable for all types of spaces, from large hotel lobbies to midsize retail or restaurant settings to small bathrooms, and just about everything in between. The degree of wear resistance needed in any of these spaces can be accommodated by picking the proper thickness of sintered stone to suit the situation. The choices of thickness can also help provide smooth transitions with adjacent floor finishes. Depending on the manufacturer, sintered stone can be created to take on the very accurate appearance of marble, granite, other stone, wood grain, tile, and more. This means that designers have a full palate of colors and textures to choose from. Grand spaces can have sintered stone floors that look like marble, granite, or other dramatic stone, including the capability to create patterns and stone imagery that is more readily controlled than stone materials. For restaurant and retail spaces, the colors and textures can be selected to complement the rest of the décor and create spaces that are bold and strong or soft and intimate depending on the situation. For bathroom and kitchen spaces, surfaces that look like marble or create contrasts of colors, including the creation of tubs and other items, can be designed to meet the intended results.

Sintered stone flooring is best installed using common thinset adhesion and grouting techniques similar to ceramic tile installation. The underlying subfloor or substrate needs to be flat and clean as with any large-format product. Self-

leveling materials or isolation crack membranes are always recommended to help assure best results. Then an appropriate thinset adhesive can be applied to the substrate and made ready to receive the sintered stone in common fashion. The material itself can be precut by the manufacturer or field cut using conventional cutting tools for tile. Either way, the manufacturer's instructions and recommendations need to be followed for the proper handling, adhering, grouting, and joint work to achieve best results. Standard instructions will often be provided to help avoid installation mishaps.

Once installed and in use, sintered stone flooring can be an ideal solution for large-format tiling in high-traffic commercial and residential project applications. As a product solution, it addresses some of the most common issues with traditional large-format tiles: weight, expenses, and difficulty of installation. Since the product is available in exceptionally thin flooring slabs at 6 millimeters in thickness ($\frac{1}{4}$ inch), they are quite lightweight and fairly easy to transfer from warehouse to construction site. They can also be applied directly onto existing surfaces, eliminating the need for gut remodeling or costly tear-outs while reducing landfill waste.

VINYL SHEET FLOORING

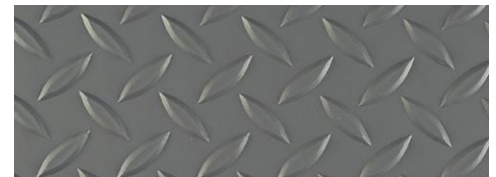
High-quality vinyl sheet flooring has been a go-to flooring choice for many designers for a long time, particularly for demanding interiors such as health-care and assisted living facilities, high-impact athletic/exercise rooms, retail and hospitality spaces, and educational facilities. When looking to select and specify this versatile, resilient flooring, here are some of the latest developments in this product choice.

- **Patterns and textures:** No longer limited to only flat, smooth surfaces, high-quality vinyl sheet flooring is now available in patterns and textures that emulate other materials, in-

cluding diamond plate pattern, linen pattern, and wood-grain pattern. They also offer a wide array of colors that can be incorporated into an overall interior design scheme.

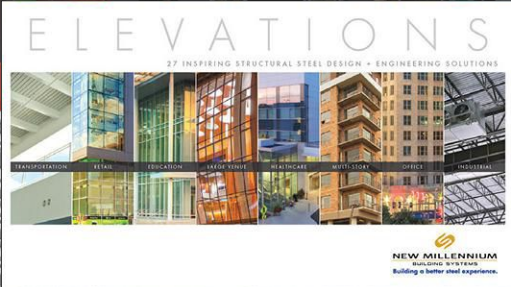
- **Top finish choices:** Some sheet vinyl products are available with a factory-applied urethane finish that creates a no-wax surface. This finish protects the flooring, reduces scuffing, and simplifies routine maintenance. As such, it extends the life of the flooring by protecting it from wear due to staining and soiling.
- **Athletic surfaces:** Whether talking about everyday fitness buffs or the most dedicated

Images courtesy of LONSEAL FLOORING



High-quality sheet vinyl flooring is available in a range of embossed patterns, textures, and colors that provide more design options than previously, including diamond plate pattern, linen pattern, and wood-grain pattern, all shown here.

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and intense athletes in the world, they all require top-of-the-line equipment to stand up to the intensity of their training. That includes the flooring that they work out on. In response, manufacturers have created high-quality resilient sheet flooring with shock-absorption qualities to help relieve some of the pressures exerted from physical activities. Such flooring features an anti-fatigue, cushioned-step, closed-cell foam backing that is designed especially for high-impact activities. Available with very low-VOC-emitting flooring, it allows fitness enthusiasts to push their strength to the maximum level.

There are also advances in the way resilient sheet vinyl is pursuing and achieving greater sustainability and green building recognition. Some of these ecofriendly features can be summarized as follows:

- **LEED contributions:** High-quality vinyl interior flooring products are available that contribute toward LEED v4 Building Product Disclosure and Optimization: Environmental Product Declarations (EPDs) (Option 1). This qualifies the materials and sources with an industry-wide EPD. They can also contribute toward Sourcing of Raw Materials (Option 2), which means the products have post-industrial recycled content, commonly ranging from 10–20 percent, with some reaching 50 percent or more. Interior flooring products and adhesive products are also available to meet the requirements of Indoor Environmental Quality credits for general emissions evaluation and VOC content requirements.
- **FloorScore® certification:** This well-known program from the Resilient Floor Covering Institute (RFCI) and Scientific Certification Systems independently tests and certifies flooring products for compliance with indoor air quality emission requirements. Some products have recently been developed and certified for low VOC content, a notable distinction from other products.
- **Collaborative for High-Performance Schools (CHPS):** Some manufacturers are a member of and meet the standards for the CHPS program, a well-known green building rating system especially designed for schools.
- **ISO 9001 and 14001 compliance:** Flooring products can be specified to be obtained from a facility that has certifications from the International Organization for Standardization (ISO), which provides a rigorous external third-party verification

Photo courtesy of LONSEAL FLOORING



High-quality flooring, when properly selected, can make an interior environment feel warm, inviting, and comfortable.

process. Specifically ISO 9001: Quality Management Systems ensures a manufacturer's compliance to its own internal quality standards. In addition, ISO 14001: Environmental Management Systems addresses ever-changing environmental laws and regulations.

- **Operations and maintenance:** The formulation of high-quality sheet vinyl flooring can help with better indoor environmental quality during the operations and maintenance of a building as well. A preapplied urethane finish can reduce maintenance efforts and reduces the need for chemicals from finishes and strippers. It also adds durability and product longevity that can exceed most other flooring options using phthalate-free technology. There are also antimicrobial formulations the feature increased infection control, making them particularly well suited for health-care and school facilities.

