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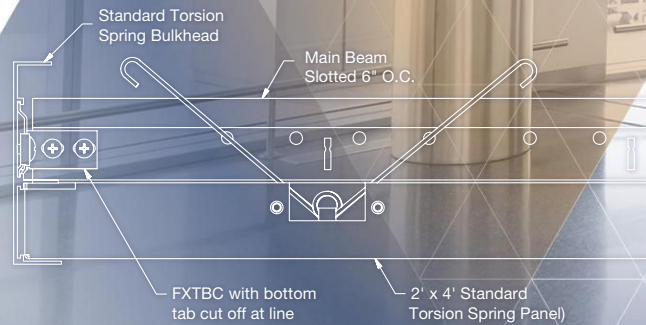
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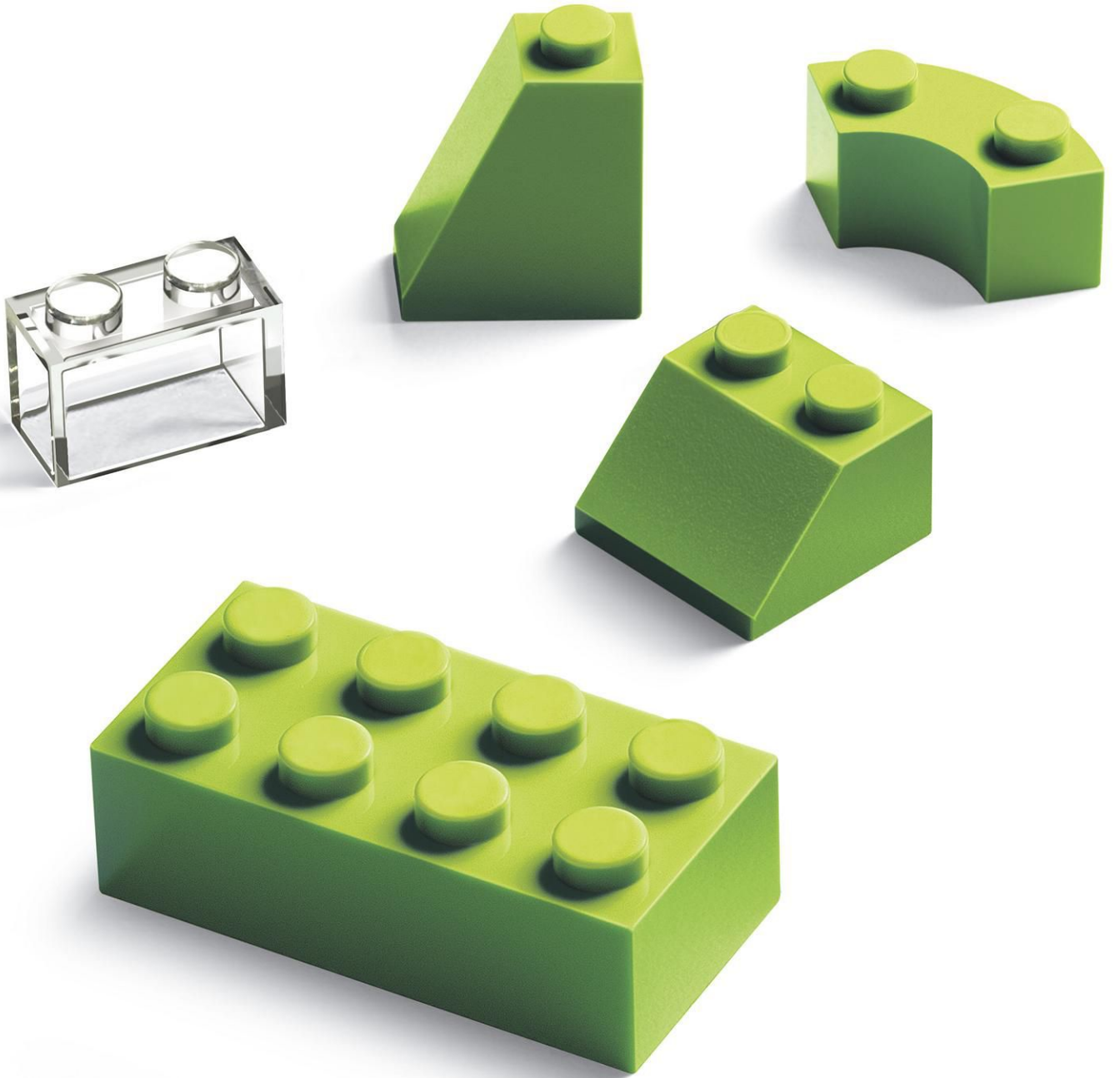
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Architect: Rossetti
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Top Seed

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ARCHITECTURAL RECORD (ISSN: Print 0003-858X Digital 2470-1513) September 2017, Vol. 205 No. 9. Record is published 12 times annually, monthly by BNP Media II, LLC., 2401 W. Big Beaver Rd., Suite 700, Troy, MI 48084-3333. Telephone: (248) 362-3700, Fax: (248) 362-0317.

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Periodicals Postage Paid at Troy, MI and at additional mailing offices.

FOR SINGLE COPY SALES OR BACK ISSUES ONLY: contact Ann Kalb at (248) 244-6499 or KalbR@bnpmedia.com.

POSTMASTER: Send address changes to: ARCHITECTURAL RECORD, P.O. Box 16387 North Hollywood, CA 91615.

CANADA POST: Publications Mail Agreement #40612608. GST account: 131263923. Send returns (Canada) to IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2.

CHANGE OF ADDRESS: Send old address label along with new address to ARCHITECTURAL RECORD, P.O. Box 16387 North Hollywood, CA 91615.

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WEBSITE: architecturalrecord.com. SUBSCRIBER SERVICE: 877/876-8093 (U.S. only); 818/487-2077 (outside the U.S.). Website Registration: 847/559-7398. E-mail: AR@pubservice.com. If the Post Office alerts us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within one year. **INQUIRIES AND SUBMISSIONS:** Letters, Beth Broome; Practice, Suzanne Stephens; Books, Suzanne Stephens; Lighting and Interiors, Linda C. Lentz; Architectural Technology, Joann Gonchar; News, Anna Fixsen. **REPRINTS:** architecturalrecord@theygsgroup.com.



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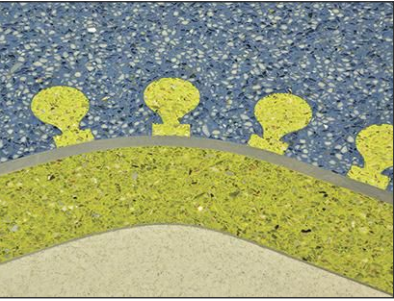


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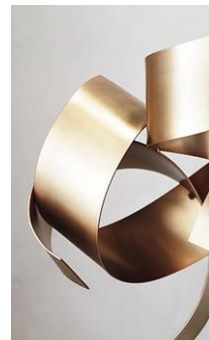
Alison Habermehl

This penthouse en suite is for a creative woman whose daytime life often rolls into the nighttime social. She loves the best of the best and is very particular.

Toronto It is a city that never looks back, which is also a great definition for contemporary design. Even so, I wanted to create an elegant bathroom that deserves multiple looks. The rounded shower and dark tile work create a gracious cocoon that is designed to perform double duty. For relaxing in the evening, there's the double rain head shower system. For rejuvenation in the morning, I included the Percy® Personal Shower Set with Hand Shower.

I added a few luxurious touches like a floating vanity, then introduced custom ombré fabric, strategic lighting and soft colors like blush to add warmth and quiet drama to the room's clean lines. By incorporating two different sizes of under counter sinks from the Pop® Collection, I increased usability without threatening the room's minimalistic origins. All that's necessary, with nothing that's not.

For more on Alison's room,
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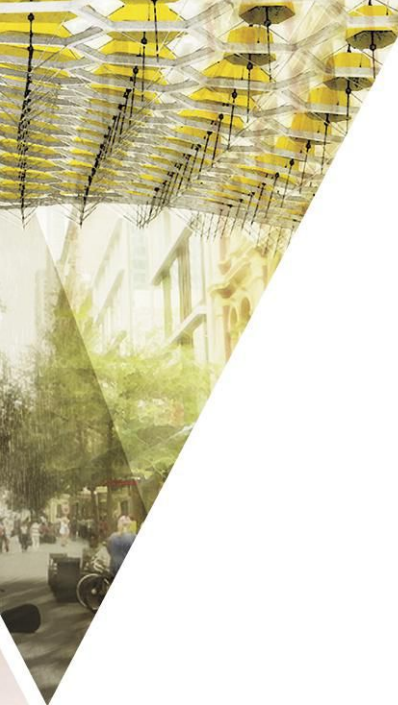
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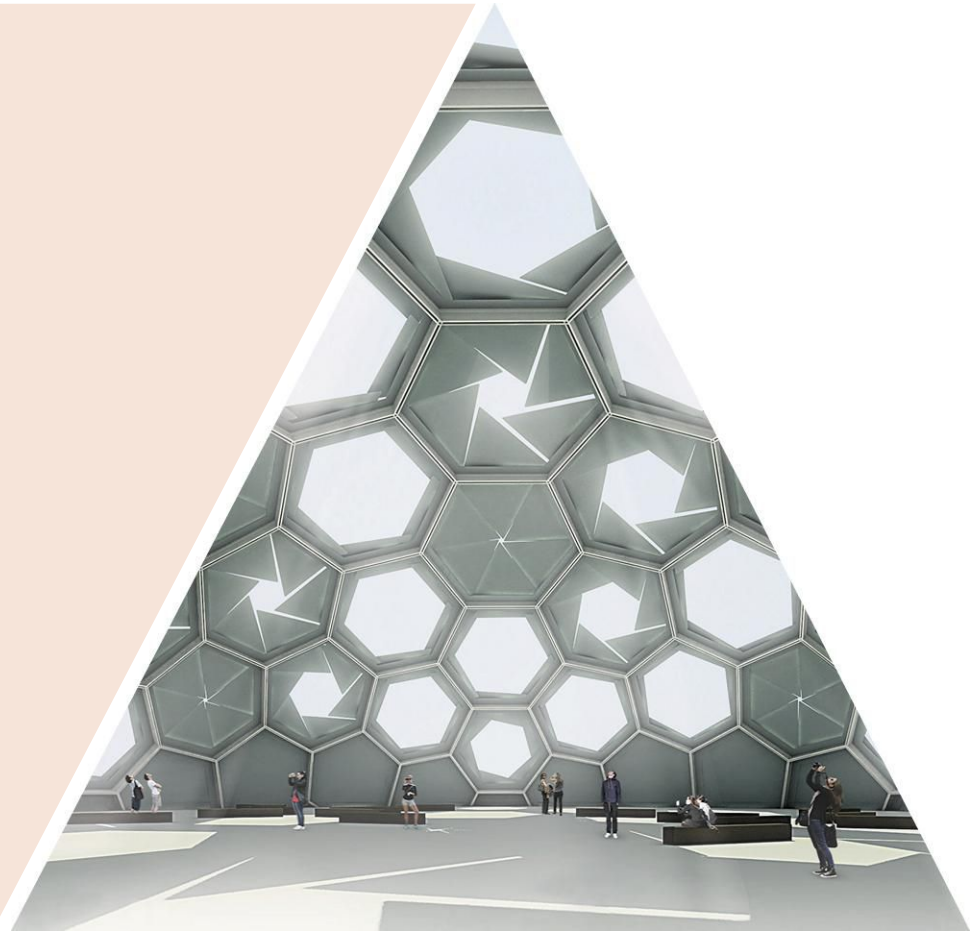
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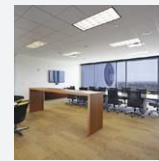
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The Benefits of Art-Grade Bronze for Residential, Commercial, and Hospitality Applications

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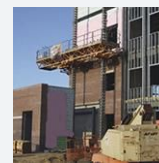
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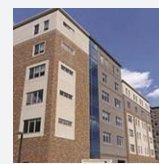
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Equal Opportunity

Gender bias seems even more deeply entrenched in the tech industry than in architecture.

EARLIER THIS SUMMER, an online firestorm broke out when a controversial memo written by a Google employee went viral. In it, a male staffer attacked the corporate diversity programs that are attempting to close the gender gap in the company, where 80 percent of its technical workers are men.

Silicon Valley has a long rap sheet when it comes to incidents that appear to discriminate against women. But the Google memo has created a particularly loud uproar. Though its author defended what he wrote as free speech, he was fired from Google for violating the company's code of conduct by "advancing harmful gender stereotypes." After his ouster, he was embraced by several far-right media outlets and took to wearing T-shirts that said "Goolag" and "Truth."

But what truth was he claiming? His 10-page memo cited biology as the leading reason that men were more successful in tech professions than women, not prejudice. He accused the political left of tending to "deny science concerning biological differences between people (e.g., IQ and sex differences)."

As Susan Wojcicki, the CEO of YouTube, responded, "What if the memo said that biological differences amongst Black, Hispanic, or LGBTQ employees explained their underrepresentation in tech and leadership roles? Would some people still be discussing the merit of the memo's arguments? . . . The language of discrimination can take many different forms, and none are acceptable or productive."

While women want equal opportunity to compete fairly in the workplace, based on their abilities and free of social and cultural biases, this is particularly tough to achieve in the tech world. At a time when many educators have been trying to steer girls and young women into science, technology, engineering, and mathematics (STEM), the numbers of female graduates in those fields remains low. A report from the American Association of University Women two years ago attributed the widening gap in some STEM fields to ongoing gender bias in education and to the notorious culture of discrimination in the computing industry that discourages women from entering the field in the first place.

Architecture, of course, is another arena grounded in mathematics, engineering, and technology, but one where women have begun to make gains. In this issue, RECORD is proud to announce the magazine's fourth annual Women in Architecture Design Leadership Awards. This year's honorees include Marion Weiss, of Weiss/Manfredi, as Design Leader, whose projects embrace technological and engineering challenges, while engaging both individual users and the larger public realm. Billie Faircloth, a partner at KieranTimberlake, is cited as Innovator, for exploring the impact of science and technology on architecture. Her contributions extend from materials research to developing digital tools such as Tally, an application for Revit that provides accurate life-cycle data to designers. Elizabeth Whittaker, founder of the forward-looking firm



MERGE, is being honored as New Generation Leader, and Sarah Whiting, dean of architecture at Rice, is receiving the Educator's award, for guiding the school in both research and architectural production. Finally, Deanna Van Buren, who has been applying her architectural skills to work in social and restorative justice, is being honored as Activist (page 34).

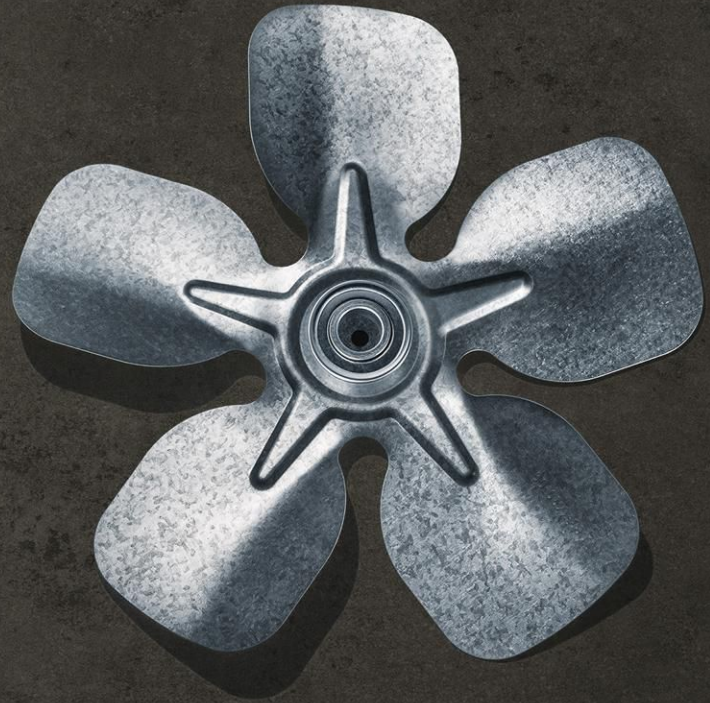
Ironically perhaps, this is RECORD's annual issue on Interiors, an area of practice once regarded as a ghetto for the talents of women architects. That too is changing, and both men and women are deeply engaged in the projects published in the pages ahead. RECORD's cover features Enigma, an over-the-top Barcelona restaurant that lives up to its name, designed by this year's Pritzker Prize-winning firm RCR Arquitectes—run by Rafael Aranda, Carme Pigem, and Ramon Vilalta—with Pau Llimona (page 92). Neri&Hu Design and Research Office, founded by Lyndon Neri and Rossana Hu, has created The Garage—B+ Automobile Service Center in Beijing, a witty adaptive-reuse project that houses a company's offices and its auto-repair business (page 110). In another adaptation, a former 19th-century office in Stockholm was transformed into an elegant apartment, blending old and new elements in surprising ways, and drawing on the talents of both men and women in that city's Note Design Studio.

Gender and lack of diversity are still big problems in the practice of architecture. But someday soon, we can hope, such discussions will become irrelevant.

Cathleen McGuigan
Cathleen McGuigan, Editor in Chief



+



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“This is a travesty . . . This—from what we can tell—looks like a tacky condo.”

—Hyperallergic editor and cofounder *Hrag Vartanian*, writing about the expansion of Paul Rudolph’s 1960s-era Orange County Government Center.

Chicago Architecture Biennial to Kick Off Round 2

BY DANIELLE COHEN

THIS MONTH, the city of Chicago will ring in the sophomore edition of its architecture biennial, the critically acclaimed inaugural event in 2015 having set the stage for the Windy City to become a showcase for architectural innovation.

This year’s theme, “Make New History,” curated by Sharon Johnston and Mark Lee of L.A.-based firm Johnston Marklee, picks up on thematic threads from 2015 while emphasizing site specificity, artistic collaboration, and urban planning. Johnston and Lee have organized a myriad of exhibits, performances, and installations that will radiate from the Chicago Cultural Center (the Biennial’s central hub) to six anchor sites, five partner institutions, and four additional special-project locations. “We’ll see more projects that address the civic landscape—techniques of mapping, studying ways to find new approaches to the civic scale,” says Johnston.

The Chicago Architecture Biennial (CAB), which was the first of its kind in North America, began as part of a sweeping effort by the city to brand itself as a cultural epicenter. It worked: 120 international practices participated, and over half a million visitors passed through the Biennial’s various venues.

But as much as CAB 2017 will attempt to replicate the success of the previous edition, it is largely focused on revitalization, both conceptually and in its commissioned projects. For example, several adaptive-reuse efforts will respond to underutilized spaces. The curators will render the labyrinthine hallways of the Chicago Cultural Center more exhibition-friendly by recreating the arcade-style galleries that Brooklyn firm SO-IL installed for the 2015 Biennial. The Chicago Architecture Foundation, meanwhile, will mount *Between States*, where 50 Chicago-based designers—ranging from SOM to UrbanLab—have imagined a way to reinvent an underappreciated, underperforming, or dilapidated space in the city.