While vinyl flooring manufacturers have made great progress in recent years, some are never satisfied with the status quo and are always striving to raise the bar with ever-more ecofriendly products and new product offerings. Some get their inspiration from the world in which we live in, taking an intellectual approach to invest time in researching the right flooring designs for various interior environments.

For example, some new vinyl products feature a wood-grain pattern that has the characteristics of watery lines of waves. This ripple design uses a distinguished, centuries-old, timeless pattern to give everyday commercial building spaces and specialty applications a more genteel touch. Taking its cue from 18th century traditional designs, it can make an interior environment warm, inviting, and comfortable.

Jorge Marquez is president of Lonseal Flooring, and he comments on this type of innovative, ongoing development: "When architects and designers are looking for project uniqueness, they turn to high-quality sheet vinyl flooring. It is known for sophisticated designs, along with a long-standing reputation of providing high-quality flooring." When applying this type of flooring to a specific facility, Gregg Daniels, the director of facilities services at Mercy Medical Center in Des Moines, Iowa, has some substantial experience.

Continues at ce.architecturalrecord.com

Peter J. Arsenault, FAIA, NCARB, LEED AP, is a nationally known architect, consultant, continuing education presenter, and prolific author advancing building performance through better design. www.pjaarch.com, www.linkedin.com/in/pjaarch

PRODUCT REVIEW

Fabulous Functional Flooring

Construction Specialties

Photo courtesy of Construction Specialties



GridLine™

GridLine™ stainless steel entrance grids protect interior floors from the damaging effects of tracked-in moisture and debris by effectively cleaning pedestrians' shoes. Easily maintained, Gridline boasts a high-tech appearance and durable construction that supports rolling loads up to 500 pounds per wheel.

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LONMOIRE TOPSEAL

LONMOIRE TOPSEAL's wood-grain pattern has the characteristics of watery waves of lines. This ripple design was once coveted by queens. It distinguishes the centuries-old pattern that now gives everyday commercial spaces a genteel touch. Lonmoire is phthalate free and also features Lonseal's exclusive Topseal formulation.

lonseal.com

Neolith by TheSize

Photo courtesy of Neolith by TheSize



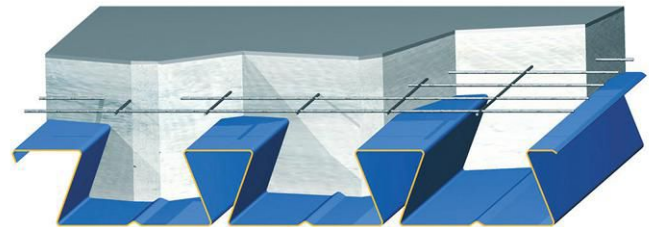
Natural Sintered Stone

Neolith's 100-percent natural sintered stone is one of the most resilient surfaces on the market, unfazed by continuous use, scratching, extreme heat or cold, moisture, and harsh chemicals. The exceptionally lightweight, 6-millimeter slabs are an ideal solution for large-format tile flooring in high-traffic commercial and residential projects.

www.neolith.com

New Millennium Building Systems

Image courtesy of New Millennium Building Systems



Versa-Dek® Composite Deck

Versa-Dek® composite deck products utilize the inherent strength and aesthetic appeal of the dovetail shape in both 2 and 3.5 profiles to provide architectural and structural design communities a vast array of composite floor and roof deck options. These can be specified with acoustical options.

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The Insignia de Saltillo designed by Cuatro 44 Architecture is the first LEED-certified building in Coahilla, Mexico. The 718 skewed parallelograms provide an energy-efficient facade composed of lightweight precast concrete panels.



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Lightweight Precast Building Envelopes Maximize Performance

Resilient and lean, fiber-reinforced modular precast wall systems maximize thermal performance, minimize construction scheduling, and produce buildings that meet the highest sustainability standards

Sponsored by SlenderWall by Easi-Set | *By Celeste Allen Novak, FAIA, LEED AP, BD+C*

A dramatic LEED-certified high-rise office in Coahilla, Mexico, the Insignia de Saltillo is composed of 718 skewed parallelograms. Ironically, this building unites the most recent advance in lightweight precast panel technology with a facade designed to emulate the interweaving of fabric banners of the Middle Ages. From the building of the aqueducts to the construction of skyscrapers, advancements in technology and

manufacturing processes have made concrete and subsequently precast concrete panels some of the most versatile materials on the planet.

Driven by the demand for new housing in the 1940s and 1950s, European engineers developed a method of precasting concrete into panels modularized and built in factories as an economical means to faster and more durable construction. By the 1970s, insulated concrete sandwich panels

CONTINUING EDUCATION



1 AIA LU/HSW

Learning Objectives

After reading this article, you should be able to:

1. List manufacturing and technology advances that are streamlining modular precast concrete wall enclosures.
2. Discuss the components of lightweight modular precast concrete wall systems that contribute to high-value green building rating systems.
3. Identify thermal requirements of a manufactured wall system that provide continuous insulation and thermal gap protection in all climate zones.
4. Compare a variety of buildings designed to take advantage of lightweight modular precast wall systems in projects that range from renovations to new construction and traditional to modern design.

To receive AIA credit, you are required to read the entire article and pass the test. Go to ce.architecturalrecord.com for complete text and to take the test for free.

AIA COURSE #K1804E



© Serge Jacques (left); © BPDL (right)



The ÉTS School of Technology Student Residence in Montreal, Canada, was developed jointly by the ÉTS construction and operations teams, architects Régis Côté and Associates, structural and civil engineers Pasquin St-Jean and Associates, and electromechanical engineers Beaudoin Hurens. The general contractor Groupe Decarel met a fast-track, 18-month deadline by installing factory-assembled, lightweight precast concrete panel systems complete with windows, thermal enclosure, and perimeter framing as part of the LEED Gold application.

were a common part of a contemporary architect's design palette. They were a go-to material for economical load-bearing walls in housing and commercial buildings. As manufacturing and technology advances began to lighten panel enclosures, composite thermal panels were developed to meet new demands for energy efficient buildings.

According to Art Miles, president of Easi-Set Worldwide, "Off-site prefabrication and modularization of lightweight composite precast facade assemblies has revolutionized the building construction process. They provide solutions that deliver maximum value to owners by integrating design optimization, financial savings, factory-controlled quality, improved site safety, higher energy performance, and ecofriendliness that fit squarely into the lean building model." While architects were searching for building materials that met green building performance ratings, manufacturers were also investing in efficient ways to build lighter, stronger buildings that reduced waste. By the 1990s, many manufacturers began to implement lean manufacturing processes striving for ways to streamline construction. Manufacturing and technology advances are part of the story as to how "heavy" precast building systems became the streamlined modular precast wall enclosures used in sustainable buildings today. In addition to the increased use of technological solutions and industry advances, architects are adding value for owners by using an integrated design process. This process includes the early coordination of design aesthetic, performance, and scheduling goals with contractors and material suppliers.

Within the past 20 years, innovative architectural precast designers began to look at ways to make panels lighter (e.g., removing the 4 to 6 inches of structural concrete behind the 2

inches of architectural precast face mix). They have incorporated in its place functional features (e.g., perimeter framing, insulation, and drywall ready) while maintaining the ability to introduce reveals, projections, and true brick finishes. These lighter panels could also be made larger, thereby reducing the number of loads shipped to the site and speeding building envelope completion. Additionally, the movement toward off-site manufacturing in a controlled environment reduced site construction costs, reduced waste, and improved cladding quality. Another benefit of these lighter-weight panels is that they can also be used to re clad existing buildings using the as-built foundation and superstructure.

Industry has invested in the development of turnkey products that dovetailed into the concept of energy and waste reduction and the economical and efficient use of materials for the green building movement. "Reduce, reuse, and recycle" has become a design and engineering criteria for building materials. Over the past 20 years, The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has published increasingly stringent energy standards that require energy modeling and continuous insulation. These standards are embedded in the International Energy Conservation Code (IECC) and used as a criteria for many regulatory agencies as well as green certification programs. ASHRAE 90: Prescriptive Wall Insulation Requirements prescribes "insulation that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior, exterior, or is integral to any opaque surface of the building envelope."¹ Off-site, factory-controlled materials are key to meeting ASHRAE standards and

can provide financial and environmental benefits to project teams. Protecting the environment while conserving resources is embedded in today's lean manufacturing. Panelized lightweight precast concrete panels are part of a growing industry of efficient, sustainable building systems made possible by 21st century technology.

A lightweight precast concrete sustainable wall enclosure provides thermal efficiency, minimizes waste, increases performance, and streamlines the construction process. New composite systems are developed with the aid of high-tech digital fabrication systems and the direct exchange between architects and manufacturers to ensure design integrity. These precast concrete panel systems are built in temperature-controlled factories with digital tools that measure and monitor thermal performance to meet The International Energy Conservation Code thermal requirements from zones 1 through 7.

New wall systems include 2-inch concrete enclosures developed to match traditional as well as modern aesthetics. They can weigh up to 60 percent less than traditional precast wall systems. These concrete precast walls are modularized to include the facade, moisture/air barriers, insulation, and, in some examples, windows and interior framing. The complex wall enclosures designed for the 10-story Insignia corporate offices in Mexico and the ÉTS School of Technology Student Residence in Montreal, Canada, demonstrate the wide array of performance values that can be achieved in both northern and southern climates.

A performance study of the BioInnovation Center in New Orleans provides even more details of how lightweight precast concrete systems meet the demands for stringent aesthetic and green building standards.

© Alan Blakely/SlenderWall by Easi-Set



Strategies that maximized performance for the New Orleans LEED Gold BioInnovation Center included the choice of a high-performing, lightweight modular precast concrete wall system designed to meet LEED Gold standards.

CASE STUDY: BIOINNOVATION LABORATORY

LEED Gold and Energy Flows

In spite of a challenging program, climate, and location on a brownfield site, The New Orleans BioInnovation Center has been honored with numerous green building awards. This project is the first Louisiana laboratory to obtain the LEED Gold status and is a 2015 AIA Top 10 Green Buildings Award winner. Most of the credits obtained for LEED Gold certification of this project were related to both the siting and thermal savings.

Among several criteria, an award-winning Top 10 project should manage “energy flows and energy futures.” As documented in the award profile, “This project uses less energy per square foot than 89 percent of the buildings in the Labs21 benchmarking database of over 400 lab/office buildings nationally, 67 percent below the median EUI (343 kBtu/square foot/year).

The actual utility bills for the initial 12-month period (117 kBtu/square foot/year) closely track that projected by computer simulation (119 kBtu/square foot/year). This level of verified performance has been achieved through an efficient building skin:

- employing strategically deployed glazing with solar controls;
- highly targeted controls of airflow, temperature, lighting for virtually every space, and an efficient central plant.²¹

To achieve these high-performance thermal savings, the design team made strategic decisions that required an interweaving of site orientation with system design and material choices.

After evaluating the building envelope with consultants, the team selected a modular, precast concrete panel wall system integrated with high-performance glazing and sunscreens. Modeled by computer and in the field, the opaque panelized precast panels comprise approximately half of the building envelope. According to José Alvarez, AIA, LEED AP, NOMA, principle at Eskew+Dumez+Ripple, the 30-by-10-foot panels were modeled together with the windows and sunscreens to assure as much as possible a consistent thermal break between exterior and interior. The team reports that the 2-inch-thick precast cladding with 3½ inches of shop-applied, closed-cell foam insulation (R-21) provides continuous insulation, a continuous air barrier, and moisture control behind a perimeter stud-frame wall in a composite exterior wall system. According to Alvarez, the precast panels could also have incorporated prefabricated windows; however, to achieve the desired window to wall ratio, pattern, and panelization of the separate systems, it was impossible to integrate the systems at the factory. The design team worked

TABLE 1 EUI COMPARISON

	kBtu/ft ² - yr
Median Lab Site EUI*	343
New Orleans BioInnovation Center Actual Site EUI	120
Savings Compared to Median Site EUI	223
Median Lab Source EUI*	601
New Orleans BioInnovation Center Actual Source EUI	309

*As defined by Labs21 Benchmarking Tool database

Benchmarking the energy utilization intensity (EUI) as defined by ENERGY STAR as the annual use of energy per unit area of the BioInnovation Center against median lab EUI data.