Sharon Johnston and Mark Lee (right) are focusing on history for this year’s Chicago Architecture Biennial. For instance, Kéré Architecture was selected for a conceptual redesign of the city’s Tribune Tower and turned to the idea of the Tower of Babel for inspiration (above).

In keeping with its history-oriented theme, CAB 2017 will plumb the depths of Chicago’s architectural legacy. Notably, in the Cultural Center’s Yates Hall, more than one dozen proposals for a redesign of the historic Tribune Tower will be displayed in the form of 16-foot-tall architectural models by firms including





James Welling's *Chicago* series will be on view in the Water Tower. The images are digitally manipulated to create areas of unnatural color.

Berlin-based Kéré Architecture and Zurich- and London-based Sergison Bates architects. The exhibit plays off of two moments in the tower's history—the original 1922 competition for its design won by Raymond Hood and John Mead Howell, and a 1980 exhibition by Stanley

Tigerman and Stuart Cohen, which tasked architects such as Helmut Jahn, Robert A. M. Stern, and Frank Gehry to come up with their own theoretical designs.

In order to continue to elevate the Biennial's scope to a more global scale (last time, participants represented more than 30 countries), Johnston and Lee have also included national and international projects. Performance artists Gerard & Kelly will present the third part of their choreographic piece *Modern Living* at Mies van der Rohe's Farnsworth House, located an hour outside Chicago, while film footage of the first two parts (performed at the Schindler House in

California and Philip Johnson's Glass House in Connecticut, respectively) will be screened at Chicago's historic Water Tower.

Mies's structures, both completed and unrealized, will feature prominently in the Biennial: at the Water Tower, James Welling will showcase manipulated photographs of the Illinois Institute of Technology and Chicago's Lake Shore Drive Apartments.

Mies's work will also appear at the DePaul Art Museum, where a solo exhibition by Mozambican-Portuguese artist Angela Ferreira will establish connections between two unrealized projects on opposite sides of the world: an unbuilt 1913 house in the Netherlands by Mies, and the Zip Zap Circus School in Capetown, designed by Mozambican architect Pancho Guedes.

Also new this year, the Biennial will join forces with the sixth annual EXPO CHICAGO (an international contemporary-art fair at the Navy Pier) in presenting Here Hear Chicago, a collaboration between architect Jeanne Gang and artist Nick Cave. The series of performance pieces will involve participants in Cave's surreal *Soundsuits*, interacting with objects designed by Studio Gang.

These sorts of unexpected collaborations will be integral to the success of the 2017 Biennial, says Johnston. "We see this Biennial as a chance to open up opportunities for different kinds of practices and all generations of architects and designers," she says. "The real strength will be if we can expand audiences and bring architects together."

The Chicago Architecture Biennial will run from September 16 to January 7. ■

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Last days of the Smithsons' Robin Hood Gardens

BY HUGH PEARMAN

THE “STREETS IN THE SKY” invented by Alison and Peter Smithson at their simultaneously celebrated and notorious Robin Hood Gardens in East London are still partly inhabited. But the longer of the two snaking Brutalist concrete buildings forming this once-exemplary public-housing project stands empty and boarded up. Demolition will start before the end of the year. A long campaign to save it, waged by leading architects including Richard Rogers and the late Zaha Hadid, fell on deaf ears. New, higher-density housing called Blackwall Reach is slated to be built on its site by a large private public-housing provider.

The Smithsons (Alison, 1928–93) and Peter (1923–2003) were British architecture's internationally respected power couple of the postwar years. Robin Hood Gardens (1969–72), their only mass-housing project, sullied their reputation as it immediately became known for vandalism and crime. Poor tenant management was part of this, but the Smithsons' design of entrances and common areas was also criticized.

They arranged their precast concrete components in a highly sculptural manner, the facades of the blocks (one 10 stories high, one seven) deeply incised with full-length covered walkways. Hardly streets, but broader than those in most deck-access public-housing projects, they at least provide the tenants with a front door into the fresh air rather than dim internal corridors. Inside, the apartments—many of them duplexes—are well planned and relatively generously laid out, according to the government-enforced public-housing standards of the time.

The Smithsons' other key move was for the two long, meandering structures to enclose a large, protected landscaped garden at its center. Given that the site is hemmed in by busy roads, this urban oasis is more than necessary.

During the seven-year campaign from 2008 to 2015 to save Robin Hood Gardens, the project was twice refused listed (protected) status. The final decision to demolish was made by the local borough in August 2015. Since then, Robin Hood Gardens has been on borrowed time.

Many large public-housing projects of the postwar period are now being redeveloped across London and other cities. Usually this involves increasing the density, nearly always in partnership with private developers. The large housing project in which the fire-gutted Grenfell Tower (RECORD, August 2017, page 17) stands has itself recently had new mid-rise



The Smithsons' Robin Hood Gardens (above) is scheduled for demolition by the end of the year. The complex will be replaced by new buildings in which half of the units will be designated as affordable.

housing spliced in. A common complaint is “social cleansing”—that established low-income communities are destroyed because the new affordable housing isn't, for them.

Well-regarded architects are involved in replacing Robin Hood Gardens' buildings. Haworth Tompkins won the RIBA Stirling Prize for their new Everyman Theatre in Liverpool (RECORD, December 2014, page 82). The firm, along with urban-planning specialists Metropolitan Workshop, will contribute a pair of brick-clad buildings, each on the western side, while Denmark's C.F. Moller will do the same for the eastern ones. In the new scheme, the perimeter-block arrangement is kept, with the central garden slightly reduced and relandscaped. Where Robin Hood Gardens has a concrete perimeter wall, the new structures will be better knit into the surrounding area. With larger edifices, rising to 12 stories, the result will be 621 apartments



where the Smithsons provided 213—though many of these will be for sale, not subsidized rentals. Some 50 percent of the new homes here are described as “affordable,” meaning below market price to buy or rent—but, in London, “affordable” is a relative term, since prices are generally high.

Love or loathe the Smithsons' uncompromisingly Brutalist aesthetic, Robin Hood Gardens is a great deal more distinctive than its replacements will be. Regardless, says Haworth Tompkins director, Toby Johnson, “We respect the legacy of the Smithsons and have been all too aware of the intellectual challenge involved in working on Blackwall Reach.” ■

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2017 Women in Architecture Awards Honor Pioneering Professionals

BY MIRIAM SITZ

FOR THE FOURTH YEAR, *Architectural Record* is honoring five American architects with its Women in Architecture awards. These design leaders have each helped to highlight the impact that women make on the profession. This year's winners will be honored at a reception in New York on Wednesday, October 25. "These awards allow us to recognize women pushing the boundaries of innovation and creativity in design," says RECORD editor in chief Cathleen McGuigan.

The jury that selected this year's honorees included Jill Lerner of KPF, Tomas Rossant of Ennead, Mimi Hoang of nArchitects, critic Christopher Hawthorne, and Rosalie Genevro, executive director of the Architectural League. The winners are:

Marion Weiss, Design Leader A founding partner of WEISS/MANFREDI, Weiss received her M.Arch. from Yale University and is a tenured professor at the University of Pennsylvania. She has received numerous

honors, such as an American Academy of Arts and Letters Award and the New York AIA Gold Medal.

Elizabeth Whittaker, New Generation Leader Whittaker founded Merge Architects in Boston in 2003, a few years after graduating with distinction from the Harvard Graduate School of Design (GSD). She was included in RECORD's 2014 Design Vanguard issue, and is an associate professor at the GSD.

Billie Faircloth, Innovator As a practitioner, educator, and partner at KieranTimberlake, Faircloth uses multidisciplinary research and technology to inform design. She lectures at the University of Pennsylvania's School of Design and the GSD.

Sarah Whiting, Educator Whiting has served as the dean of Rice University School of Architecture since 2010 and is a founding partner of WW Architecture. She received her



This year's honorees, clockwise from top, left: Billie Faircloth, Elizabeth Whittaker, Marion Weiss, Sarah Whiting, and Deanna Van Buren.

M.Arch. from Princeton University and her Ph.D. in architectural history, theory, and criticism from MIT.

Deanna Van Buren, Activist The cofounder and design director of Designing Justice + Designing Spaces, Van Buren works to address the root causes of mass incarceration through the built environment. She received her M.Arch. from Columbia University and was a Loeb Fellow at the GSD. ■

PHOTOGRAPHY: © CHRISTOPHER LEAMAN; COURTESY BETH WHITTAKER; SHULI SADE/COURTESY WEISS/MANFREDI; KILLY; COURTESY DEANNA VAN BUREN (CLOCKWISE FROM TOP LEFT)

Archtober

Archtober (ärk'tōbər) is New York City's **Architecture and Design Month**, the annual festival of architecture tours, lectures, films, and exhibitions taking place during October.

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Columbus Begins a New Conversation About Modernism

BY DANTE A. CIAMPAGLIA

NEARLY 60 YEARS AGO, Italian filmmaker Michelangelo Antonioni found an ideal antagonist in modern architecture. The stone-and-mortar permanence of the classical was overtaken and erased by the glass-walled ephemerality of the modern, and characters in films like *L'Avventura* and *La Notte* found their postwar spiritual malaise framed and exacerbated by the changing landscape.

Yet Modernism is perpetually being reinterpreted and rediscovered. When it comes to its cinematic representation, the mode gets a meditative yet passionate defense in *Columbus*, the first feature by director and video essayist Kogonada, which opened August 4.



Actors Haley Lu Richardson and John Cho are pictured in front of Eero Saarinen's North Christian Church.

Shot on location in the Modernist mecca of Columbus, Indiana, the film is a familiar kind of coming-of-age story. Casey (Haley Lu Richardson), a young architecture obsessive, puts her aspirations on hold to care for her recovering-addict mother. She meets Jin (John Cho), the son of a prominent Korean architectural scholar who fell seriously ill just as he was to deliver a speech in Columbus. Over the course of their budding relationship, both Casey and Jin challenge each other to make painful decisions that upend their planned trajectories.

Kogonada, who also wrote and edited *Columbus*, frames this seemingly slight narrative around a compelling investigation of place, treating the architecture as one of the film's characters. It's both protagonist and nemesis for Casey and Jin as they wander the city, explore its architectural bounty (from Eero Saarinen's Miller House to Eliel Saarinen's First Christian Church to James Stewart Polshek's Columbus Regional Hospital Mental Health Services building), and find it both reflecting inner struggles and inspiring epiphanies.

It's an arc that follows Kogonada's own experience with the city. The director first encountered Columbus about two and a half years ago. He was taken by "this town haunted by the promise of Modernism," and immediately knew he had to make a film there.

Kogonada was born in Seoul and grew up in the Midwest. He always loved architecture and, as a grad student, studied Modernism as it related to other issues. But, as an immigrant, he viewed it outside its social context. He drew on these experiences to approach Columbus and its built environment with a kind of distance.

"What's really fascinating about architecture is that we move through these spaces and they almost become invisible to us because they are part of our daily lives,"

Kogonada says. "So the way in which those spaces are inhabited and the way they are felt as a part of daily life was a big part of it for me. We get to really *feel* architecture, not as pure object but as lived spaces."

This is made visceral by *Columbus's* uncommon evocation of tactility. The film luxuriates in rooms and buildings, and creates heightened sensory experiences, especially in the soundscape (both in Kogonada's sound design and the score by the band

Hammock). But Kogonada's sensibility also infuses *Columbus* with poignancy and gravity. Casey, like most people who grow up in and become inured to a place, has a complicated relationship with her town. But for her (and Jin), Columbus and its architectural legacy resonate in important and therapeutic ways. In one scene, Casey shares a profound, unexpected connection with Deborah Berke's First Financial Bank branch. "Suddenly, the place I lived all my life looked different," Casey says with wonder and satisfaction.

This is a far cry from Antonioni. The existential tension in his films has been overtaken by the reality of endurance, with the sleek lines and curtain walls of Modernism now a permanent, celebrated, and protected fixture of the built environment. The structures in Columbus build off, comment on, and confront that legacy—and so does Kogonada. *Columbus* might look like a standard indie film with gorgeous shots of photogenic buildings (courtesy of cinematographer Elisha Christian), but at its core it is a challenging examination of the way place influences human interaction. ■

Yo-Yo Ma Calls for Louis Kahn-Designed Boat to Be Saved

In an open letter to the editors of the *New York Review of Books*, Yo-Yo Ma, the world-famous cellist, made a case for saving a 195-foot floating concert hall designed by Louis Kahn. The vessel, *Point Counterpoint II*, first launched in 1976, is currently slated to be broken down for scrap at the conclusion of the American Wind Symphony Orchestra's 2017 tour.

NYPL Rooms Receive Interior Landmark Status

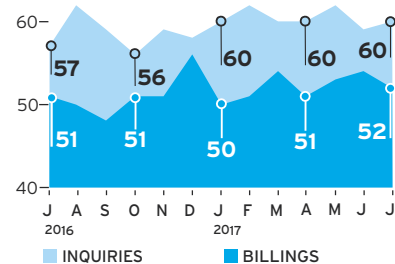
The New York City Landmarks Preservation Commission voted unanimously to designate the New York Public Library's recently restored Beaux-Arts-style Rose Main Reading and Bill Blass Catalog Rooms as interior landmarks. If ratified by the City Council, the rooms will join the Fifth Avenue building's exterior and entry hall as protected architecture.

Gunnar Birkerts Dies

Latvian-American architect Gunnar Birkerts died on August 15 at the age of 92. Part of a second wave of foreign-born modernists in the U.S. that came to prominence in the 1970s, he is known for expressive works including the catenary structure-supported Federal Reserve Bank in Minneapolis and an addition to the Corning Museum of Glass.

Trust Behind Heatherwick's Garden Bridge Officially Closes

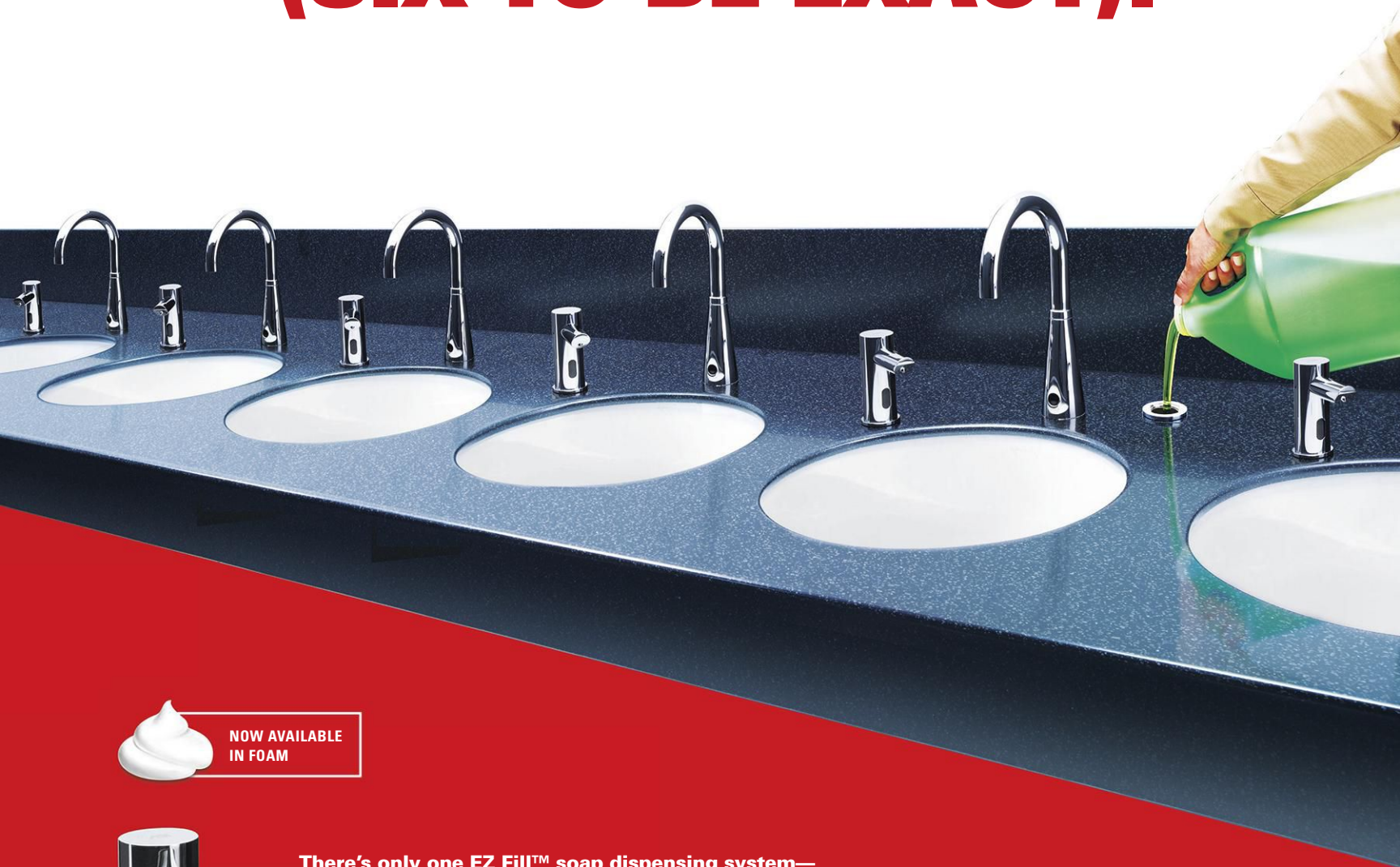
A charity set up to build and run the \$260 million Garden Bridge has officially shut down, signaling the end of the Thomas Heatherwick-designed project. In a statement from mayor Sadiq Khan, the Garden Bridge Trust cited a lack of support for the public green space planned for central London.



ABI Sees Six Months of Growth

According to the latest data from the AIA, demand for architectural services has increased for six-straight months. Though July's Architecture Billings Index (ABI) score of 51.9 was down 2.3 points from the previous month, scores above 50 indicate an increase in billings. The AIA's new project inquiry index scored 59.5 in July, up 0.9 points from June's reading. The figures, according to AIA economist Kermit Baker, indicate "the continuation of healthy trends" in the economy.