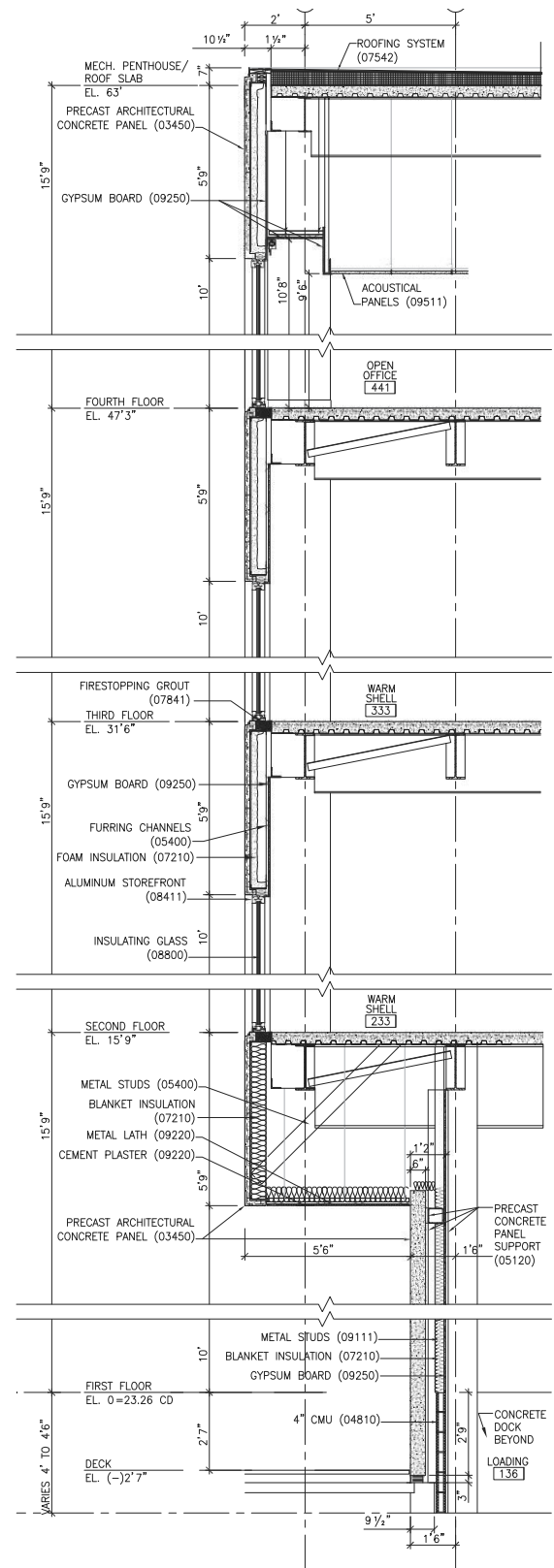
with the manufacturer to develop the detailing for the integration of the windows and the modular concrete panels at the site to achieve similar control and quality of the assembly.

Envelope modeling demonstrates that even with 68 percent glazing, the main entry facade is only the equivalent of 18 percent glass, thanks to the incorporation of the sunscreen and the highly insulated precast.² The lightweight precast concrete wall system provides a continuous R-19 closed-cell spray foam, minimizing thermal bridging.

The architects describe the program intent to be “urban acupuncture.” The 65,000-square-foot biotech lab is located on Canal Street and is a nonprofit incubator that supports life science entrepreneurs and economic growth. The institute provides state-of-the-art incubator labs and office facilities and to date has assisted with the creation of more than 200 new companies and over 400 jobs, raising \$93 million in capital funding. The client requested that the team explore LEED certification, and the architect recommended measures that would lower operating costs without impacting the schedule and meet LEED Gold. Computer modeling identified both high and low payback opportunities and helped the team develop strategies for both passive and active interventions. The final cost of the environmental solutions was equivalent to less than 2 percent of the project cost, and the payback was less than three years.

Some of the most obvious passive environmental strategies, such as limiting glazing to the Southwest in this hot and humid climate, were not possible due to the prominent loca-

Image: Eskew+Dumez+Ripple



SECTION THRU PRECAST CONCRETE WALL
2.1 | 6.3 | 1/2"=1'

A precast concrete wall panel section is designed to meet thermal requirements and built in a factory-controlled setting.

© Smith-Midland Corp.

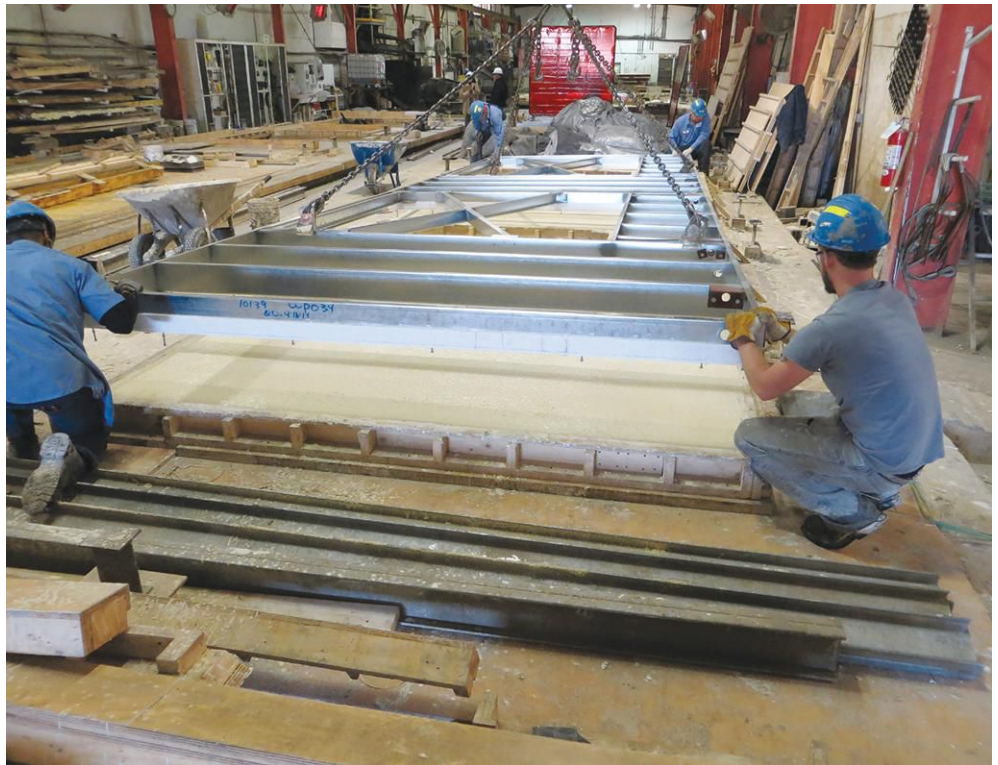
tion in the city and the desire to provide a transparent open facade. The urban setting required a system that could be easily constructed with a fast track schedule. The site also was located on poor soils, and a lightweight construction system was necessary to limit the cost of construction. The challenges of high-energy loads from equipment loads were met with active mechanical systems integrated with the building's program.