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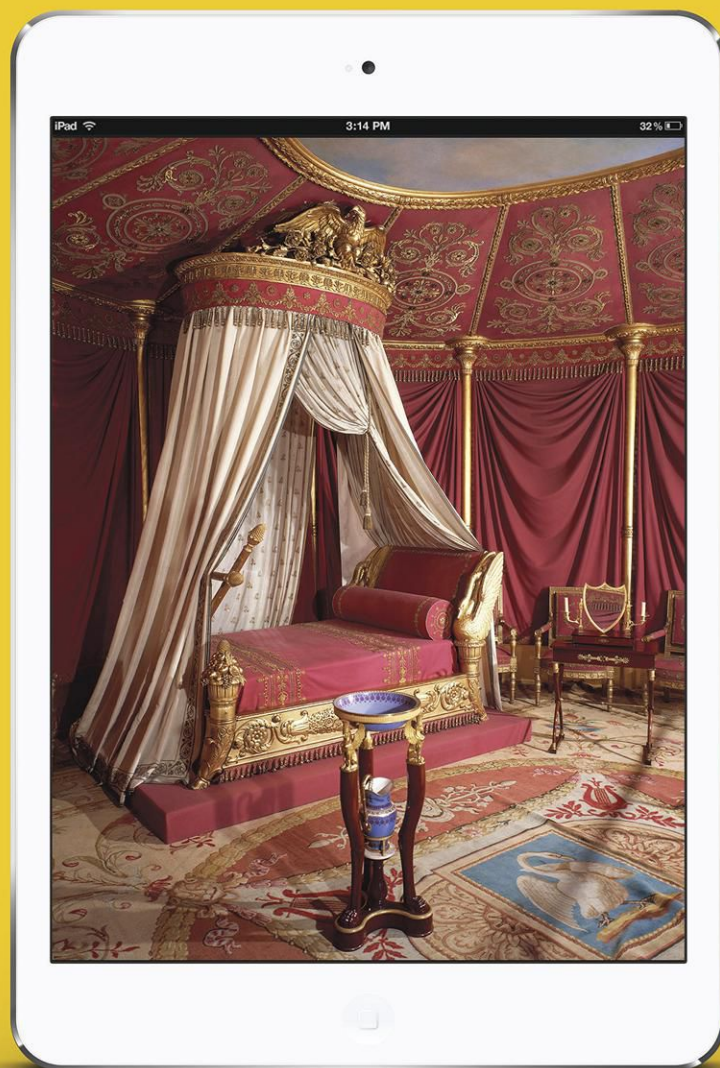


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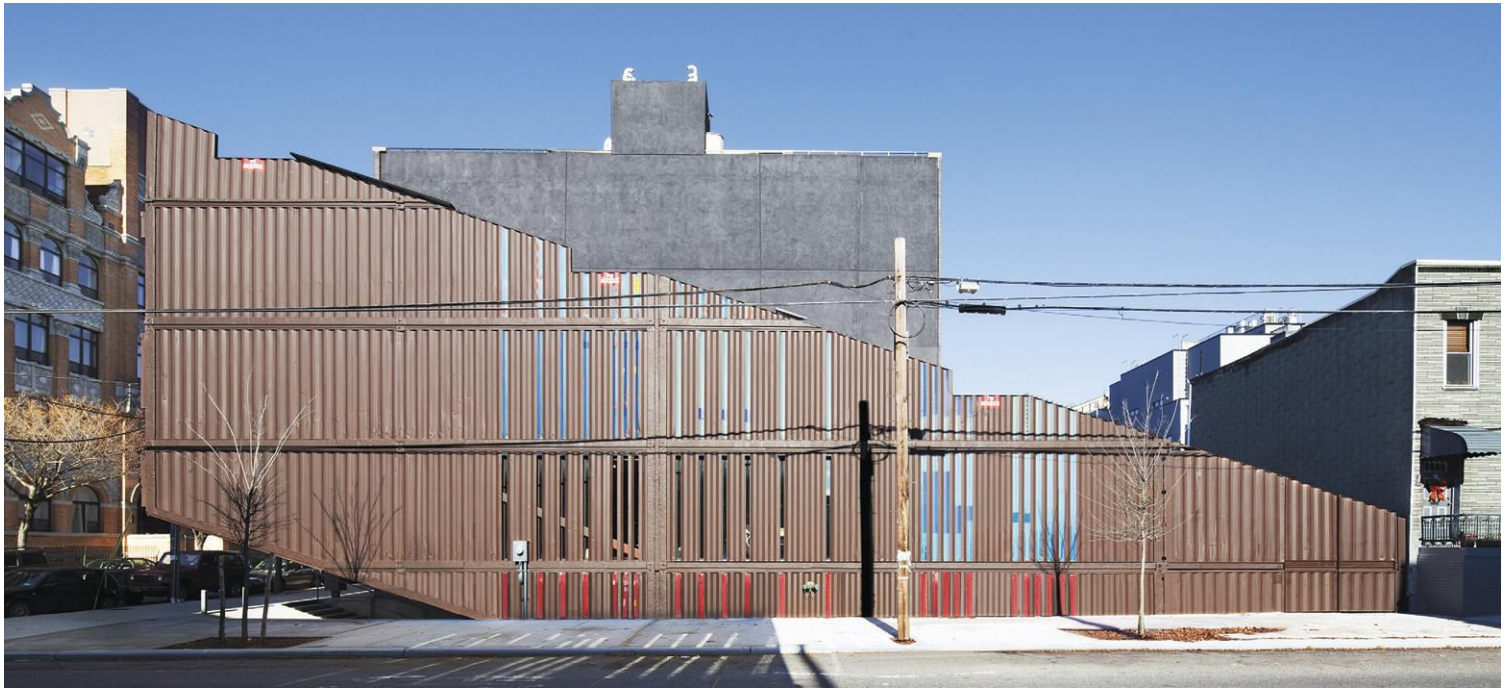
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AN UNUSUAL HOUSE CONSTRUCTED OF UPCYCLED SHIPPING CONTAINERS CUTS A STRIKING FIGURE IN BROOKLYN. BY JOSEPHINE MINUTILLO



“THEY’RE A BIT ROCK ‘N’ ROLL,” says Ada Tolla when asked to describe her clients for a recently completed house. Tolla, together with partner Giuseppe Lignano of LOT-EK—the New York- and Naples-based firm known for building with disused industrial objects—designed an eye-catching structure made entirely of shipping containers that has attracted lots of attention in its residential neighborhood in Brooklyn.

The containers aren’t new for LOT-EK; what is new is the form. By slicing the tops of the containers diagonally across the length of the corner lot, LOT-EK created an assembly that not only cuts a striking figure, but also reinvents the New York townhouse typology. “Thanks to the accident of the incline, there is a terrace at each level instead of just one outdoor space behind the house,” says Tolla.

The diagonal is mimicked on the underside of the structure’s front to serve as the main entrance, and what originally was intended as a driveway. That has temporarily been moved to the back, where a pool was planned, until the city grants permission for a curb cut at the front of the site.

Building something this unconventional produced a number of obstacles, not just from the local building department, but also from the bank. “If we were doing a regular brownstone, it would have been easy enough, but getting a construction loan for this was incredibly difficult, because there were no comparables,” recalls Joe Carroll, a restaurateur who shares the house with his wife and young children. “Of course there are no comps!”



The 40-foot-tall assembly, built from 18 disused shipping containers, sits on a prominent corner lot (top). Three containers wide, the front facade, above the sunken entrance, features the container doors and strip windows (above).

So while the project was much delayed because of permitting and financing issues, the actual installation of the containers—which were delivered to the site on trucks and lifted into place over a poured concrete basement by a giant crane—took only four days. For earlier commercial and cultural buildings that

LOT-EK designed with shipping containers, the architects worked with Silman engineers, who’ve since become experts at this type of construction. In this house, they provided extra structure in the form of columns composed of back-to-back steel “C” channels, as well as diagonal bracing at the front cantilever.

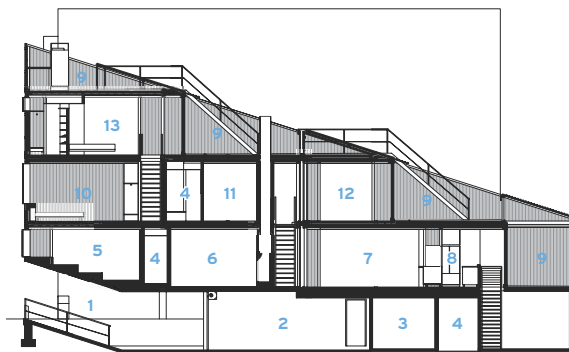
LOT-EK designed and built the long dining table, adding a touch of color in the otherwise monochromatic interior (right). The master bedroom, on the top floor, includes a large open bath and expansive outdoor terrace (bottom).

The containers used here, known as “high cubes,” are 40 feet long by 8 feet wide by 9½ feet high. The house is three containers wide; their former doors, at the short end, make up the long exterior wall. The corrugated side forms the long exterior wall, a rhythmic composition punctuated by vertical slit windows, mostly inoperable, and touches of color where portions of the containers’ original exteriors are exposed. The rest of the structure is painted brown.

The brown color palette is carried over to the interiors, where the original container decking, in apitong wood, was sanded and adapted for the floors. The ceiling too is surfaced in a similar-toned luan plywood. “The clients wanted as little sheetrock as possible,” says Tolla. Basic industrial hardware, including continuous piano hinges on doors, is used throughout.

The inner corrugated walls of the containers separate rooms, or are cut away to free up the plan. The first floor containing the public spaces is particularly open, with clear views from front to back, where large sliding glass doors lead from the chef’s kitchen to an outdoor dining area. Carroll, who, not surprisingly, loves to cook and entertain, insisted on a large fireplace in the living room, which he plans to use as a pit for roasting meat.

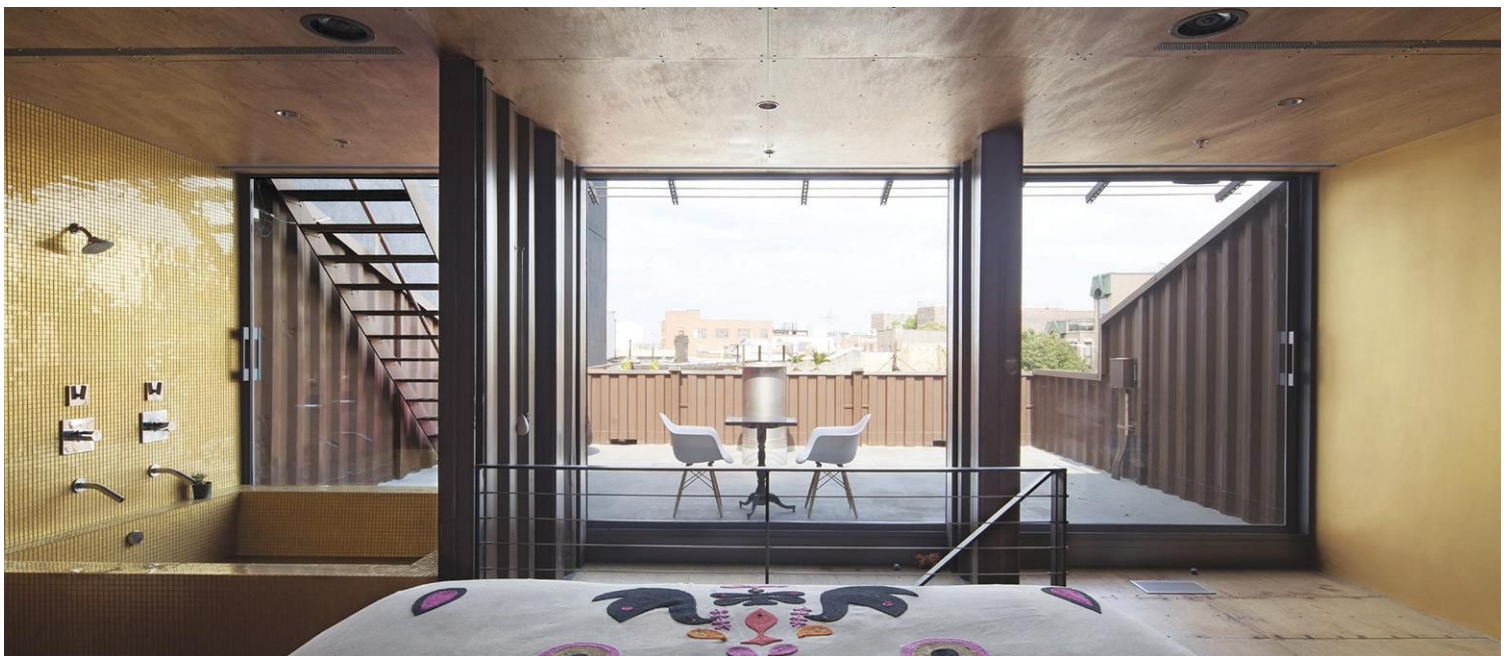
As far as living in such an unusual setting goes, Carroll couldn’t be happier. “It really is a wonderful space to be in, because it doesn’t look the same as everything else,” he says. “It changes your perspective on living, since the visual cues are so different.” ■



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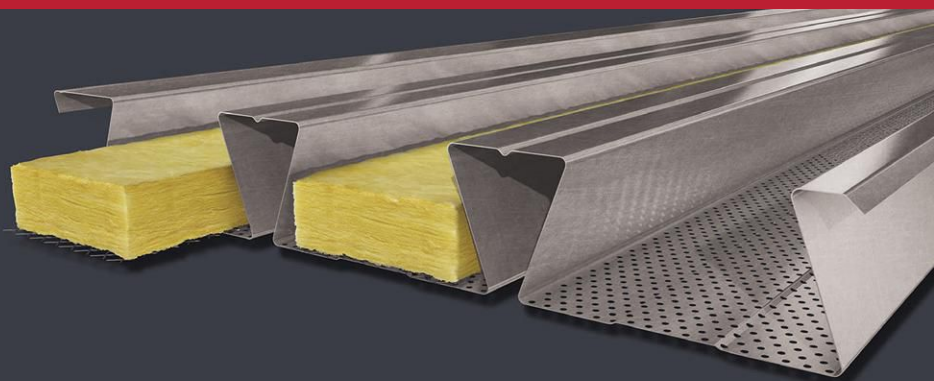
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The architect for the August issue's contest is landscape designer **BEATRIX FERRAND**, who designed the entrance drive and vegetable garden for her aunt Edith Wharton at the Mount, in the Berkshires, in the early 1900s and helped her with the formal gardens (left). Ferrand soon launched a distinguished career, of which Dumbarton Oaks in Washington, D.C. (1922–40), remains her best-known work.

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Spanning the Ages

Richard Meier completes a graceful bridge in Italy, reconnecting a small city to its history.

BY DEBORAH SNOONIAN GLENN

IN OCTOBER 2016—more than 20 years after his initial sketches were completed—Pritzker Prize-winning architect Richard Meier has completed his first bridge, which links the heart of Alessandria, Italy, to the city's 18th-century citadel across the Tanaro River. The reason for the long delay? "Bureaucracy," Meier says. The new structure replaced a Napoleonic-era bridge deemed unfit for long-term use after floodwaters backed up behind its piers and breached the road deck in 1994, says project manager Simone Ferracina. Multiple agencies had to approve a replacement due to its historic nature, and the demolition wasn't given the go-ahead until 2012. (One arch of the old bridge was preserved in place on each bank of the river.)

Meier calls his elegant new precast-concrete and painted-steel structure, rendered in his signature white, "a bridge between the past and the future" for Alessandria, a city of 94,000 residents that sits about 60 miles southwest of Milan. It's the only bridge that leads directly to the 50-acre Cittadella of Alessandria, a six-pointed star fort whose walls stretch in a hexagon shape along the western bank of the river. The complex has been on Italy's list for consideration as a UNESCO World Heritage Site for more than a decade, but its structures are crumbling. Officials hope that restoring the connection between this one-of-a-kind site and the Piazza Gobetti in Alessandria's historic core will create a groundswell of support for preserving and adapting the citadel for new



PHOTOGRAPHY: © HUFTON+CROW

uses, which would help revive the local economy.

Designed with assistance from local architecture firm Dante O. Benini and engineering firm Arup, the 607-foot-long bowstring arch bridge has two spans that hold each other in check structurally. The vehicle deck, which curves to the north, is counterbalanced by both the separate pedestrian deck to the south and the south-tilting, 107-foot-tall arch that supports them both. The new walkway of ipé decking, which ranges from about 16 to 46 feet wide, has become a popular gathering spot; in contrast, the old bridge was usually so traffic-clogged that it was unsafe for pedestrian use.

Between the roadway and the walkway, an almond-shaped opening permits views to the churning water below. “Acoustically, the sound of the river is amplified five times because of that gap,” says Ferracina. “We’d love to take credit for planning it that way, but it was a happy accident. It helps drown out vehicle noise for pedestrians.”

Though some Alessandrians were slow to warm to the

idea of erecting a modern bridge in place of an old one, most locals have embraced the city’s new icon with gusto, even bestowing on it an unofficial name: “the Meier Bridge.” As the arch took shape during construction, city officials launched a photography contest that challenged residents to snap pictures of it from their homes and workplaces. The response was overwhelming. “We knew the bridge would be visible throughout the city, but we didn’t realize just how visible until seeing thousands of pictures pour in from all different vantage points,” says Ferracina.

“I wanted this project to bring a sense of unity back to Alessandria,” Meier says. Mission accomplished. ■

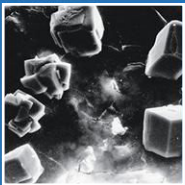
The bridge joins downtown Alessandria, Italy, with a historic fortress on the river’s opposite bank (opposite). A generous pedestrian pathway provides a popular public space for locals (above, both).

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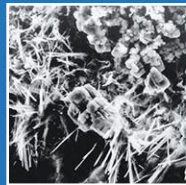
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A Landmark Restaurant Redux

William Georgis tweaks the legendary former Four Seasons.

BY WENDY MOONAN

IF YOU were an aficionado of the old Four Seasons restaurant—soon to reopen elsewhere but formerly in the Seagram Building in New York—you will see a huge difference in the space, which now houses two restaurants. It begins the moment you enter the white travertine lower lobby on 52nd Street, no longer spare. A host in a Tom Ford tuxedo greets you at a white-lacquered reception desk with an extravagant floral display and inquires which restaurant you have reserved: the Grill (formerly the Grill Room), serving chef Mario Carbone's chophouse favorites; or the Pool (formerly the Pool Room), where you find chef Rich Torrisi's seafood cuisine. These new establishments are the result of the building's new owner, New York developer Aby Rosen, with the Major Food Group Company (MFG); Carbone and Torrisi are also partners in the enterprise.

Another host accompanies you as you mount the existing bronze staircase to the restaurants and bar, past Cy Twombly and Franz Kline paintings (on loan from Rosen), stone benches, and ferns.

Then comes the good news: the 60-by-90-foot interior seems little changed from its 1959 Philip Johnson incarnation, though it is brighter and warmer, owing to a new computer-controlled LED lighting system by Hervé Descottes of L'Observatoire International.

In 2015, Rosen hired New York architect Annabelle Selldorf to restore the space, whose interiors are landmarked. This involved scrubbing 50 years of nicotine from the ceiling, polishing the brass rod sculptures by Richard Lippold above the bar and balcony, repairing Marie Nichols's swagged aluminum beaded curtains, and cleaning the French burl walnut walls.