Choosing a high-performing modular wall system was an easy decision for the architects, says Mark Ripple, AIA, LEED AP, principal of Eskew+Dumez+Ripple. "For the cladding, we wanted a durable, hurricane-proof, and opaque system," he says. One that "would allow a fine architectural surface and yet be lighter in weight than traditional, heavier precast." A typical precast assembly weighs 78 pounds per square foot; however, the chosen lightweight system weighed only 28 pounds per square foot, allowing for smaller cranes and a faster construction schedule. According to Ripple, "The system has a lower carbon footprint than alternatives, and the structures supporting it can be lighter, which is important in our soft soils of Southern Louisiana." This decision provided savings in related structural framing, moment connections, and foundations while still meeting strict hurricane codes.

The project also received first place in the 2012 Gulf South Precast/Prestressed Concrete Association's Top Projects awards. The innovative frame for this project is mounted outboard of the floor edge. Then it is used after erection to receive drywall and other interior finishes, eliminating the cost of a traditional knee wall and opening up an additional 4 inches of available floor space around the entire perimeter. A thorough performance case study of this project is published in the Winter 2016 *High-Performance Magazine* at www.hpbmagazine.org/Case-Studies/New-Orleans-BioInnovation-Center-New-Orleans-LA/. Manufacturers are developing new lightweight precast concrete wall systems to meet the challenges of sustainable designers.

ENGINEERING VALUE: REDUCE, REUSE, RECYCLE

As engineers and manufacturers continue to drive for excellence, they are using new manufacturing and technology advances that streamline modern precast concrete wall enclosures. Value in construction materials can be achieved in many ways. Building enclosures are complex systems. The life of a building depends on the durability of its enclosure. Ap-



Manufacturers can guarantee structural and thermal control with factory-built panelized enclosures that control the random factors that impact field installation.

pearance, thermal control, moisture mitigation, structural strength, and constructability are some of the main areas that a design team will investigate when selecting materials for a building enclosure.

Lighten the Load

The components of lightweight precast concrete panels maximize the durability of concrete while lightening the load of this versatile material. Computerized equipment controls and digital fabrication have modernized and simplified the creation of new materials. Hybrid lightweight precast panels weighing as little as 28 pounds per square foot may combine the following materials:

- 2-inch architectural precast concrete with integral water repellent in a wide array of finish, color and texture options.
- Polyvinyl alcohol (PVA) reinforcement fibers dispersed throughout the concrete to form a molecular bond with the concrete. This reduces crack formation and provides multidimensional reinforcement. They also improve the concrete's resistance to impact, shatter and abrasion.

- Lightweight wire mesh to increase structural performance.
- Precise variable air spaces (½ to 2½ inches).
- Vapor barrier placed in the appropriate location for climate control.
- Continuous insulation installed in controlled conditions and guaranteed to meet required energy codes.
- Galvanized steel-stud frame (4 and 6 inches).
- Firestopping.
- Windows properly flashed as part of a complete wall assembly.
- Interior framing drywall ready.

Lightweight precast concrete panels are 66 percent lighter than traditional architectural precast wall systems. The factory control of design elements and on-time delivery methods provide surface protection as well as thermal control.

▶ Continues at ce.architecturalrecord.com

Celeste Novak is an architect and author whose Michigan practice focuses on sustainable and universal design. www.linkedin.com/in/celestenovak

Contemporary design has assigned a much more prominent role to doors and windows in the home. Architect: Booth Hansen



Photo: Steve Hall © Hedrich Blessing

Capturing Timeless Values with Contemporary Design

Modern multi-panel door systems incorporate aesthetics, efficiency, and performance

Sponsored by LaCantina Doors | By Amanda Voss, MPP

Contemporary craftsman. American farmhouse. Modern shed. The box home. Contemporary design is radically shifting the look of America's homes.

Windows and doors play a leading role in contemporary design. A stamp of the movement is to increase both the amount and the size of windows and doors on the facade. Glass is maximized, and frames, stiles, and rails are kept crisp and minimal. Doors, in particular, receive specific attention, as walls are supplanted with multi-panel door systems, eliminating the barrier between indoors and out.

In partnership with this focal aesthetic role, advancements in multi-panel door systems and component technology allow contemporary design to achieve energy-efficiency goals, performance, and service life, creating a project that transcends trends.

EMERGING TRENDS: CONTEMPORARY DESIGN

A key shift is underway in architectural home design and style. The rise of contemporary design in homes draws from the pages of known historical styles, preserving the essentials of the original movement while updating these elements with clean lines and modern materials. A modern or contemporary craftsman home will still employ low-pitched roof lines, decorative brackets, an extended front porch, and 4-over-1 or 6-over-1 double-hung windows, but these elements will be modernized with simple lines and thin stiles and rails at the windows.

► Continues at ce.architecturalrecord.com

Amanda Voss, MPP, is an author, editor, and policy analyst. Writing for multiple publications, she also serves as the managing editor for Energy Design Update.

CONTINUING EDUCATION



1 AIA LU

Learning Objectives

After reading this article, you should be able to:

1. Discuss emerging trends in windows and doors.
2. Identify the types of multi-panel door systems available and their most appropriate applications.
3. Explain what performance testing and certifications are for windows and doors, and how they measure product performance.
4. Describe the types of component improvements and innovations that enhance contemporary design, while also enabling greater energy efficiency and performance.

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Specifying Extruded Aluminum Trim for Drywall Surfaces in Multifamily Residential Projects

Sponsored by TAMLYN | By *Rebecca A. Pinkus*



Detailing needs to meet an architectural design aesthetic along with meeting durability and sustainability requirements. Extruded aluminum trim interior products can help meet all of these needs.

All images courtesy of TAMLYN

While extruded aluminum trim has become a popular material for a building's exterior—usually as cladding or a facade—it is also increasingly being used indoors to change the face of drywall construction. Extruded aluminum trim provides a high-quality, practical material that can be used to create a featured design and focus in a space. The variety of shapes, forms, and profiles provide designers with a material that has the appearance of fine metal craft, and that can be seamlessly integrated with drywall and panelized surfaces for significantly less than custom metalwork. Moreover, extruded aluminum trim is easy to install. It provides a clean look and works well with modern designs. This section will provide an introductory overview on how and why extruded aluminum trim has become a popular material for interior design.