Then Rosen asked New York architect William T. Georgis to decorate the two restaurants. He had a clean slate, because former proprietors

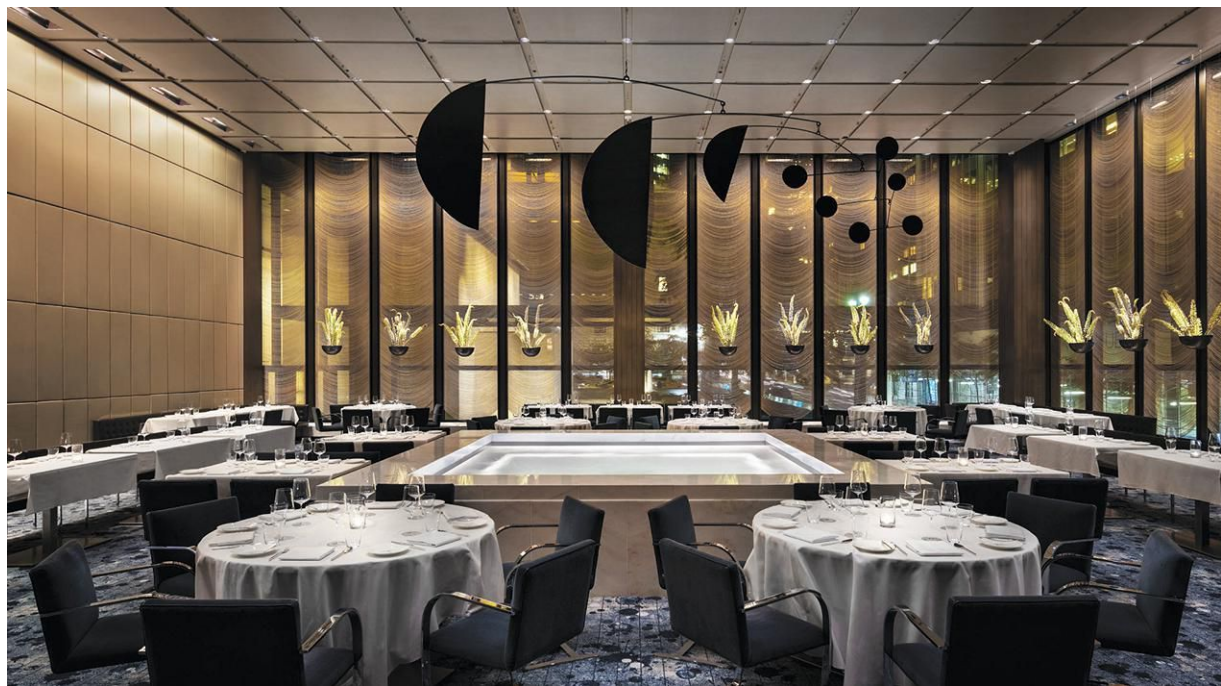
Julian Niccolini and Alex von Bidder sold the (non-landmarked and removable) furnishings and accoutrements at a wildly successful auction last summer, where a group of four ashtrays with the logo sold for \$10,000.

Nonetheless, the Grill looks very familiar—on purpose. “We wanted to keep as much as you possibly could,” Georgis says. He had Knoll reproduce Mies van der Rohe's 1930 Brno dining chairs and bar stools, although he designed the banquettes with higher backs. In the private dining room behind the balcony, new custom furniture complements two large Lee Krasner paintings, set off by the repainted perforated metal of Philip Johnson's “Starry Night” ceiling. Throughout these areas, a brown, red, and olive carpet, based on a Van Day Truex pattern from the 1950s, replaces the previous grayish-green one.

But the rest of Rosen's domain does not stay as true to its former self. In the hall linking the Grill to the Pool, where Picasso's 1919 theater curtain *Le Tricorne* once hung, Rosen commissioned a formidable lacquered-steel wall sculpture with plants by the artist Paula Hayes. (A glass-walled wine cellar is still there, now filled with bottles of vintage Chateau d'Yquem.)

Yet most surprising—and sad—is the Pool dining room: there are no trees to change from summer to fall to winter to spring! The white marble fountain still occupies the center of the space, but a sizable Calder mobile is suspended over it. “We felt we needed some large element to mitigate the scale,” says Georgis. “We're not about four seasons anymore.” The Calder is a fine sculpture but a poor substitute for the trees, which (though fake) dramatized the soaring space.

Georgis eliminated the private dining room on the mezzanine in the rear to create the Pool Lounge, which recalls a Deco-era nightclub. It



A FEW ECHOES While the Grill (opposite) stays close to the former Four Seasons Grill, a glamorous Pool Lounge (top) has replaced a private dining room. It overlooks the dining tables of the Pool (above, right), now adorned with a Calder instead of trees. Paula Hayes's wall sculpture with plants links the Grill to the Pool (above, left).

has taped music (soon to be live) and its own bar, but uses the Pool entrance. Separating the mezzanine from the Pool are five floor-to-ceiling doors that, Georgis says, “will always be open.” Mirrors on the back wall of the lounge reflect light, along with a Tara Chapas handwoven navy wall covering shot with silver thread “to look like moonlight on water,” Georgis says. Artist Nancy Lorenz conceived of the bar, sheathed in shimmering mother-of-pearl tiles, while Georgis designed

the carpet, gray with navy-and-white ink splatterings. It’s all very glam, yet the feeling is young and casual.

Rosen and MFG have invested \$30 million so far. (The investment includes the Lobster Club restaurant in the adjacent former Brasserie space, a Peter Marino project slated to open in October.) But the real test of success may come in early 2018, when Niccolini and Von Bidder’s new Four Seasons, designed by Brazilian architect Isay Weinfeld, will reopen just a few blocks away. ■

Wendy Moonan is a New York journalist who covers art, architecture, and design.

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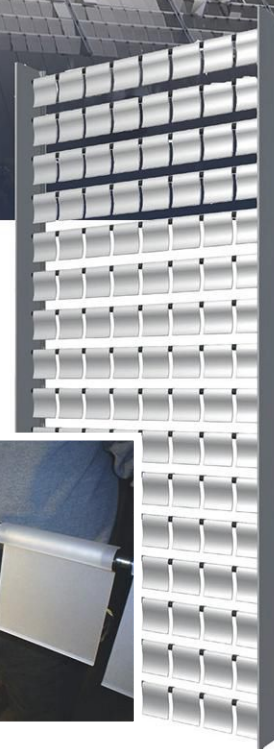
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A Long Look Back

You Say to Brick: The Life of Louis Kahn, by Wendy Lesser. Farrar, Straus & Giroux, 416 pages, \$30.

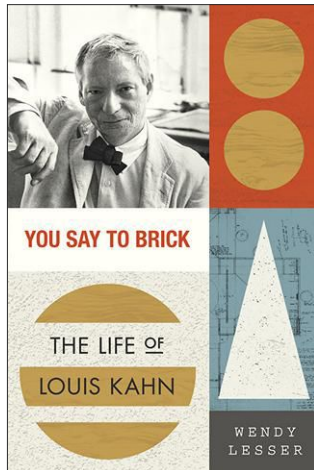
Reviewed by Kenneth Frampton

THE FRUIT OF YEARS of assiduous research, Wendy Lesser's study of Louis Kahn synthesizes his life and work in a literary equivalent of an architectural composition: Lesser's account oscillates between episodic segments of a life story told in reverse and her own equally episodic experience of five of his major works—the Salk Institute in La Jolla, California (1963); the Phillips Exeter Academy Library in Exeter, New Hampshire (1971); the Kimbell Art Museum in Fort Worth (1972); the Indian Institute of Labor Management in Ahmedabad, India (1974), and the posthumously completed National Assembly in Dhaka (1983).

Lesser's biographical résumé begins with a chapter entitled "Ending" emphasizing the strange circumstance of Kahn's death on March 17, 1974, in the men's room of Penn Station, New York. This somewhat sordid demise is bookended by a final chapter entitled "Beginning," where Lesser's evocative prose describes the accident that scarred Kahn's face for life, when as a child he inexplicably played with embers that burst into flames.

Equally evocative are the author's sensitive responses to Kahn's architecture, which, at times, make you feel that, no matter how often you revisit the work in question, you have yet to be affected by it as profoundly as the author. At the Salk Institute, she responds kinesthetically to the acoustical effects of the fountain in the courtyard where the water perpetually flows in an axial channel as it descends toward the sea. She has an equally tactile response to the smooth concrete, pitted travertine, and weathered teak in the flanking structures. It is significant that the reiterative geometry of the central core of the Exeter library could not be appreciated with the same phenomenological intensity as the Salk, despite the reassuring presence of its foursquare, warehouselike brick facade.

In the last analysis, this biography is as much about Kahn's unconventional, scandalous personal life as it is about his professional and artistic achievements. More importantly



for the record, Lesser acknowledges many of Kahn's partially neglected collaborators, in addition to the more familiar leadership roles played in the office by such figures as Marshall Meyers and David Wisdom. As an observant member of the office, Henry Wilcots, remarked, "Of course everyone knew that there was only one architect in the office, and that was Lou. Yet Lou was in and out. Dave held things together." Thus Lesser's biography serves to remind us that a work of architecture is never the result of one individual but the consequence of the continual involvement of innumerable persons who develop skills and crafts over a long period of time. To this end, many somewhat obscure figures appear in this biography, including Bangladeshi architect Shamsal Wares, who also features prominently

at the end of Nathaniel Kahn's 2003 film about his father, *My Architect*. Wares was one of the few to see that an essential aspect of Kahn's vision was his involvement with the past. As Wares says, "Mies, Corbu were all forward-looking architects, interested in the formation of a new world order. Louis Kahn was the only one . . . who could understand the value of looking backwards."

This book is enriched by insights of this order, but frustratingly, because, given that there are no footnotes, the reader is at a total loss

about the context in which such remarks were made. Nevertheless, these aphoristic citations fill innumerable gaps in our knowledge concerning the genesis of Kahn's most memorable buildings.

The decision to put Kahn's death at the beginning and the early scarring at the end—as well as the chapters in between entitled "Preparing," "Becoming," "Achieving," and "Arriving"—have the net effect of conveying the sense of a highly creative but restless and disordered life. Consumed by work interspersed with emotional upheavals, Kahn was the last American architect, after Sullivan and Wright, who wanted to create a modern architecture that would rival the ruined heroic civilizations of the antique world. ■

Kenneth Frampton is the Ware Professor of Architecture at Columbia University's Graduate School of Architecture, Planning and Preservation.



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Players on a World Stage

Power at Ground Zero: Politics, Money, and the Rebuilding of Lower Manhattan, by Lynne B. Sagalyn. Oxford University Press, 928 pages, \$39.95.

Reviewed by Alex Cohen

EVEN ON the 16th anniversary of 9/11, Lynn Sagalyn's exhaustive account of the conflicted planning and troubled execution of the epic redevelopment of Ground Zero is still engaging—especially to those who care about New York's symbolic center of business. A professor at the Columbia University Business School and founder of its Paul Milstein Center for Real Estate, Sagalyn explains how dis-united stakeholders, splintered site control, and shifting leadership resulted in extensive and litigated delays, ballooning budgets, and compromises in design and programmatic elements.

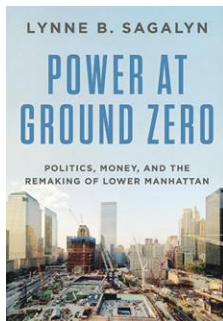
Sagalyn does not offer architectural or urban design evaluations beyond reporting on others' critiques of Michael Arad and Peter Walker's National September 11 Memorial, 1 World Trade Center tower designed by David Childs of Skidmore, Owings & Merrill, and other key architectural components. This may disappoint some readers. Yet she incisively analyzes how the often conflicting objectives of an array of political and business protagonists, along with 9/11 survivors, shaped (and delayed) a tumultuous process of redevelopment.

Sagalyn's portrayal of Ground Zero's reconstruction is as much a story of builders as it is of buildings. The World Trade Center net lease, executed just weeks before 9/11 between developer Larry Silverstein and the Port Authority of New York and New Jersey (which owns the land and is not accountable to any New York City zoning controls or planning dictates), ultimately meant that Silverstein would have responsibility for rebuilding all 10 million square feet of lost office space. Since the Port Authority controlled the infrastructure undergirding all construction at the site, there was a challenge: the agency's intent to restore its lost rental-income stream as quickly as possible slammed against market realities and Silverstein's resolve to minimize his firm's risk.

Sagalyn maintains that then-New York State Governor George Pataki, who had nominal control of the Lower Manhattan Development Corporation and its \$2.7 billion of federal rebuilding funds, failed to exert leadership during the critical planning phase. Only later did Mayor Michael Bloomberg step in to move the project along. But perhaps most fascinating is her assessment of Silverstein—an antihero who felt his role was to restore Lower Manhattan's greatness after the disaster of 9/11. His resolve, craftiness, and an expert legal team enabled him to leverage his insurance proceeds and contractual obligations to maximize his profit.

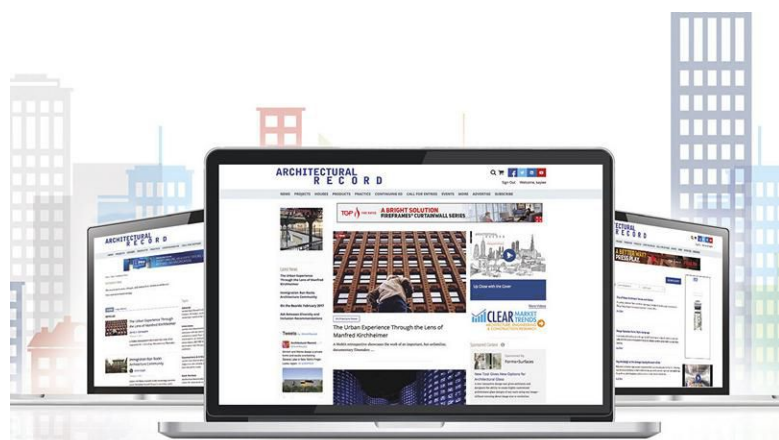
Sagalyn dramatically depicts the highly publicized selection process behind Daniel Libeskind's master plan for the complex and the eventual undoing of his conceptual design for the centerpiece Freedom Tower, now 1 World Trade Center. Yet *Power at Ground Zero* does not shy away from more arcane analysis of real-estate market economics and interne-cine bureaucratic wrangling. While its appeal to those with a primary interest in design may be uneven, Sagalyn's ambitious tome is the worthwhile read that a project of this magnitude deserves. ■

Alex Cohen, a graduate in urban planning at Princeton University, leads the commercial division for the New York real-estate firm CORE.



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By Kelly L. Beamon

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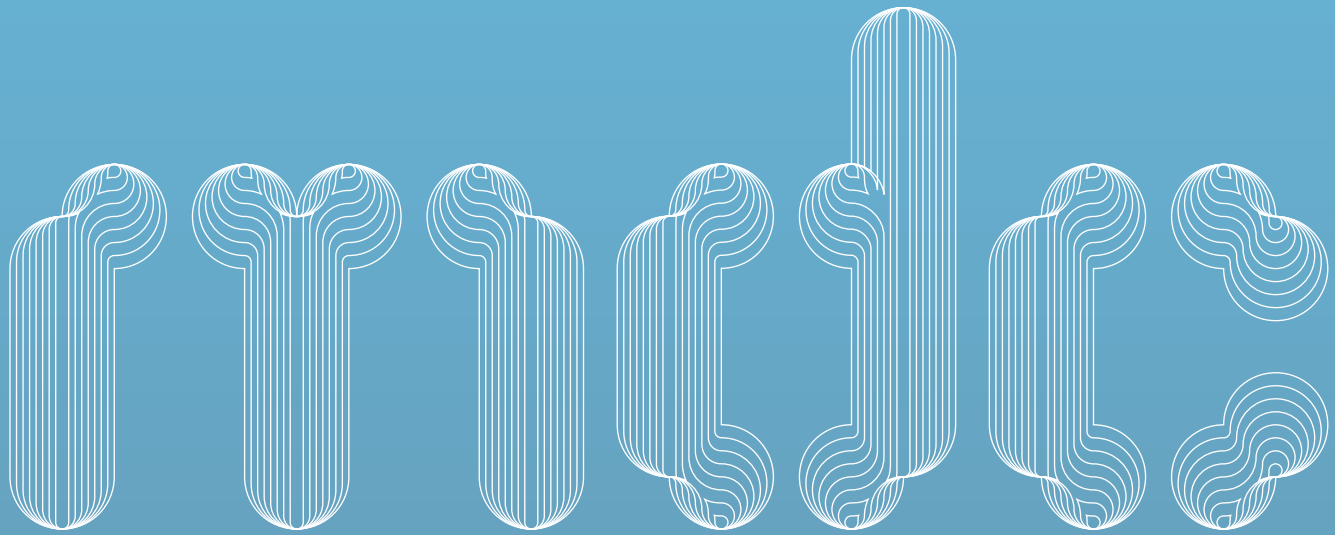
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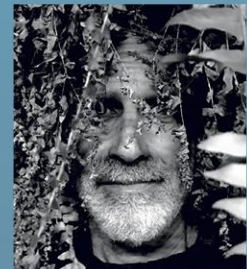
Sou Fujimoto
Sou Fujimoto Architects,
Tokyo



Dominique Jakob
Jakob + MacFarlane, Paris



Dorte Mandrup
Dorte Mandrup,
Copenhagen



Alberto Kalach
Kalach & Taller de
Arquitectura X, Mexico City



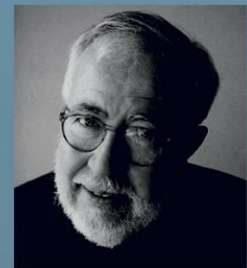
Shohei Shigematsu
OMA, New York



Julie Eizenberg, FAIA
Koning Eizenberg
Architecture, Los Angeles



**Marion Weiss, FAIA, &
Michael Manfredi, FAIA**
Weiss/Manfredi, New York



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ARCHITECTURE EDUCATION **NOW**

As students get ready to apply to architecture programs across the United States this year, they might wonder about the investment and their future. Is the money worth it? And what program will be the most suitable for a particular student's aptitudes and aspirations? With so much at stake, one measure of architecture schools are the rankings that we at Record publish each year, from research undertaken by DesignIntelligence. DI's evaluations are based on pragmatic assessments of how graduates from various programs are prepared (or not) to enter professional practice. The results are intriguing—especially those that point to critical areas that architectural education needs to address to move forward in the 21st century.



America's **Top** Architecture Schools 2018

Record presents the annual rankings of the Top 10 undergraduate and graduate architecture programs in the U.S., compiled by DesignIntelligence, as well as a look at some key findings from DI's research.



First-year B.Arch. students at Cornell had their final review last May in the school's OMA-designed Milstein Hall.

THE CHOICE of where to go to architecture school is a big question—often a \$50,000-a-year-or-more question. So what are the best schools for that kind of investment? Every year, *RECORD* takes a look at the state of architectural education by publishing highlights from the research gathered by DesignIntelligence, which ranks the country's top architecture schools based on surveys of hiring managers at firms. In addition, we give an overview of DI's surveys of students and academics, to gain an understanding of the prevailing attitudes in architecture education.