DETAILS AND ARCHITECTURAL DESIGN AESTHETICS: WORKING WITH DRYWALL IN MULTIFAMILY PROJECTS

The practice of using $\frac{5}{8}$ -inch-thick drywall on metal studs is still considered one of the easiest

and most cost-effective ways to define interior spaces. It's simple to install and also easy to remove. Not surprisingly, it is very popular in projects where designers and architects face the challenges of balancing cost, schedules, and client design goals. Multifamily residential projects are no exception.

When it comes to drywall interiors, multifamily residential projects have a unique set of challenges. In particular, these buildings are subject to much more wear and tear than single-family homes because of frequent occupant turnover. When tenants move in and out of the units, there inevitably will be drywall damage from oversized items that puncture walls, chip corners, damage overhead archways, and otherwise impact the wall surface. Repairing or replacing damaged surfaces can be costly, but leaving them untreated reflects poorly on the overall property. The trick is to design the space with materials that provide modern architectural design aesthetics while accounting for the bumps, bashes, and dents that come with tenants. One area where designers can keep drywall looking good is trim details.

CONTINUING EDUCATION



1 AIA LU/HSW



1 IDCEC CEU/HSW

Learning Objectives

After reading this article, you should be able to:

1. Describe how and why extruded aluminum has become a popular material for interior design.
2. Summarize and discuss the sustainable features and performance characteristics of aluminum.
3. Discuss the various profiles and finishes that are available for extruded aluminum.
4. Explain how extruded aluminum trim can be used to improve and enhance drywall surfaces in multifamily residential projects.

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Trim products in general are made of a wide variety of materials, depending on the application. Some of the more commonly used materials include polyvinyl chloride (PVC), wood, rubber, and aluminum. Each material has its advantages and disadvantages, and some trim materials are better for certain applications than others—some are also more costly than others, and so they may not be the best choice for multifamily residential projects. When it comes to cost effectiveness and durability, though, extruded aluminum trim offers a sleek, modern aesthetic that can help multifamily residential projects keep costs down. We'll discuss those qualities in the next section.

As an interior design material, extruded aluminum trim is considered a top performer for many reasons, but particularly because it is lightweight, inexpensive, and is aesthetically pleasing. This material is versatile and can be used in place of more expensive metals to provide high-quality details on drywall surfaces that both meet a designer's aesthetic eye and protect drywall with a strong, durable material. Extruded aluminum is also easy to install, which can drastically reduce project times and costs compared to more custom metalwork.

Modern Design Aesthetics in Multifamily Residential Properties

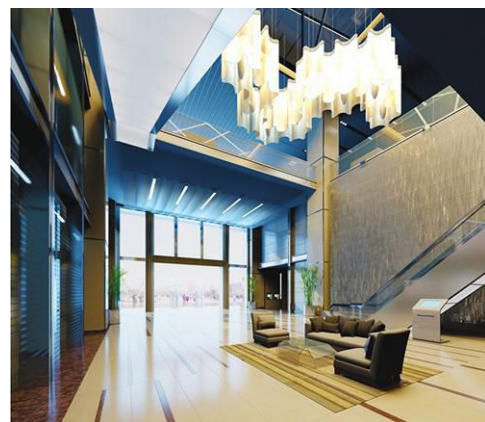
Before we go any deeper into the performances characteristics of aluminum, it helps to get a better sense of how design trends have changed

recently with the two key demographics moving into the multifamily residential market, and how that impacts material choices for drywall interiors.

Baby boomers and millennials have had an impressive impact on multifamily residential properties, not only in terms of the features and amenities, but also in the meaning of the space. Apartments and condominiums are no longer just places to live, but rather they reflect—and sometimes provide—aspects of the occupants' lifestyle. For example, new building projects may incorporate ways to promote community through shared indoor or outdoor spaces. And building occupants value their individual residential units as a way to highlight their unique style. Many developers are taking on a "resident-first" tactic to project design, and that approach includes elements of a new modern design aesthetic.

One trend that lends itself well to extruded aluminum trim is "mixed-material" design. Millennials in particular tend to be happy to mix older, more rustic materials with sleek, modern looks. Aluminum trim is versatile enough that it can accomplish either look: a clear anodized finish, for example, can keep the natural metal look, or a custom powder coating can add a splash of color into a space of plain drywall.

Also worth considering is dwelling size. Baby boomers are in their downsizing stage of life, and millennials tend to be minimalists, so both demographics benefit from creative techniques that can fit added design features into the



Millennials and baby boomers make up the highest percentage of multifamily residential occupants. Extruded aluminum trim interiors can meet the modern design aesthetics of both generations and everyone in between.

structure of the space. Walls that look like they are floating or with deliberate shadow lines built in, for example, can add a unique look to a small apartment or condominium unit. This attention to detail can make a multifamily project stand out from other buildings and help draw tenants. As we will see, the variety of aluminum trim profiles and finishes can play an important role in a design while keeping projects within a fixed income or renter budget.

PERFORMANCE CHARACTERISTICS AND SUSTAINABILITY FEATURES OF EXTRUDED ALUMINUM

Material performance and sustainability are two top requirements in modern architectural design. This applies to everything from design to materials, and in the case of trim, extruded aluminum is one of the top materials. Not only does aluminum have numerous sustainability features, it also has performance characteristics that make it an affordable choice for both exterior and interior projects. In this section, we will look at what extruded aluminum is and how it is produced to better understand how and why it is an excellent material for architectural purposes.

► Continues at ce.architecturalrecord.com

Rebecca A. Pinkus is an independent communication consultant, writer, and editor focusing on the intersection of technology, environment, and human health. She has contributed to more than 35 continuing education courses and publications through Confluence Communications. www.confluencec.com



Extruded aluminum trim is lightweight and easy to install, and it greatly enhances both the aesthetic design and performance of a drywall surface.



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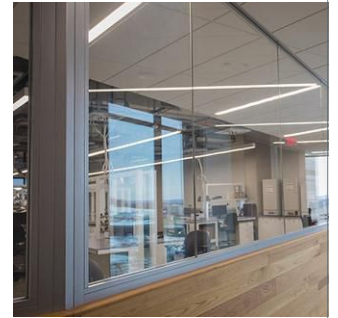
Product Application:

- The University of Kansas – Earth, Energy & Environment Center, Lawrence, KS
- General Catalyst Office, San Francisco, CA

Performance Data:

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- Fulton Center, New York, NY

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New and Upcoming Exhibitions

The Bibliothèque nationale de France: Portrait of a project 1988–1998

Paris
April 10–July 22, 2018

Commemorating the 20th anniversary of the Bibliothèque nationale de France, this exhibition, curated by its architect, Dominique Perrault, reexamines the project from its design to its furnishings, landscaped gardens, and place in what was a newly created neighborhood. Perrault includes films, sketches, plans, and models from both his own archive and public collections to reevaluate the well-known library. More information at fnac.com.