The 2018 rankings, at first glance, are similar to previous results. Take the graduate school list, where Harvard, Columbia, Cornell, Yale, and MIT have tended to jockey each year within the top five positions—with Harvard once more coming out at No. 1. But some schools have made dramatic advances. The architecture programs at the University of Southern California, for instance, leapt into the Top 10 in both the gradu-

ate (No. 9) and the undergraduate (No. 5) categories. Besides the overall rankings, DesignIntelligence also breaks down its lists of schools by skill set, including the best for research, design, sustainability, and construction knowledge. Other 2018 results offer noteworthy—and concerning—insights into the next generation of architectural postgraduates, many of whom don't plan to work for architecture firms at all. According to the studies, only 40 percent plan to join a private practice—a 16 percent plunge from 2017. And though, last year, just 3 percent of students said they planned to work for a nonarchitectural corporation, the new results show that 15 percent would.

Of course, rankings are not the sole metric students should consider when weighing the right school for them. In the following pages, DesignIntelligence president and CEO, David G. Gilmore, talks about the broader implications of this year's findings and the future of architecture education. *Anna Fixsen*

The Top 10 Undergraduate Programs

1	Cornell University
2	California Polytechnic State University, San Luis Obispo
3	Syracuse University
4	Virginia Tech
5	University of Southern California
6	Rice University
7	University of Texas, Austin
8	Southern California Institute of Architecture (SCI-Arc)
9	Pratt Institute
10	Rhode Island School of Design

The Top 10 Graduate Programs

1	Harvard University
2	Columbia University
3	Cornell University
4	Yale University
5	Massachusetts Institute of Technology
6	University of California, Los Angeles
7	University of Pennsylvania
8	University of California, Berkeley
9	University of Southern California
10	Washington University, St. Louis

COMPARISON OF PREVIOUS RANKINGS: UNDERGRADUATE

	2018	2017	2016	2015	2014	2013	2012	2011	2010
Cornell University	1	1	1	1	2	1	1	1	1
Cal Poly, SLO	2	2	2	2	1	5	4	4	3
Syracuse University	3	3	4	5	6	3	7	2	2
Virginia Tech	4	5	3	4	5	7	3	4	4
U of Southern Cal	5	11	10	10	7	16	12	9	10
Rice University	6	4	5	3	3	3	5	3	9
UT Austin	7	6	7	6	4	6	2	7	5
SCI-Arc**	8	10	12	8	9	2	7	6	-
Pratt Institute	9	8	11	9	11	11	10	9	15
RISD	10	7	6	7	10	7	6	11	7

COMPARISON OF PREVIOUS RANKINGS: GRADUATE

	2018	2017	2016	2015	2014	2013	2012	2011	2010
Harvard University	1	1	1	1	1	1	1	2	1
Columbia University	2	4	4	2	3	2	3	4	4
Cornell University	3	2	2	5	5	5	6	6	7
Yale University	4	5	3	3	2	3	2	3	2
MIT	5	3	5	4	4	4	6	5	3
UCLA**	6	13	18	15	19	-	-	-	-
U of Pennsylvania	7	10	15	7	14	15	8	8	11
UC, Berkeley	8	6	6	10	9	7	14	10	9
U of Southern Cal**	9	-	20	-	-	-	-	-	-
WUSTL	10	11	10	10	11	9	4	9	11

**Programs with only a dash did not score in the top 20.

DesignIntelligence president and CEO David G. Gilmore spoke to Record's Suzanne Stephens about the 2018 survey results.

What major shifts in the school rankings did you see this year on both the undergraduate and graduate levels?

We see little change in the rankings from last year at the undergraduate level. Except for the University of Southern California, there are no new players in the Top 10 this year. USC went from 11th to 5th place, displacing Auburn from the Top 10.

At the graduate level, UCLA, USC, and Washington University in St. Louis all made it into the Top 10 this year, pushing the University of Michigan, Syracuse University, and Rice University from the 2017 list.

Why certain schools move up or down in the rankings is not easy to understand. DI will be investigating, but it seems that significant jumps are tied to perception of the program, the faculty, and dynamics

of engagement with the alumni. Much upward movement occurs when schools effectively communicate their value to professional practices. **The basis of DI's methodology has been to survey those who hire architecture graduates to see what schools seem to best prepare job candidates. Can you tell us more about the methodology and if you made any changes this year?**

As in prior years, DesignIntelligence sent, via e-mail, requests for participation in the online survey directly to architecture and design hiring professionals across the U.S., seeking their perspective on design education and professional practice. Deans and chairs of U.S.-based architecture and design schools were invited, via e-mail, to forward the survey to qualified hiring professionals. Hiring professionals were asked to consider which schools, based on their hiring experience in the last five years, are best preparing students for a future in the profession. After considering a list of 11 design-education focus areas,



Columbia's Graduate School of Architecture, Planning and Preservation was ranked the second-best graduate program in the U.S. Here, a student shares models during an advanced-studio final review.

respondents could then select up to 10 National Architectural Accrediting Board–certified undergraduate and graduate programs. DesignIntelligence research staff validated each survey submission, verifying that respondents were in a hiring capacity and could demonstrate familiarity with graduates of at least three separate institutions to indicate a basis for comparison.

This year we added questions requesting hiring professionals to provide the number of students hired from each institution selected over the past five years. If DesignIntelligence research staff were unable to validate the submission according to these standards, the submission was excluded from the results.

Students also participated in the research. DesignIntelligence sent, via e-mail, a request to architecture and design-school deans, chairs, and program coordinators to forward a link to the online student survey to their current students and recent graduates in order to garner insights and personal experience related to their program.

In addition to the architectural component of DI's research, the study includes rankings and satisfaction surveys for the professions of interior design and landscape architecture. A total of 2,654 valid hiring-professional submissions and 4,359 student submissions were received across the disciplines. This information is published annually in DesignIntelligence's reports, along with a comprehensive list of the firms and organizations participating in the research.

What were the most surprising results from this year's student surveys?

We saw a 16 percent drop in those planning to enter private practice, in a traditional firm, after graduation. This is a dramatic change from prior years. Additionally, there was a 4.5 percent rise in students who were simply undecided about what to do after leaving school. And just as concerning was the almost 12 percent rise in students saying they plan to work for a nonarchitectural corporation such as Google or General Motors. These responses

Architecture-Student Survey

This year, DesignIntelligence received 2,868 valid responses from architecture students and recent graduates. Of this group, 57 percent of the respondents were undergraduates. Of that percentile, 53 percent were enrolled in a B.Arch. program, 16 percent are seeking a B.A. in architecture, and 22 percent a B.S. in architecture; 27 percent of respondents were enrolled in graduate programs, and, of those, 90 percent are pursuing an M.Arch.

57% Excellent

30% Very Good

9% Good

3% Adequate

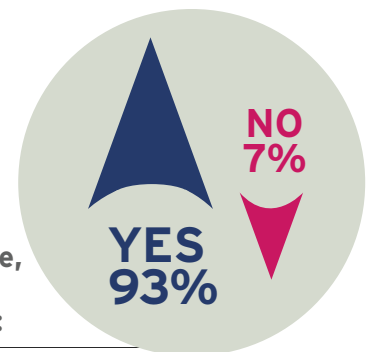
1% Poor

How they grade the quality of their program overall

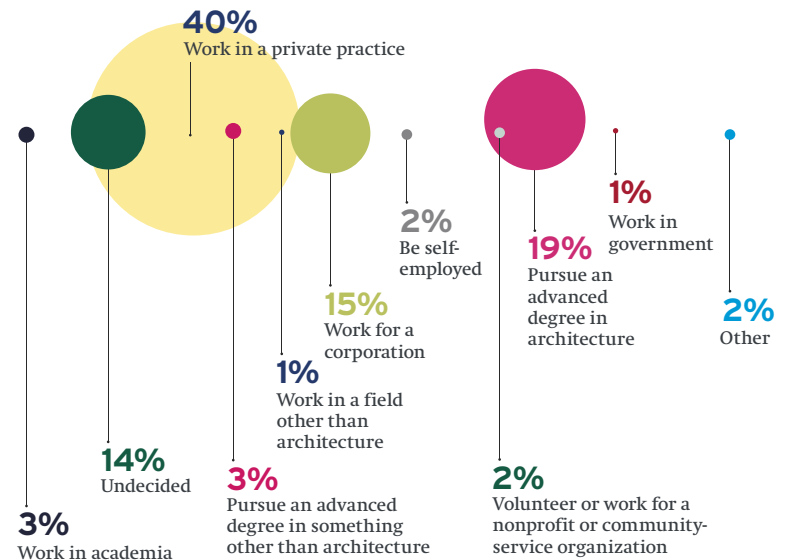
85%

plan to take the Architect Registration Examination

Believe they will be, or were, well prepared for their profession upon graduation:



What they'll do after graduation



Skills Assessment

The academic programs that practitioners deem strongest for each skill area:

DESIGN THEORY & PRACTICE

1	Harvard
2	Cornell
3	Columbia
4	Yale
5	SCI-Arc

SUSTAINABILITY

1	Cal Poly, SLO
2	Cornell
3	Auburn
4	Harvard
5	U of Southern Cal

CONSTRUCTION METHODS & MATERIALS

1	Cal Poly, SLO
2	Virginia Tech
3	Cornell
4	U of Southern Cal
5	Auburn University

RESEARCH

1	Harvard
2	MIT
3	Cornell
4	Columbia
5	U of Southern Cal

These charts reflect combined accredited B.Arch. and M.Arch. programs.

Architecture Programs Most Admired by Deans and Chairs

This year, DesignIntelligence polled 215 deans and chairs for their rankings of architecture and design schools.

UNDERGRADUATE

1	Cal Poly, SLO
2	Cornell
3	Virginia Tech
4	Auburn
5 (TIE)	Rice University University of Texas, Austin

GRADUATE

1	Harvard
2	MIT
3	University of Michigan
4	SCI-Arc
5	Yale

reinforce the perception that graduates are unsettled about their future in professional practice. Why? There are several possible reasons: how long it takes to move along the traditional career track; the less than optimal compensation they can expect compared to other professional careers; and the need to pay off a significant educational debt. We at DI are contemplating strategies we hope can reverse this trend and will be collaborating with educators accordingly.

What are hiring managers of architectural firms looking for?

When hiring professionals are scrutinizing talent, far less weight is afforded to GPA, study-abroad experience, and school attended. What firms are looking for, rather, is best fit. Between 80 percent and 90 percent of those in a hiring role indicated the following as most impor-

tant when considering a new graduate:

- committed work ethic
- teachability/aptitude—showing a willingness to learn/ be mentored
- adaptive/flexible way of being

Over 50 percent of hiring professionals responded that new graduates have an inadequate understanding of the business model for professional services firms. Over 50 percent responded that new graduates have an inadequate understanding of the importance of project budgets and schedules. Over 60 percent responded that new graduates have an inadequate understanding of basic procurement processes. Lastly, almost 50 percent said that new graduates are taking over six months to become productive and profitably billable in the practice. This is a measurable problem requiring educators and professionals to collaborate to close the gap.

What else should educators emphasize?

More education is needed in practice management, business processes, design for constructability, and cross-disciplinary exposure.

What are optimistic signs from schools?

In traveling to many of the schools this past academic year, we were encouraged by the positive dynamic of the faculty to lean in, keep learning, and explore the many new approaches and technologies impacting the profession. Students are engaged, and curiosity is driving extraordinary outcomes.

What are other concerns for the profession regarding education?

The overarching concern for the architecture profession is relevance. The aversion to risk at almost all costs, coupled with the dramatic advances in the development and deployment of design technologies, artificial intelligence, machine learning, applied robotics, and an escalating acceptance of engineered and assemble-able structures all raise the question of traditional roles and responsibilities in architecture.

Education should be both a starting place as well as ongoing enabler for professional relevance. It's during our undergraduate and graduate years that we are exposed to new ways of thinking, speaking, and behaving regarding the domain. In the educational context we are pushed to exploration, experimentation, and expansion. These require various degrees of risk-taking and the idea that the possibilities outweigh the risk.

Additionally, it is rare for us to encounter a postgraduate professional program specifically designed for professionals who've been practicing for 10-plus years. CEUs are rarely stretching but more the stuff of status quo compliance to check-box licensure requirements. CEUs are moments—immersive programs are experiences.

In the best business schools across the country, there are opportunities for business, marketing, and finance professionals to enroll in immersive programs to learn the latest leadership and management theories, gain new perspectives on globalization, and better grasp the accelerated convergence of business and technology. These aren't a day of two but rather four to 10 weeks of reinforcement and renewal. Where are such programs in architecture?

The design world is on a rocket ship of change, yet professionals are left to learn as they go, hoping to catch up and keep up. But that's a fool's errand. Unless we stop, disengage from the daily grind for a period, and commit to some form of reorientation and deep-dive learning, we will fall further behind in what is necessary for present relevance. Educators have an opportunity to close the gap with the practicing professionals by designing programs that enable their alumni and others to lead the industry. Opportunity beckons! ■

LED REVEALS



Stan the specifier is building homes in a termite-infested area!

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- (B) Gain favor with the termite king by marrying his termite daughter.



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Hotel Henry at the Richardson Olmsted Campus |
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Richardson Revival

A progressive 19th-century psychiatric hospital is reimaged as an elegant urban resort.

BY BETH BROOME

PHOTOGRAPHY BY CHRISTOPHER PAYNE

Buffalo had its heyday in the 19th century as a busy trade port that prospered with the opening of the Erie Canal. It was rich with architecture and culture. In the 20th century, however, the canal's importance diminished, and the city suffered a long period of decline. Now it is trying to reinvent itself, in part through exploiting its architectural and civic assets—such as Frank Lloyd Wright's Darwin D. Martin House Complex (RECORD, February 2017, page 62) and a network of parks and parkways by Frederick Law Olmsted and Calvert Vaux—by breathing new life into them. The ambitious centerpiece of this effort is the revival of the Richardson Olmsted Campus. Once known as the Buffalo State Asylum for the Insane, the complex, now a National Historic Landmark, consists of a majestic 1,500-foot-long army of stone and brick buildings by Henry Hobson Richardson that are surrounded by 100 acres of grounds originally conceived by Olmsted and Vaux. The principal element of the first phase is the new Hotel Henry, a boutique “urban resort” and conference and event center designed by New York architects Deborah Berke Partners (DBP) that opened in April. Embracing the center's past while reinventing it for modern use, the hotel and its stylish, minimal interiors provide a sympathetic counterpoint to the coarse and imposing walls outside.

Richardson's design for the rambling complex, which opened in 1881, was based on the popular “Kirkbride Plan” developed by psychiatrist Thomas Story Kirkbride, whose innovative treatment philosophy emphasized therapeutic environments that harnessed the restorative potential of daylight, air, and pleasing spaces and views. For his design, Richardson hewed to the plan by creating a central Administration Building, announced by two 180-foot-tall ornamental towers, flanked on either side by five wards connected by curved corridors. In plan, the building, which is clad in rusticated Medina sandstone and brick, steps back in the signature Kirkbride “batwing” shape, its narrow profile assuring ample views of the grounds. Over the years, however, as mental-health treatment approaches shifted, the hospital left the facility and, after 1974, the buildings remained mostly vacant.

In 2006, in an attempt to save the deteriorating complex and drive recovery for the larger city, the Richardson Center Corporation (RCC) was founded. “The hope,” says RCC executive director Monica Pellegrino Faix, “was that it would become an economic engine for



GRAND ENTRANCE
The hotel occupies the sprawling complex's central Administration Building and one wing on either side. A glass box encloses the new main entry on the north side, which also leads to the Lipsey architecture center.



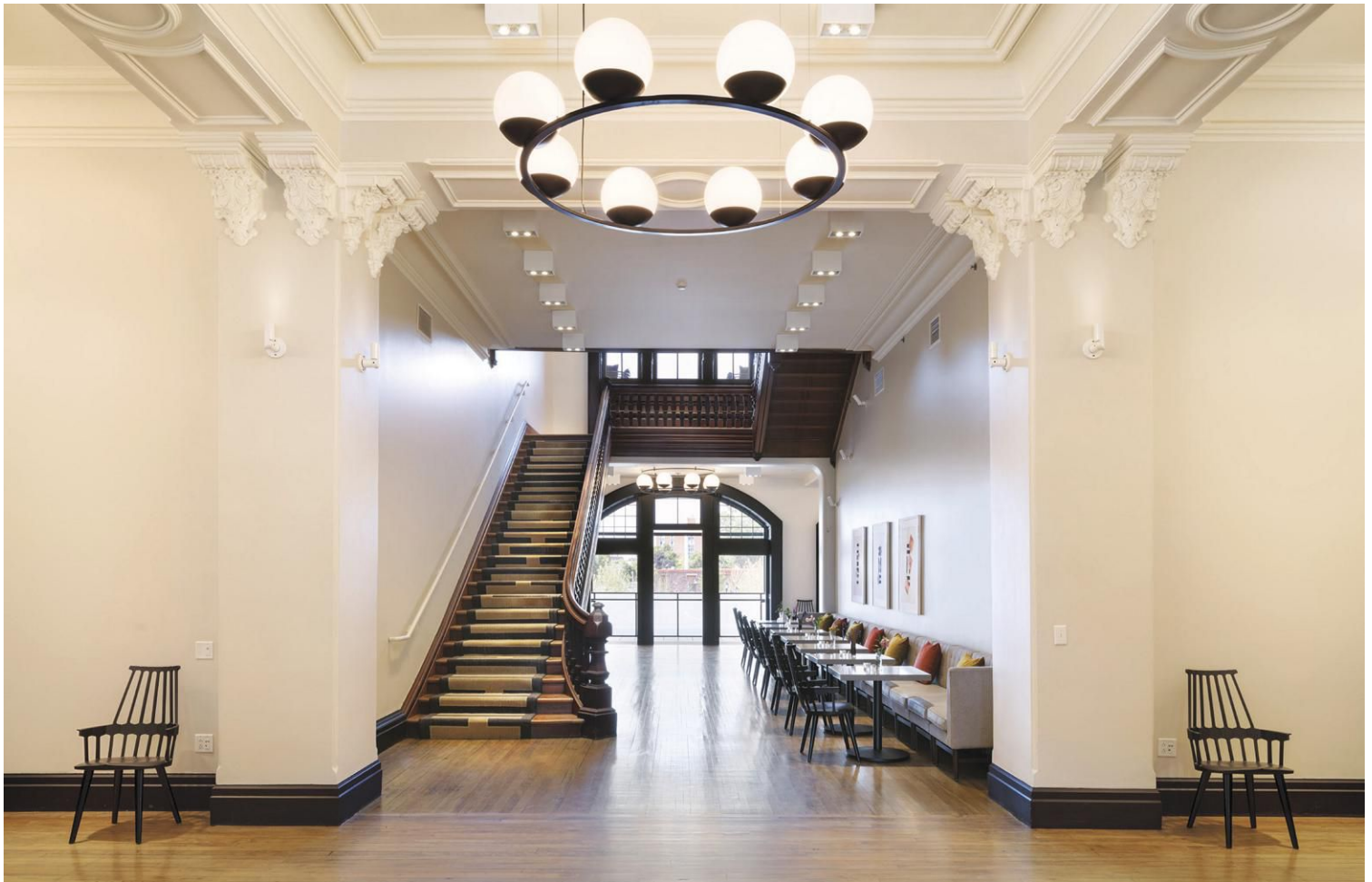


MEMORABLE STAY
Visitors enter through the glass box (above) and follow a stair up into the old building. A terrace above the new entry (right) looks out to the extensive grounds. Restaurant seating spills out by the original stair (opposite, top). A soffit in the café (opposite, bottom) conceals mechanicals and lighting.



Buffalo.” Bolstered by \$76.5 million in state funding, the corporation stabilized the buildings and developed studies and a master plan that would guide the future use of the property. To boost tourism and promote architecture, while still providing access to the public, this first phase includes the 88-room hotel, which occupies the central Administration Building and one wing on either side, as well as the 3,000-square-foot Lipsey Buffalo Architecture Center at ground level. The hope was also to prompt private investment in the remaining two-thirds of the 500,000-square-foot complex, which is currently vacant.

In 2012, DBP joined preservation consultants Goody Clancy and architect of record Flynn Battaglia on the project, bringing its extensive experience adapting old buildings for the 21c Museum Hotels (RECORD, June 2014, page 146; July 2015, page 124). But, points out Berke, “Adaptive reuse is the only parallel here. This goes beyond that. It’s H.H. Richardson. It’s intimidating. It’s in a whole other league.” The architects developed a central strategy to guide the design: always take cues from the original architecture. “Not in the manner of worship-at-



the-feet-of-preservation, as though the building is an icon or relic,” says Berke, “but because it’s a great building by a great architect. This can lead you toward a 21st-century interpretation.” “And,” adds senior principal Stephen Brockman, “we were going to push boundaries a little bit.”

The most conspicuous move is at the main entrance, which the team relocated from the south to the north side of the Administration Building and enclosed in a glass box. The north side sits at a lower grade, so a precast concrete stair with glass guardrails leads up to the historic entry level. The team designed a restaurant, café, and lounges in former offices here, altering the original floor plan as little as possible. Numerous meeting and event rooms occupy the levels above. It is in the hushed guest room wings—with their 14½-foot-wide, south-facing corridors, where patients once spent time taking in the sun—that visitors find one of the building’s most defining features. “Maintaining the single-loaded hallways and figuring out how to make guest rooms in this complicated floor plan was the challenge and excitement of the project,” says Berke, noting that they resisted the impulse to flip the plan, building the guest rooms in the brighter, wide hallway spaces. Instead, the guest rooms, with their grand proportions, large windows, and elegantly spare furnishings, occupy the narrow former patient rooms—only 11 to 12 feet wide. To accommodate bathrooms, the architects created wood bump-outs along the hall that are surprisingly unobtrusive, appearing as armoires





SECTION A - A

0 30 FT.
10 M.

- | | |
|------------------------|---------------|
| 1 NORTH ENTRY | 8 BALLROOM |
| 2 HISTORIC ENTRY | 9 TERRACE |
| 3 NORTH HALL | 10 RESTAURANT |
| 4 HISTORIC STAIR HALL | 11 CAFÉ |
| 5 RECEPTION | 12 GALLERY |
| 6 ARCHITECTURE GALLERY | 13 GUEST ROOM |
| 7 CONFERENCE ROOM | |

credits

ARCHITECT: Deborah Berke Partners – Deborah Berke, Stephen Brockman, Gunnar Burke, Virginia Gray, Brendan Lee, John Midgett, Alessandro Preda, Alexandra Tailer, Yasemin Tarhan, Olivia Susai, Stephen Lam

ARCHITECT OF RECORD/DESIGN-TEAM

COORDINATOR: Flynn Battaglia Architects

ENGINEERS: Buffalo Engineering (m/e/p); Simpson Gumpertz & Heger (structural); Watts Architecture & Engineering (civil)

CONSULTANTS: Goody Clancy (exterior historic preservation); Flynn Battaglia Architects (interior historic preservation & tax credit); Kugler Ning Lighting

CONSTRUCTION MANAGER: LP Ciminelli

CLIENT: Richardson Center Corporation

SIZE: 191,000 square feet

COST: withheld

COMPLETION DATE: December 2016

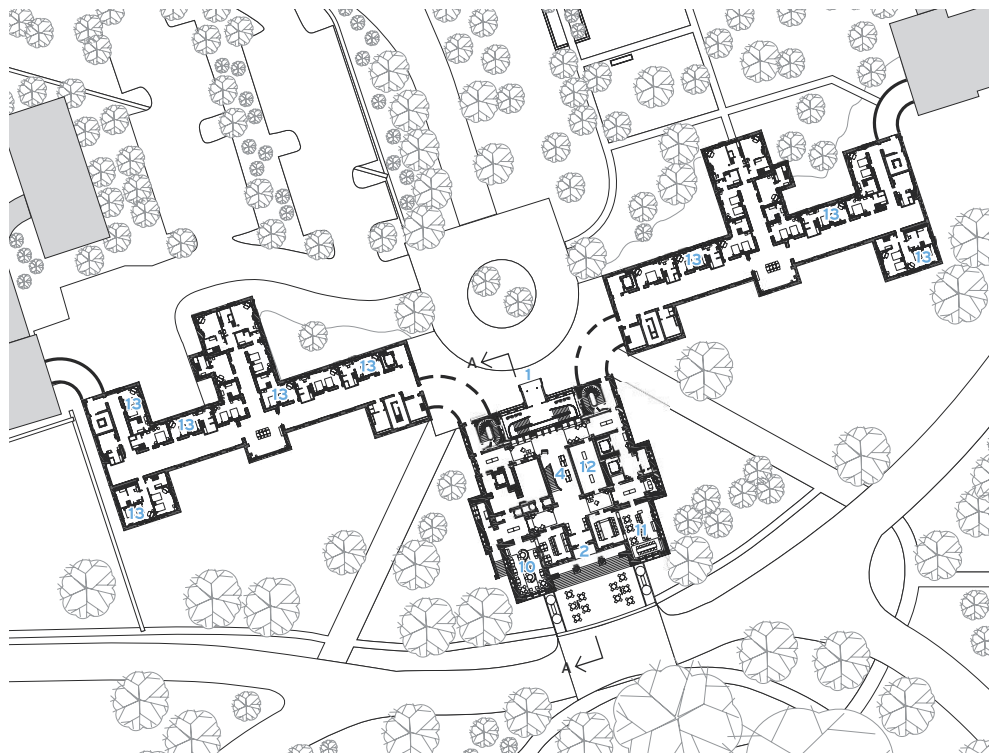
SOURCES

CURTAIN WALL: Tubelite

ACOUSTICAL CEILINGS: Armstrong

FLOOR AND WALL TILE: Porcelanosa

CARPET AND RUGS: Signature, Durkan (with design by Deborah Berke Partners)



PARTIAL SITE PLAN WITH FIRST-FLOOR PLAN

0 100 FT.
30 M.



DECK THE HALLS The team retained the generously proportioned single-loaded halls (above) in the former wards, where residents used to take in the sun (DBP designed the light fixtures). Narrower patient rooms have been converted into elegantly spare guest rooms (right). A window niche became an opportunity to inject color (opposite).

or other furniture. “The hospitality handbook—which dedicates most space to guest rooms—does not have this in there,” notes Brockman. “Here we had complete imbalance, but it was important that people experience the gracious spaces this building originally had.”

The team maintained and restored many existing elements: maple flooring, molding, windows. And they called out their interventions, for example differentiating new walls with materials other than plaster. In many places, soffits accommodate lighting as well as mechanicals. And the architects took care to avoid hospitality-appropriate finishes that were too institutional, given the facility’s past. “There are all these weird parallels,” says Brockman, “so things like color became a huge topic of conversation.” A palette evolved of soothing, muted pale greens and blues, complemented by contemporary works by Buffalo artists. Entering Hotel Henry is like cracking open a tough carapace to reveal a rich, inviting interior. “The building has a really powerful presence,” says Berke. “What we tried to do was celebrate it—allow people to enjoy that presence—while distancing the hotel from the asylum and embracing the architecture.” ■



Public | New York | Herzog & de Meuron

Public Display

A new hotel and condominium tower enters the scene on the Lower East Side.

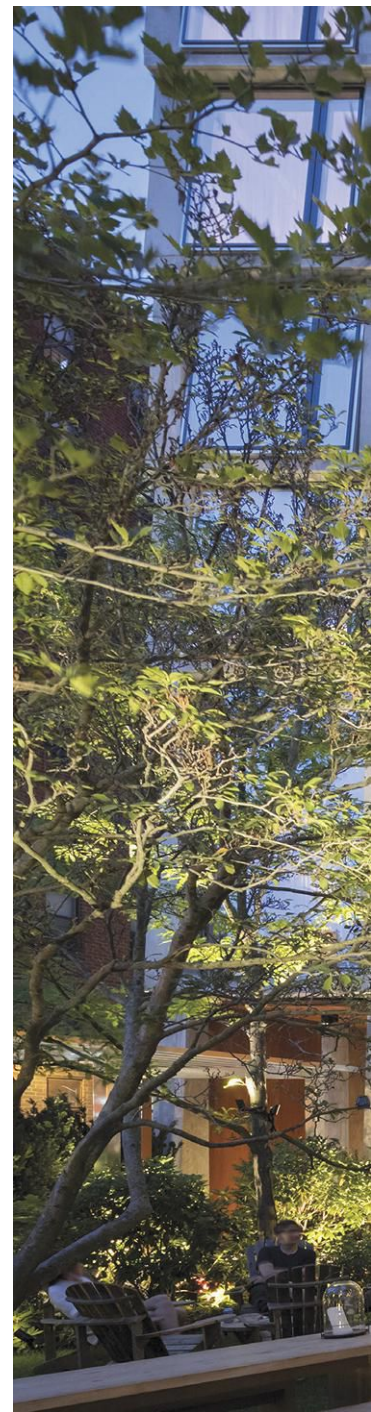
BY SUZANNE STEPHENS



The latest hotel to open in Manhattan's rapidly gentrifying Lower East Side, the Public, has been getting a lot of attention. It is not simply because it was designed by name-brand Swiss architects Herzog & de Meuron for the high-concept hotelier Ian Schrager. And neither is it because the new, reinforced-concrete tower is distinctively glazed with slightly canted windows that give the exterior surfaces a craggy but glossy air. No. The Public's publicity revolves around certain intimate acts enthusiastically carried out by some hotel guests and visible through those architectonic apertures. This spontaneous sex-in-the-city performance art helped make the Standard Hotel on the High Line (designed by Ennead Architects) all the talk when it opened in 2009. Are X-rated floor shows now de rigueur for ultracool caravanseries?

The neighbors are not pleased. When Schrager bought the 22,700-square-foot parcel in 2012 with the Witkoff Group, it was part of a larger site that included a subsidized rental housing project, Ten Stanton Street, whose low- and moderate-income residents had used the prospective hotel's property as a park and playground. The owner was able to sell a narrow lot to the hotel by extending the government-sponsored lease program for the housing until 2035. The apartment dwellers could stay, but they lost their open space.

With the Public, a brand Schrager initiated in Chicago in 2011, the hotelier says he wanted to offer moderately priced rooms, starting at \$150 a night, to a youthful clientele that might otherwise turn to Airbnb. The 28-story mixed-use tower includes 367 guest rooms and 11 condominium apartments at the top. (The John Pawson-designed apartments, 10 of which have sold to date, at market prices, should make it all financially worthwhile.) To keep the hotel rates down, the design team made the guest rooms diminutive—generally



URBAN OASIS

The entrance to the Public (left and opposite) from Chrystie Street is reached through a lush garden. The 28-story tower is set back 50 feet from the street, making room for such greenery as hedges, plane trees, hydrangeas, and grass, along with a polished stainless-steel canopy.



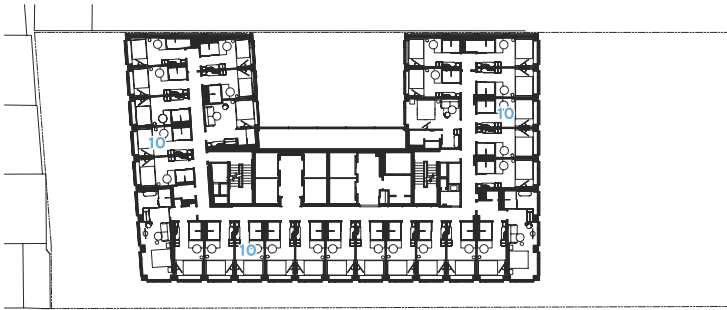
191 square feet—in keeping with the tiny rooms in many of Schragger’s other hotels in New York and elsewhere. He likens the cozy, white-oak bed alcoves to yacht cabins. Herzog & de Meuron partner Ascan Mergenthaler explains: “For a small floor plate, we gained more space with a bedroom niche and interlocking back-to-back bathrooms.”

The shift in program from hotel to condos on the 19th through 25th floors is reflected by the setback massing of the tower, along with different fenestration: the hotel’s one-window-per-room format, framed by the aluminum profile extrusions, changes to larger bands of glazing for the condos, where the concrete frame also becomes more pronounced.

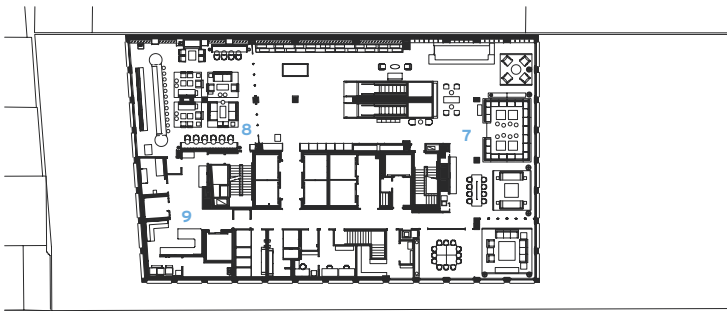
Zoning for the 313-foot-high tower dictated it be pulled back 50 feet

from the street, allowing landscape designer Madison Cox to create a verdant garden fronting the entrance—a surprising oasis in an area once known for gritty tenements.

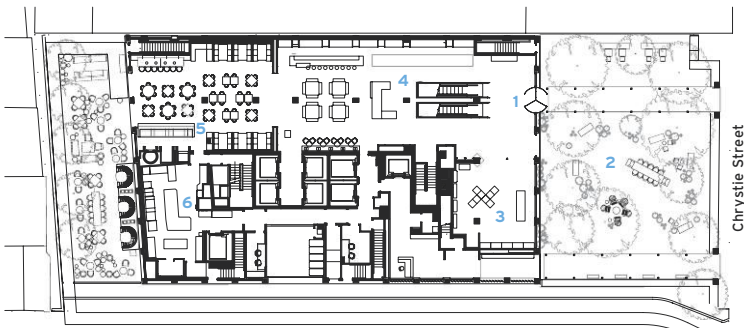
Entering the hotel, you immediately encounter a bold, swooping set of stainless-steel escalators with mirror-polished rose-gold-tinted walls. The escalators divide a retail shop from a café/deli and, at the back, the Kitchen, a culinary outpost overseen by chef Jean-Georges Vongerichten. While the restaurant should attract its fair share of foodies, those who want to kick back with a Champagne can proceed on their stiletto heels or sneakers to the second-floor bars. “We try to entice people upward with a very expressive tunnel element, which replaces the monumental stair of the old grand hotels,” says Mergenthaler. The



TYPICAL HOTEL FLOOR PLAN

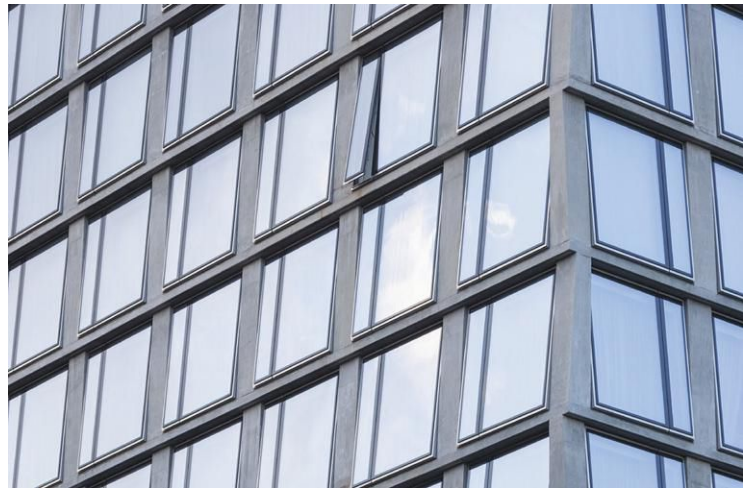


SECOND-FLOOR PLAN

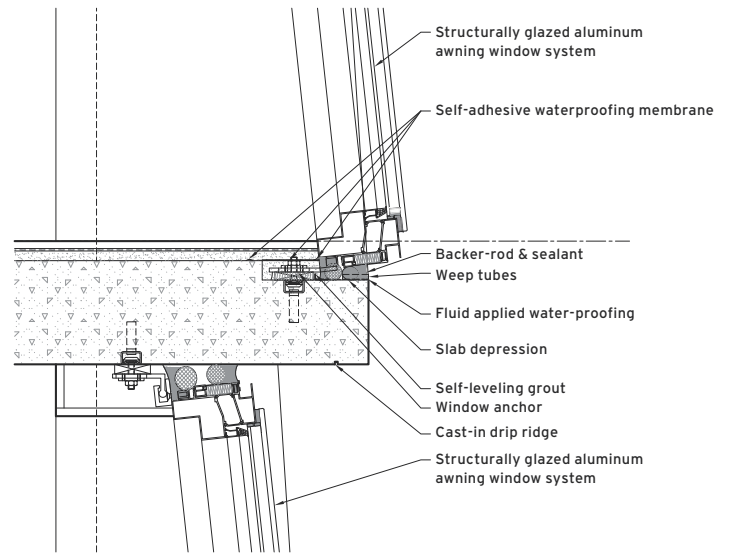


GROUND-FLOOR PLAN

- | | |
|-----------------|------------------------|
| 1 ENTRANCE | 6 KITCHEN |
| 2 CHRYSTIE PARK | 7 LOBBY BAR |
| 3 SHOP | 8 BAR |
| 4 CAFÉ/DELI | 9 SECOND-LEVEL KITCHEN |
| 5 RESTAURANT | 10 GUEST ROOMS |



MORE THAN A PRETTY FACE The aluminum-profile extrusions for the hotel windows (above) attract attention. Inside, interiors turn warmer with the coppery sheen of the escalator (opposite, bottom left); the grainy-plywood-lined restaurant, the Kitchen, which opens on to a small rear garden (opposite, top); and the comfortably serene second-floor lobby bar overlooking the front park (opposite, bottom right).