Palmyra: Loss and Remembrance

Los Angeles
April 18–May 27, 2019

This installation at the J. Paul Getty Museum includes sculptures from the collections of Ny Carlsberg Glyptotek in Copenhagen, historical engravings, and photographs to show life between the 1st and 3rd centuries AD in the ancient Syrian city of Palmyra. For details, go to getty.edu.

David Chipperfield Architects Works 2018

Vicenza, Italy
May 12–September 2, 2018

The architect's exhibition of 15 projects at the Basilica Palladiana will be the first contemporary architecture show at the venue in 12 years. Chipperfield will show projects from London, Berlin, Milan, and Shanghai. For more information, visit chipperfield.abacoarchitettura.org.

Ongoing Exhibitions

Women House

Washington, D.C.
Through May 28, 2018

Conceived as a sequel to the famous 1972 exhibit *Woman House*, by Judy Chicago and Miriam Schapiro, this exhibition examines the persistence of stereotypes about the house as a feminine space, in photography, video, sculpture, painting, and installations created by female artists from the 1960s to the present. Organized by La Monnaie de Paris, the exhibit originally debuted in Paris. At the National Museum of Women in the Arts. More information at nmwa.org.

Junya Ishigami: Freeing Architecture

Paris
Through June 10, 2018

For the first time, Fondation Cartier pour l'art

contemporain is staging a solo architecture show featuring the work of acclaimed Japanese architect Junya Ishigami. The exhibit highlights 20 of the architect's projects, including films, drawings, 40 custom-made models, and other relevant documents. See more at fondationcartier.com.

Arakawa and Madeline Gins: Eternal Gradient

New York City
Through June 16, 2018

This exhibition looks at the nearly five-decade collaboration between artist Arakawa and his partner, poet and philosopher Madeline Gins, which culminated in architectural designs realized on four sites across Japan and one in East Hampton, New York. Hand drawings, archival material, manuscripts, slides, and an architectural model are among the objects featured in the display designed by Norman Kelley. Visit arch.columbia.edu for more.

Image Building: How Photography Transforms Architecture

Water Mill, New York
Through June 17, 2018

This exhibit, organized by guest curator Therese Lichtenstein, conducts a survey of historical and architectural photographers' work from the 1930s to the present, exploring the relationship between architecture, photography, and the viewer. At the Parrish Art Museum. More at parrishart.org.

Public Parks, Private Gardens:

Paris to Provence
New York City

Through July 29, 2018

This exhibition focuses on a boom in landscape design in the 19th century that transformed France's public spaces and personal gardens. The movement is illustrated through paintings, photographs, and objects like vases from the Metropolitan Museum of Art's collection. Details at metmuseum.org.

Lectures, Conferences, and Symposia

Miart

Milan
April 13–15, 2018

This contemporary-art fair, which incorporates work by 20th-century designers up to the present, will launch the 23rd edition of Milan Art Week. London design critic Hugo Macdonald will curate an exhibit of collectibles that examines the relationship between galleries and designers. Details at miart.it/en.

Salone del Mobile.Milano

Milan
April 17–18, 2018

The annual furniture fair's 57th edition will include more than 2,000 exhibitors, installations, and the bestowal of its recently created award, which be given out for the third time this year. The biennial international kitchen exhibition, EuroCucina, will also be running in parallel, with 120 participating companies. See more at salonemilano.it.

Confluences: Place, Change, and Meaning on the Mississippi

St. Paul
April 21, 2018

Organized by the Society of Architectural Historians, this seminar looks at the redevelopment of postindustrial land in waterfront areas along the Twin Cities Mississippi River Corridor. Various planners, designers, historians, and community activists will speak. More at sah.org/conferences-and-programs.

Dumbarton Oaks Garden and Landscape Studies Symposium: Military Landscapes

Washington, D.C.
May 4–5, 2018

This two-day event focuses on the potential of landscape architecture to shape land transformed by war and military infrastructure. More than 10 speakers will address the formation of contemporary and ancient sites ranging from the World Trade Center to the Ho Chi Minh Trail. More information at doaks.org.

Iconic Houses 2018

New Canaan, Connecticut
May 15–18, 2018

Hosted by the Iconic Houses Foundation, the fifth edition of the conference will consist of a series of lectures focused on Modernist houses on the East Coast by Philip Johnson and the Harvard Five, as well as houses in Latin America. Tours of nearby houses will include a Frank Lloyd Wright Usonian house in Pleasantville, NY, Russel Wright's Manitoga home in Garrison, NY, and the Marcel Breuer House, which the architect originally designed for the MoMA garden, at Kykuit in Tarrytown, NY. More information at iconichouses.org.

2018 Festival of Architecture

Saint John, New Brunswick
May 30–June 2, 2018

The four-day conference, cohosted by the Royal Architectural Institute of Canada and the Architects' Association of New Brunswick, will feature lectures, continuing-education sessions, a trade show, and an exhibition titled *Music of the Eye: Architectural Drawings of Saint John and its*

Region, 1822–1914. Keynote speakers include architects Odile Decq and Diébédo Francis Kéré. More information at festival2018.raic.org.

Competitions

Art Prison

Deadline: April 11, 2018

Run in partnership with the Italian government, this competition seeks proposals for transforming an abandoned fortress on a Sicilian island into a center for contemporary art. Jurors include Daniel Libeskind and Manuel Aires Mateus. For more information, go to youngarchitectscompetitions.com.

Coexist: Rethinking Zoos

Deadline: April 18, 2018

Seeking conceptual proposals for the Barcelona Zoo in terms of spatial organization of animal enclosures and structural changes, this competition challenges participants to broadly reconsider the architecture of zoos to promote animal well-being and conservation over exhibition. More at archstorming.com.

The Museum of Language, London

Deadline: April 30, 2018

This competition seeks design proposals for a museum of language in London that will deconstruct the science of linguistics into aspects of speech, script, and sense, and contain an archive of world languages past and present. More at archasm.in.

RESIDE: Mumbai Mixed Housing

Deadline: April 30, 2018

This competition seeks proposals for a mixed-income development that will reconcile an indigenous fishing community and affluent newcomers buying into the neighborhood for waterfront views. The jury, which includes Deborah Berke and Joshua Prince-Ramus, is looking for designs that promote social inclusion and break down spatial segregation. Details at archoutloud.com/reside.