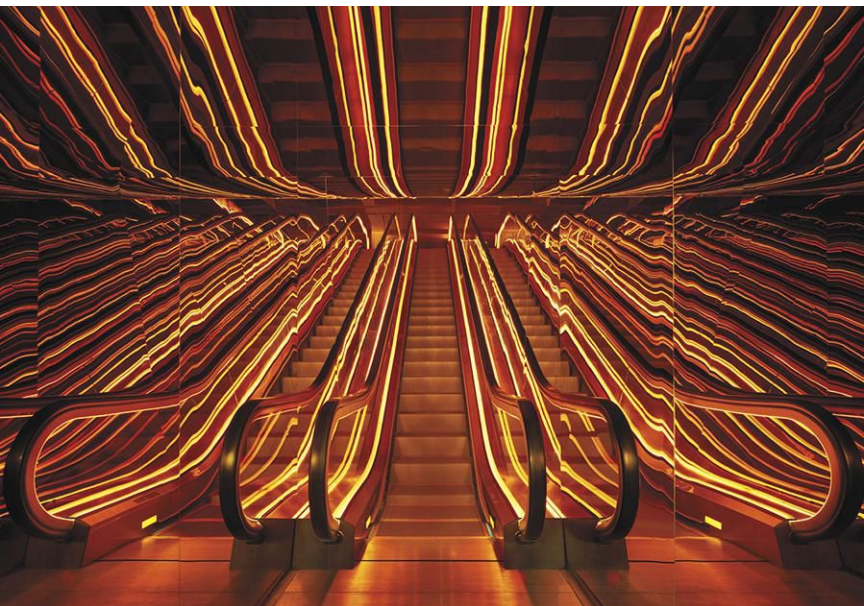


WINDOW SECTION DETAIL

ascend takes you to the second-floor lobby, where one spacious lounge overlooks the front garden, the other, a patch of foliage at the rear.

Herzog & de Meuron's approach to materials is expressed not only in the architecture but in the interior finishes and built-in furnishings. For example, by using wire-brushed Douglas fir plywood form-work for the exposed concrete frame, the firm animated the surfaces with a textural, grainy pattern. Its decision to cover the interior's walls and ceilings with wire-brushed Douglas fir-larch plywood, treated for fire protection, reinforces the slightly rough-and-ready look of the concrete columns.

Against Herzog & de Meuron's strong backdrop is a layer of comfortably modern, soigné custom furniture and objects designed by Bonetti/Kozerski Architecture and Design. The young firm also worked with Schragar to reinforce the hideaway feeling of the basement-level entertainment venue, called the Public Arts Club. Here, raw concrete, steel, black glass walls and brown leather ban-





FRAMES WITHIN FRAMES The typical hotel room features an alcove-like enclosure of white oak (top) proportioned to frame the window. The alcove is, in turn, called out by a frame of inset lighting. The bathroom (above) features custom cabinets and a sink wall of curvilinear white oak fluting.

quettes set the downtown tone, minus the scuzziness.

The design collaborations in the making of the Public, it is safe to say, were heavily guided by Schrager's pronounced predilections. "Ian's a great sparring partner in developing ideas," says Mergenthaler. Since this is the third project by Herzog & de Meuron for Schrager (the apartments at 40 Bond Street opened in 2008, while 160 Leroy Street is still in construction), the partnership is clearly clicking. Carlos Cardoso of Beyer Blinder Belle, the executive architect for the Public, also credits the well-executed construction to the sense of camaraderie among the builders and engineers.

And then there's the neighborhood. The former working-class enclave and gateway for immigrants has been evolving for years into an artsy hot spot, with the opening of galleries, clubs, restaurants, and museums. But, as the ruggedly chic Public settles in, let's hope it can become a welcome part of the older community. For starters, Schrager and company could fulfill its earlier promise to create a small park and playground on the land of Ten Stanton for the neighbors who lost their outdoor amenity. And after the publicity-stunt peep shows have died down, maybe the smartly crafted Public will be appreciated more for its sculptural windows than for the activities they frame. ■

credits

DESIGN ARCHITECT: Herzog & de Meuron – Jacques Herzog, Pierre de Meuron, partners; Ascan Mergenthaler, partner in charge

EXECUTIVE ARCHITECTS: Beyer Blinder Belle Architects & Planners

ENGINEERS: DeSimone Consulting Engineers (structural); ADS Engineers (m/e/p/security)

CONSULTANTS: Bonetti/Kozerski Architecture and Design (public interiors); Madison Cox (landscape); M. Paul Friedberg & Partners (executive landscape

architect); Fisher Marantz Stone, Isometrix Lighting + Design (lighting); Gilsanz Murray Steficek (facade engineering); Reg Hough Associates (concrete)

CLIENT: Ian Schrager, Steve Witkoff, and Ziel Feldman

SIZE: 246,000 square feet

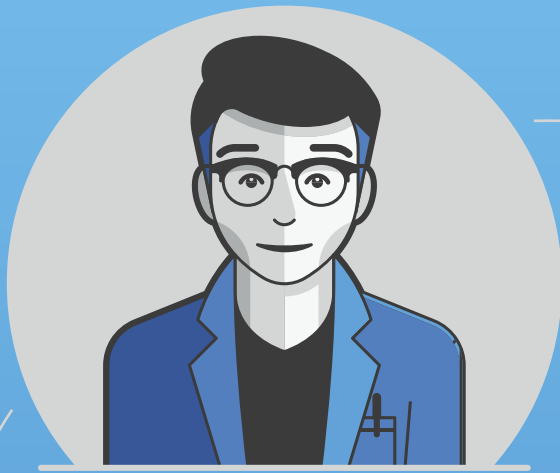
CONSTRUCTION COST: \$300 million

COMPLETION DATE: June 2017

SOURCES

HOTEL ROOM WINDOWS: Intercom/Wicono

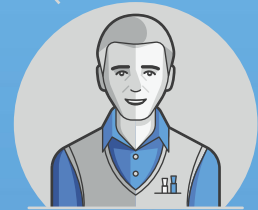
ESCALATORS: RimexMetals



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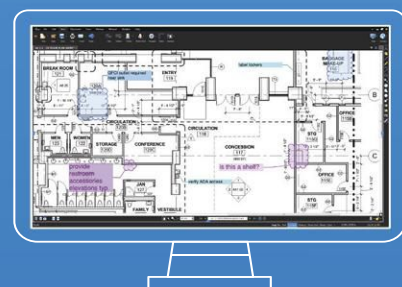


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LIGHTSPEED OFFICE IN MONTREAL BY ADCF



Enigma | Barcelona | RCR Arquitectes and Pau Llimona

Cloud Nine

A star Catalan chef cum restaurateur enlists this year's Pritzker Prize-winning firm to create an engaging environment for an innovative culinary experience.

BY DAVID COHN

The design concept for Enigma, an avant-garde culinary venture in Barcelona, was to “create a world of its own, without references, to help you open yourself to a cuisine that also doesn't want to work with known references,” says Carme Pigem, a partner of RCR Arquitectes. “We wanted to let your feelings and emotions be carried away by complete sensuality, as if in a cloud.” The architects, who are this year's recipients of the Pritzker Prize, cite the cloud-making installations of Dutch artist Berndnaut Smilde as a point of inspiration.

Their first move was to seek spatial openness, depth, and ambiguity in the layout. The loosely defined, organically shaped spaces flow into one another, leading off in every direction, including through much of the open kitchen. Spaces are delimited by small sections of wall, which frame the spatial layers rather than enclosing them, and more diffusely by runs of narrow, freestanding panels of molded glass, which can pivot for different degrees of enclosure.

In the same spirit, the finishes depart from the minimalist palette typical of RCR's work. For this project, the architects used busier, textured surfaces to create an overall atmosphere that is indeed a bit watery, something like a gray, rainy day. Walls, floors, and counters are clad with sintered stone, a manufactured material produced from dry sands that are compressed and fired at high temperatures. The slabs, up to 10 feet long, are grayish or silvery in color and have a slightly reflective surface. The architects imprinted the floors and walls with the subtle organic forms of watercolors they created for this project. The walls have an additional textural layer provided by the same glass panels used for the spatial dividers. Molded with vertical cords and veins, these transparent sheets create streaky refractions of light, as if it were raining. This effect is particularly intriguing at the windows, which are covered with larger sheets of the glass that convert the changing colors of passing cars and stoplights outside into a shimmering, evanescent presence.

The ceiling is a spongy membrane of stainless-steel mesh, crinkled to gain a cloudlike density and with the light from a grid of LEDs above it poking through in small bursts. The architects designed the chairs and tables in clear reinforced resin, which they chose for its warmth compared to glass. The resin refracts the light from the ceiling spots to glow from within, converting the furniture into luminous points of focus in the spaces. The overall ambience is unconventional but discreet, offering an intriguing backdrop for the main event of the food.

Enigma heads a small fleet of Barcelona restaurants created by



DISCREET INDULGENCE Enigma occupies the raised ground floor of a nondescript office building in central Barcelona. Guests gain access via a PIN code (above). Inside, the curving entry ramp (opposite) offers a disorienting transition. Walls of sintered stone are faced with molded-glass panels for added shimmer.



SENSORY FEAST The dining room (above), with sintered stone floors and walls veiled in glass, has stormy ceilings of crumpled steel mesh with LEDs. The architects designed the clear resin furniture and waitstaff uniforms. Molded glass screens add to the mystery of the spatial layering, within the interstitial spaces (top, left), and between the dining room and kitchen (left).

PHOTOGRAPHY: © PEP SAU (TOP); PEPO SEGURA (BOTTOM); DÁMASO PÉREZ (OPPOSITE)

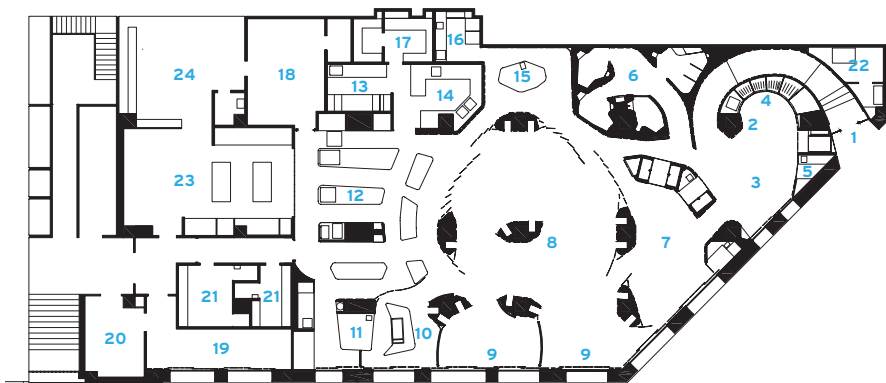


Albert Adrià, the brother of Ferran, the chef who revolutionized contemporary cuisine at the mythic El Bulli restaurant, which closed in 2011. Albert was the pastry chef at El Bulli, and he casts Enigma as its successor, an outpost of high-stakes gastronomic adventure. Each night, a small group of diners makes its way through a sequence of stations to sample 35 to 40 dishes. You may find yourself before a morsel of transmogrified grapefruit served on a fragile shiso leaf, a sea anemone dusted in Earl Grey tea, a sliver of wild pigeon, a dab of foamed horseradish, or a bite-size piece of squid briefly seared over a Japanese grill.

Working together, Adrià and RCR decided to spread the dining experience throughout the space in a rather digestive process, a ceremonious procession guided by the attentive waitstaff. The curving

entry hall circles 180 degrees and up a few steps to create a disorienting transition into the restaurant. Guests are received in the Welcome Area and led to the Cava (or wine cellar), the Cocktail Bar, and past the open kitchens to the Grille, sampling a series of drinks and snacks at each station. In the sit-down dining room they are treated to a more extended session of the same, before being ushered out of the RCR-designed space and into a back room that recreates the black-leather, stained-wood decor of 41°, the cocktail bar that first brought Albert to prominence. Here guests can linger over a final drink before slipping out a back door to the street.

The RCR-designed spaces share the same finishes and overall ambience, but the incongruous addition of the 41° bar was obviously the client's idea. Pau Llimona, a former RCR staff member who collabo-



- 1 ENTRANCE
- 2 RECEPTION
- 3 WELCOME SPACE
- 4 COAT CHECK
- 5 OFFICE
- 6 RESTROOM
- 7 THE CELLAR (WINE)
- 8 DINING ROOM
- 9 PRIVATE DINING AREA
- 10 TEPPANYAKI GRILL
- 11 PASTRY KITCHEN
- 12 KITCHEN
- 13 HOT KITCHEN
- 14 SCULLERY
- 15 COCKTAIL BAR
- 16 COCKTAIL PREP AREA
- 17 REFRIGERATION
- 18 STORAGE
- 19 CONFERENCE ROOM
- 20 TRASH
- 21 DRESSING ROOM
- 22 HVAC
- 23 WORKSHOP
- 24 41°

FLOOR PLAN



DISPLAY KITCHEN The Teppanyaki Grille (right), one station of the peripatetic meal, is lit from above with subtle accents of red. (Other stations feature blue and lilac light.) Surfaced with sintered stone, the kitchen (opposite) is visible to diners. Rear glazing screens it from the workshop where new dishes are tested.

rated with them on the project, defends the immersive wholeness of their design: “We didn’t want to create a roller coaster of ‘oohs’ and ‘aaahs.’ We wanted to bring people into a special world and for them to come out of that world and reflect on it.”

Underlying this experiential approach is an idea about the relation between architecture and the senses that informs all of RCR’s work, and that combines the Zen-influenced spirituality they imbibed on an early visit to Japan with an earthy, country sensuality. This spirit is perhaps most in evidence in their interventions at Les Cols restaurant in their native town of Olot, in remote northern Catalonia (RECORD, September 2003, page 136), and especially in the sleeping pavilions they added to the restaurant’s garden, which are built entirely of glass—floors, walls, ceilings, and garden fences. Near their studio of some 50 architects in Olot, RCR is now developing a research lab dedicated to exploring these ideas. Pigem reports, “We want to investigate the essential qualities of space, and how it relates to life—the spaces we need to help us understand life in its essence.” Perhaps this quest is the true enigma that lies at the heart of their design for Albert Adrià. ■

credits

ARCHITECTS: RCR Arquitectes – Rafael Aranda, Carme Pigem, Ramon Vilalta, principals; Pau Llimona

ARCHITECT OF RECORD: SGA Arquitectos

ENGINEER: PGI Ingeniería (mechanical)

CONTRACTOR: Pujalte Construcciones (builder)

CONSULTANTS: Marbres Rodón (sintered stone); Artec3 (lighting); See Sound (audio)

CLIENT: Albert Adrià Projectes

SIZE: 6,000 square feet

COST: withheld

COMPLETION DATE: January 2017

SOURCES

SINTERED STONE: TheSize (Neolith)

LIGHTING: Davide Groppi

METALWORK AND FINISHES: Metálicas Olot

DECORATIVE GLASS: Cricursa

HVAC: LG; Instalaciones Gava

KITCHENS: Complet Hotel; Frigicoll

FURNITURE: Art&Design

UNIFORMS: CSTY



Hidden Tints Apartment | Stockholm |
Note Design Studio

Color Theory

Forgotten 19th-century hues inspired the palette of this former office turned residence.

BY ANA MARTINS

WHEN STOCKHOLM resident Johan Malmberg started looking for a new home for his family, the inflated prices of the housing market in the Swedish capital meant that he had two options: pay a great deal of money for an old apartment and then spend even more renovating it, or buy something new. “But, then,” he says, “nothing is ever exactly as you want it to be.” So when Malmberg saw a 1,900-square-foot space that had recently housed the nondescript headquarters of a fashion company, he saw its potential, despite its not having a full bathroom or kitchen. Located on the fourth floor of a 19th-century corner building, originally a private house in Östermalm, a wealthy residential district, the carpeted, all-white commercial space would provide an opportunity to build an apartment to suit his specifications. While it was filled with distinct historic details, its charms were mostly under wraps. Despite needing to be completely fit out to make it a residence, the price luckily was right.

Before he even found an architect, he had a rough idea of the layout he wanted—an entry hall leading to a study, small laundry, and common bathroom on the left, and a kitchen and dining area installed in the large central space to the right. That would be flanked by a living room and children’s room on one side, and a master suite on the other. In selecting the right firm for the job, Malmberg says, “I felt the project needed to be in the hands of a studio with an overarching set of skills.” He chose Note Design Studio for its ability to handle everything, from the smallest details to furniture design and overseeing construction.

The versatile Stockholm-based studio, which does architecture and interiors as well as product and graphic design, chooses to immerse itself fully in the process of creating a space for the few private commissions they accept. Though time-consuming and labor intensive, the architects see this approach as the best way to guarantee quality. It meant starting with the deconstruction of the space, as it had been altered over the years, in order to honor its history and imbue it with new life. “Respecting the previous architecture



PHOTOGRAPHY: COURTESY NOTE DESIGN STUDIO

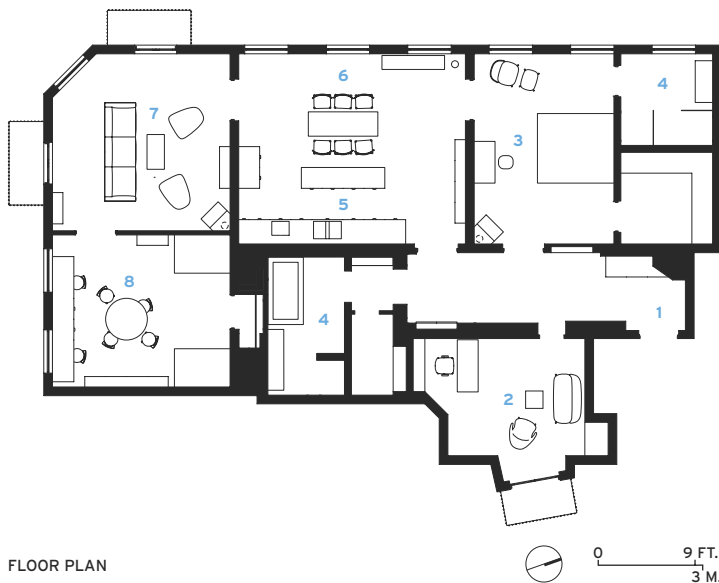


GENERATIONAL MIX
Painted in a soft pastel based on old paint colors discovered during the renovation, a new kitchen/dining area occupies the apartment's largest and most central room. Its terrazzo island, mustard-colored pendant light, and custom sage-green cabinet feel at home with existing architectural details.

was a very important point for us," says Cristiano Pigazzini, firm cofounder. "We see many beautiful renovations, but they often disregard the history or the value of the previous architecture." In order to avoid this, the studio began to strip away the traces of the 20th-century office—the carpeting and dropped acoustic ceiling with its spotlights—gradually revealing the space's full potential.

Striving to honor the distinguishing characteristics of the apartment's original design and decoration, Note restored its ornate door frames and stucco ceilings, refurbished or replicated its patterned oak-wood floors, and incorporated its original porcelain-tiled corner stoves into their design. As they did this, they drew a line between past and present, steering clear of pastiche by designing all missing elements in a contemporary, minimalist—and very Scandinavian—style. They even differentiated two new walls by keeping them without moldings at the floor and ceiling, and then surfacing them with a scored pattern that echoes the parquet floors—a motif they would repeat on the doors of custom cabinets throughout the apartment.