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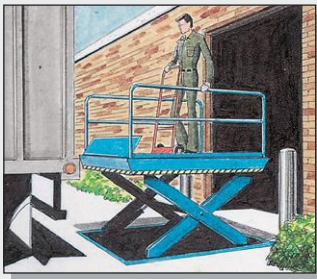
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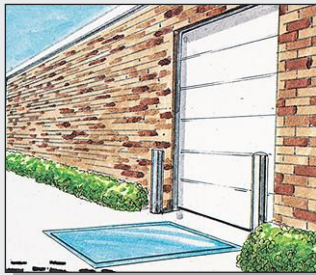
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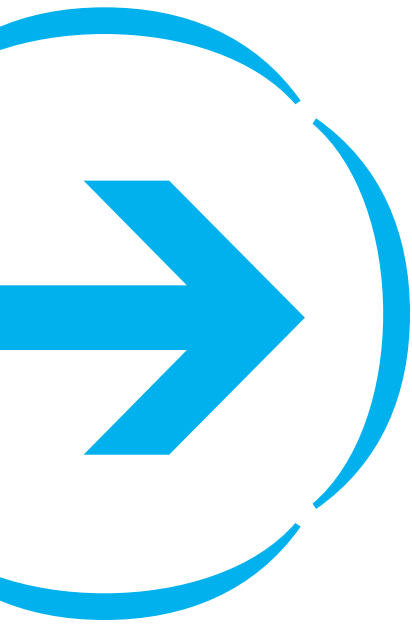
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CALL FOR ENTRIES

Record Interiors

The editors of **ARCHITECTURAL RECORD** are currently inviting submissions for the **2018 RECORD INTERIORS** issue. 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. The projects may be new construction, renovation, or adaptive reuse; commercial or residential; domestic or international. Special consideration will be given to works that incorporate innovation in design, program, building technology, sustainability, and/or materials. The winning projects will be featured in the September 2018 issue. The fee is US\$75 per entry.



SUBMISSION DEADLINE: MAY 18, 2018

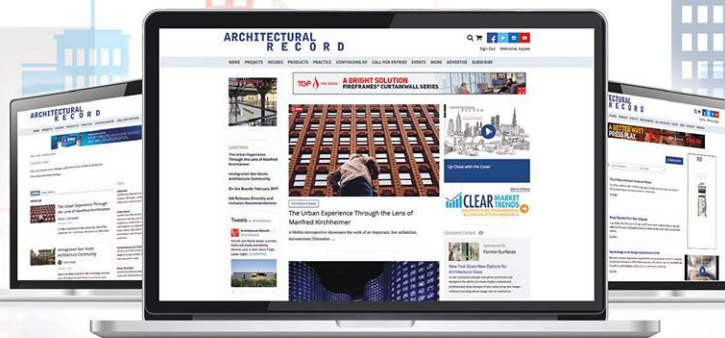
For full details and to submit your entry, visit: architecturalrecord.com/call4entries.

E-mail questions to arcallforentries@bnpmedia.com. Please indicate the contest name as the subject of your e-mail.

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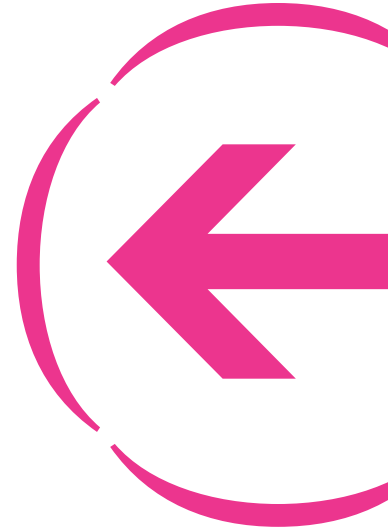
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CALL FOR ENTRIES

Record Kitchen & Bath

The editors of **ARCHITECTURAL RECORD** are currently accepting submissions for the **2018 RECORD KITCHEN & BATH** competition. Entry is open to any registered architect, as well as any designer working in collaboration with architects, who has completed an innovative residential and/or commercial kitchen or bath project in the last year. We are looking for projects that feature unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be functional, sustainable, and beautiful. Winning projects will be featured in the September 2018 issue. The fee is US\$75 per entry.

SUBMISSION DEADLINE: MAY 18, 2018



For full details and to submit your entry, visit: architecturalrecord.com/call4entries.

E-mail questions to arcallforentries@bnpmedia.com. Please indicate the contest name as the subject of your e-mail.

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Advance Lifts Inc	167	Dryvit Systems	86	Precast/Prestressed Concrete Institute	62
AGC Glass Company	CV4	Easi Set Worldwide	19, 156 - 159	RH Tamlyn & Sons	54, 162, 163
American Specialties, Inc.	39	Electrix, LLC	45	SAFTIFIRST	27
Architectural Record - CE Academy	164	Forms & Surfaces	24	Scranton Products	60
Architectural Record - CE Education Exchange	124	Fry Reglet	59	Seiho	51
Architectural Record - Guess The Architect	40	HD Expo	129	Seves Glass Block	9
Architectural Record - Record On The Road Atlanta	131	Hörmann High Performance Doors	142	Sherwin-Williams	46, 47
Architectural Record - Power Of Print	171	Huntco Supply	26	Simonswerk	29
Architectural Record - Record On The Road Boston	50	ICFF®	132	Skyscraper Museum	169
Architectural Record - NEAL Awards	161	Infinity Drain	167	Sonneman	CV3
Architectural Record - Website	168	Inpro Corporation	141	Steel Institute Of New York	6
Arktura LLC	23	Invisible Structures Inc	169	Sun Valley Bronze	12
Armstrong World Industries	CV2, 1	LaCantina Doors	160	Think Wood	4, 5
B+N Industries, Inc.	33	Landscape Forms	48	Tournesol Siteworks	31
Bison	41	Lightfair International 2018	22	Unilock	7
C. R. Laurence Co., Inc	58	Lonseal, Inc.	147	U.S. Green Building Council	85
CAST CONNEX	55	Mitsubishi Electric	71	USG	10, 11
Construction Cost Management	171	Modern Fan Co., The	36	Versico Roofing Systems	73
Construction Specialties	137	modular Arts	61	Vitro Architectural Glass (Formerly PPG Glass)	14, 15
Construction Specialties	149	NanaWall Systems	139	VT Industries	35, 68
Coronet	20	NeoCon	34	Walpole Outdoors	30
Coverings	133	Neolith®	151		
Doug Mockett & Company, Inc.	63	New Millennium	153		
Dri-Design	17	Oldcastle BuildingEnvelope®	2, 3		
		Ornamental Metal Institute Of New York	8		
		Petersen Aluminum	52		



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