FLOOR PLAN

- | | |
|----------------|-------------------|
| 1 ENTRANCE | 5 KITCHEN |
| 2 STUDY | 6 DINING AREA |
| 3 MASTER SUITE | 7 LIVING ROOM |
| 4 BATHROOM | 8 CHILDREN'S ROOM |

ALL AROUND THE HOUSE The children's room (above) is outfitted with custom casework and N65 chairs by Alvar Aalto. A swing serves as a playful and artistic focal point. The living room features a Tabula table by the architects and a Piero Lissoni Rod sofa (opposite, left) and one of the building's original tiled stoves (opposite, right).

As they carefully removed layers of the 20th-century office, they discovered traces of a mustard-yellow paint from the 19th century that—along with the pink, green, and yellowish-white tiles of the three stoves—inspired the design team to develop an eight-tone color palette. (It also led the architects to name the project Hidden Tints for the palimpsest aspect of the hues.) This allowed them to give each room a singular identity while contributing to a coherent atmosphere throughout the apartment. “We wanted the transition between the rooms to be smooth, with the same aesthetic characteristics everywhere,” says Susanna Wählin, the firm's interior architect.

Even though Malmberg expected to use most of the furniture from his old apartment, he soon understood that “pushing the old furniture into the new apartment could destroy the potential of the place.” The only piece that survived was a long dining table, which was sanded and finished to better blend into its new home. Note further explored the underlying color and material palette. In imagining furniture pieces and lighting fixtures, they customized a variety of their own product designs to match the palette of yellow, green, and pink hues. “We never push our furniture pieces in our projects, but in this case they do fit well,” says Pigazzini. “Sometimes our work is easier, because we can customize every piece with the right color and material for a specific project by going to the manufacturers that already collaborate with us.”



DISTINCT DETAILS A new veneered wall in the master bedroom (left) has a scored pattern inspired by the parquet oak floor. This same motif reappears on the new cabinetry in the study (above and opposite), as well as in the other rooms in the apartment.

credits

ARCHITECT: Note Design Studio – Cristiano Pigazzini, founder; Susanna Wåhlin, My Degerth, interior architects

CLIENT: Johan Malmberg

SIZE: 1,900 square feet

COST: withheld

COMPLETION DATE: 2017

SOURCES

CASE GOODS: Lerch Träinredningar

FURNITURE: Karl Andersson & Söner (Shell stool); Federicia (Pato swivel armchair); Gubi (Beetle lounge chair, ottoman, and sofa); Living Divani (Rod sofa); &tradition (Catch lounge chair); Won (Mango lounge chair); Magis (Clouds hanging sculpture)

LIGHTING: Zero (Silo pendant and floor lamps); Areti (Two Spheres pendant and Row sconce); Vibia (Pin 1655); Flos (Mini Glo-Ball and Glo-Ball Basic)

Adamant that there is a sustainable advantage to a “less but better” formula, the remaining pieces chosen by the studio include iconic 20th- and 21st-century designs such as the children’s chair N65 by Alvar Aalto, a wire mesh Cloud pendant lamp by Benedetta Mori Ubaldini, and a Vertigo lamp by Constance Guisset. “We wanted each piece to be an investment in quality,” Pigazzini says.

Despite, or maybe because of, its disparate elements, nothing in the apartment seems unbalanced, excessive, or out of place. As the owner puts it, “The house’s distinct color scheme and design is relaxing and stable. It’s going to be hard to destroy it, even when we start decorating with what we bring as we live here.” ■

A book editor and freelance journalist based in the Netherlands, Ana Martins writes about architecture and design.





Dolce&Gabbana | Venice | Carbondale

Splendor in the Glass

A luxury brand's richly detailed new shop reflects the spirit of its celebrated locale.

BY CHRIS FOGES

PHOTOGRAPHY BY ANTOINE HUOT

Dolce&Gabbana's palatial new store in Venice is among the first fruits of an alternative retail direction for the Italian fashion house, which is dropping the global identity of its outlets to give more latitude to individual locations and architects. The Venetian design, by Paris-based studio Carbondale, draws on both D&G's heritage and the unique architecture of the city. "Venice is not a shopping destination, like Paris or Milan," says Carbondale founder Eric Carlson. "It's a cultural destination, and the idea was: make somewhere visitors put on their list of things to see."

Arranged over two floors of a former bank on Calle Larga XXII Marzo, near Piazza San Marco, the 8,000-square-foot store comprises restored rooms in the older part of the building, which dates from the 1880s and faces the street, and equally opulent but more contemporary interiors created within a 20th-century addition behind.



TIME CAPTURE Behind the retained stone facade of the former bank, designed by Venetian architect Giuseppe Torres (above), the restored "welcome room" (left) displays accessories for men and women on bespoke units fabricated from lacquered Noce Canaletto wood with polished brass, and gold silk velvet.





ALL THAT GLITTERS Within the 65-foot-long, 15-foot-high “canal room” (opposite), handbags are displayed on brass brackets against a gold leaf-mosaic tiled wall. At its far end, the jewelry room (above) has a black-marble mosaic floor, a deep-blue mirrored ceiling, and blue mosaic tiled walls inset with 24-carat gold stars.

Visitors entering a “welcome room” in the former banking hall are instantly immersed in authentic historic Venice. A restored coffered wooden ceiling with inlaid marquetry, and a polychromatic marble floor pile detail upon detail, while modern furnishings are designed to recede from view.

In the newer part of the building, Carbondale sought an interpretation of Venice that eschews both a pastiche of its glory years and also “the faded patina that we are attracted to in America,” says Carlson (who hails originally from Ann Arbor, Michigan). Domenico Dolce and Stefano Gabbana instead urged the architects to study the Luchino Visconti film *The Leopard*, set in 1860s Sicily, whose “colors are vibrant and alive.” The fashion designers were keen to represent Venetian architecture and aesthetics as living tradition, rather than as a museum piece. The fashion house founders compared two images of the

city—an overblown Renaissance oil painting and a 1960s photograph of the Piazza San Marco, wet with reflections shimmering on the pavement. “Domenico pointed at the photo and said, ‘That’s our Venice,’” recalls Carlson. “Something crisp, something modern.”

The city’s form is consciously evoked in the plan of the store, which has been reconfigured to create an enfilade of rooms, like a palazzo. A narrow “canal room” links the welcome room to the jewelry room in the back, opening out at the sides to displays of clothing and shoes, and organizing circulation within the building as the waterways do in the city. Light from above is bounced around by a gold leaf-mosaic tiled wall and marble floor, in an echo of the reflected light that animates the city’s facades.

The most overt reference to Venetian architecture is in the jewelry room. Its walls are lined in deep-blue glass mosaic tiles inset with 24-carat gold stars—a color and motif borrowed from Saint Mark’s Basilica. Other allusions are subtler: stone and fabrics echo the blue-green of the lagoon, while lacquered woodwork recalls the sleek water taxis that prowl the canals. Distinctively Venetian fixtures

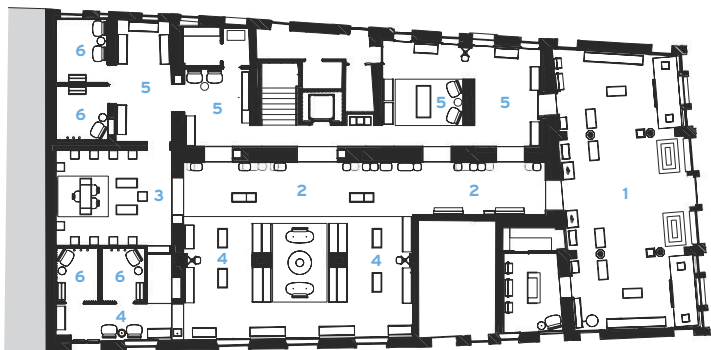
RICH REFLECTIONS From the second-floor women's formal wear area, lined with mirrors and Giallo Siena marble (right), a gold door leads to a suite of historic rooms, used for couture fittings (opposite), featuring a restored ceiling of inlaid and painted wood, and silk wall panels woven with gold.

were fabricated by local craftsmen. Florid chandeliers came from the Seguso glass workshop on the island of Murano, along with sculptural tables and hanging rails.

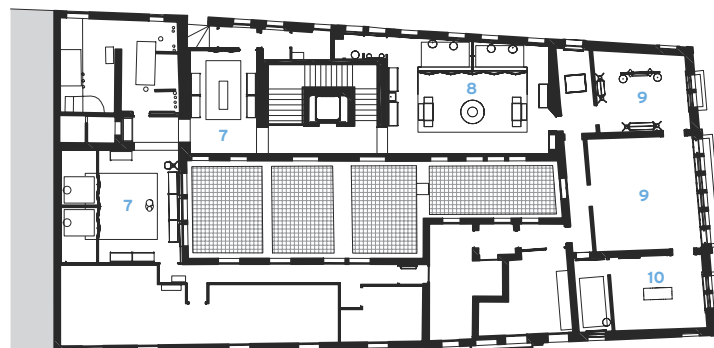
Fine craftsmanship is also evident in the detailing of the junctions between materials. Brass fillets add articulation to wooden doorjambs and display units. Mirrored walls disappear into shadow gaps at the top but overhang marble baseboards, with light spilling from hidden sources behind.

Mirrors, polished marble, and shiny brass are consistent themes throughout the store but are handled in different ways, to denote distinct areas and to generate diverse spatial effects. Reflections double the apparent size of rooms or provide escapes for the eye, so that the rich intensity of displays and interior finishes never overwhelms. A blood-red mirrored ceiling is paired with pinkish marble walls and a cherry-red silk carpet to identify the women's ready-to-wear clothing, while nearby menswear is designated by a blue-tinted mirror and green marble. Colors are matched in bespoke silk-velvet-covered chairs, resembling tailors' pincushions, that are distributed liberally throughout the store, reflecting the fact that shoppers in the car-free city spend significant time on their feet.

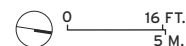
It is this anticipation of customers' needs and desires, more than the expensive materials, that creates a luxury retail experience, says Carlson. "It's about how people move through the spaces and how we take care of them. When they try on clothes in front of the mirror, how do we make them feel beautiful?" To that end, Carbondale worked with London-based Mindseye to develop a mirror lighting system



GROUND-FLOOR PLAN



SECOND-FLOOR PLAN



- 1 HISTORICAL WELCOME ROOM
- 2 CANAL ROOM
- 3 JEWELRY
- 4 WOMEN'S SHOES AND CLOTHING

- 5 MEN'S SHOES AND CLOTHING
- 6 DRESSING ROOM
- 7 MEN'S FORMAL WEAR
- 8 WOMEN'S FORMAL WEAR

- 9 HISTORICAL WOMEN'S SERRA ROOM
- 10 HISTORICAL MEN'S SARTORIA ROOM

with four separate sources, which produces a crystal-clear reflection without glare.

Material opulence reaches its apogee on the upper floor, where formal wear is displayed. Wood inlays replace carpets on the marble floors, and gold abounds, woven into silk damask screens and embedded in Murano glass fixtures. Above the welcome room, a restored suite of 19th-century offices is a showcase for Venetian-themed couture dresses, displayed below original frescoed ceilings and new, wildly elaborate chandeliers.

Few visitors make it this far: the couture rooms are invitation-only, and the austere green marble stairway does not encourage casual browsers to venture upward. On the lower floor, however, shoppers and sightseers are made equally welcome. Dolce&Gabbana is “an Italian brand, not Parisian,” says Carlson. “It’s exclusive but with a heavy dose of inclusivity, which is reflected in the store design.” But while openness and navigability are important, says Carlson, “the ability to be lost is also a valid objective.” In the dreamlike spaces conjured by shimmering reflection, layered luxe materials, and exquisite detail, it is easily achieved. ■

credits

ARCHITECT: Carbondale – Eric Carlson, principal; Pierre Marescaux, associate; Jessica Marques, Juliana Huet, Claudia Brivio, Valerie Vaudoyer, Pedro Rodrigues, Elie Mahin, Rebecca Peretti, Agnese Canziani, Claire Duvoux Mauguet, Anna Vnukova, Caroline Mortier, Raphael Scavelli, design team

CONSULTANT: Mindseye (lighting design)

CLIENT: Dolce&Gabbana – Daniele Fumagali, project director; Stella Marris Gonzales, Maja Filipovic Grcic, Manuel Chiragarula, Serhat Kelesoglu, project team

SIZE: 8,600 square feet

COST: withheld

COMPLETION DATE: June 2017

SOURCES

MOSAICS: Friul Mosaic; Orsoni

GLASS FURNISHINGS: Seguso (chandeliers, display stands, mirror frames, doorknobs)

FURNITURE: Battaglia

CARPET: PBH

TEXTILES: Bevilacqua (changing rooms); Rubelli (damask in formal-wear rooms)



The Garage-B+ Automobile Service Center | Beijing | Neri&Hu Design and Research Office

Factory Finish

A building's industrial past fuses with a commercial addition for an innovative business.

BY ALEXANDRA A. SENO

PHOTOGRAPHY BY PEDRO PEGENAUTE

Difficult roads often lead to beautiful destinations," reads a quotation on a glass wall next to the entrance of The Garage-B+ Automobile Service Center in Beijing, located on a relatively quiet downtown backstreet. While this insightful saying could refer to the company's business, it might also allude to the creation of its unique base of operations, which houses offices, meeting rooms, an auto repair shop, a café, and a rooftop parking lot.

For more than two years, the Shanghai-based firm Neri&Hu Design and Research Office transformed the site, a 361-foot-long, three-story decommissioned missile factory built in the 1950s, into a contemporary

29,000-square-foot space that is both welcoming and functional. The architects preserved the original brick structure—the main hall still features tracks for soldering missiles—and added a system of "boxes" supported by steel girders to accommodate a car elevator, a mezzanine, and two top floors reinforced to support the weight of equipment and numerous vehicles.

"The best attribute of the space is the raw quality of the existing structure. Obviously, the brief made it more interesting by having a hybrid typology, combining programs that often do not go hand in hand, such as the café and garage," says Neri & Hu coprincipal Lyndon Neri.

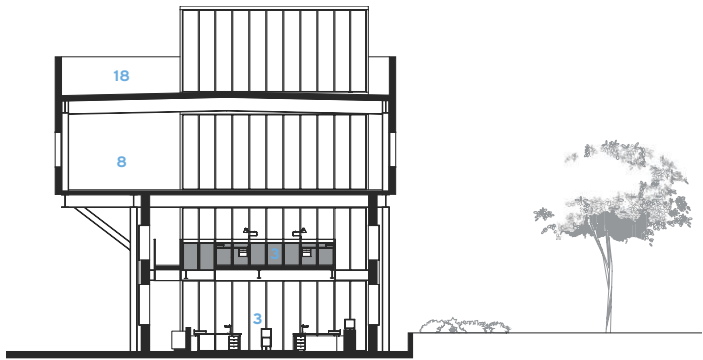
A car elevator shaft, enclosed in black metal mesh, serves as the core



CAR CULTURE

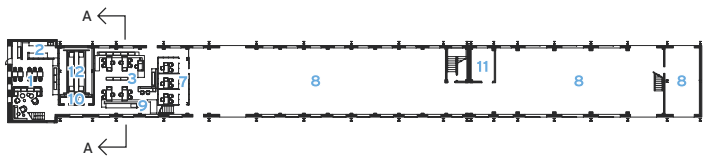
Neri&Hu turned a 1950s missile factory into an automotive center. An elevator, accessible on a tree-lined street (opposite), brings cars to the upper floors. A frame of girders supports the building's extension (this page), where metal stairs wrapped in precision-cut steel lead to mezzanine café seating, offices, and meeting rooms.



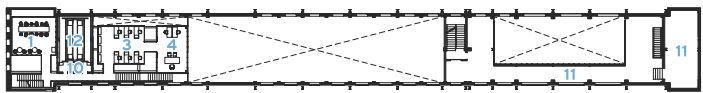


SECTION A - A

0 10 FT.
3 M.



LEVEL-ONE FLOOR PLAN

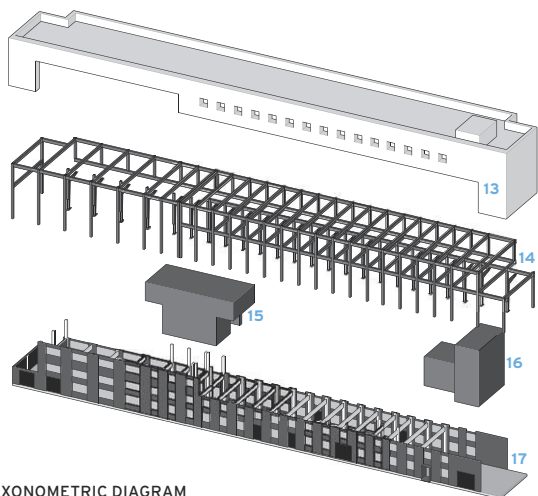


LEVEL-TWO FLOOR PLAN



LEVEL-THREE FLOOR PLAN

0 30 FT.
10 M.



EXPLODED AXONOMETRIC DIAGRAM

- | | | |
|------------------|-----------------|----------------------|
| 1 CAFÉ SEATING | 7 CONSULTATION | 13 ADDITION |
| 2 COFFEE BAR | 8 WORKSHOP | 14 NEW STRUCTURE |
| 3 OPEN OFFICE | 9 PANTRY | 15 CAFÉ BLOCK |
| 4 PRIVATE OFFICE | 10 RESTROOMS | 16 OFFICE BLOCK |
| 5 MEETING ROOM | 11 STORAGE | 17 EXISTING BUILDING |
| 6 VIP GALLERY | 12 CAR ELEVATOR | 18 PARKING |



FULL SERVICE The building's café (above) attracts not only garage customers waiting for their cars but also people from the neighborhood and a variety of those from Beijing's trendy set.

of the space, humming throughout the day as vehicles enter and exit. This activity subtly transforms the quality of light in and the aura of both the offices and café on each side of this conveyance, serving as a reminder of the main purpose of the building and the ambition of the project, which cost about \$3 million (20 million renminbi).

"For us as a practice, it was important that the old and the new have a dialogue and that the tension be expressed through the details," Neri says. On the outside, the original factory walls are painted black and dark gray, while anything added on top is white. The offices and café can be accessed from the car-sized entrances of the garage or through the extension's small side door.

In the new section of the building, the dark walnut stairs and comfortable metal furniture designed for the project by the architects make for a reassuring atmosphere. In the adjacent ground-floor workshop, mechanics in the sporty black shirts of their uniform go about their day in the bright, open room. Its walls are painted in white and a light blue that suggests the typical color palette of Chinese government factories.

Noting the highly competitive nature of his line of business, B+ owner Bu Tian embarked on the project intent on highlighting the full-service aspect of his offering as a differentiating factor. "I thought it would be fun to revolutionize the industry," he says.

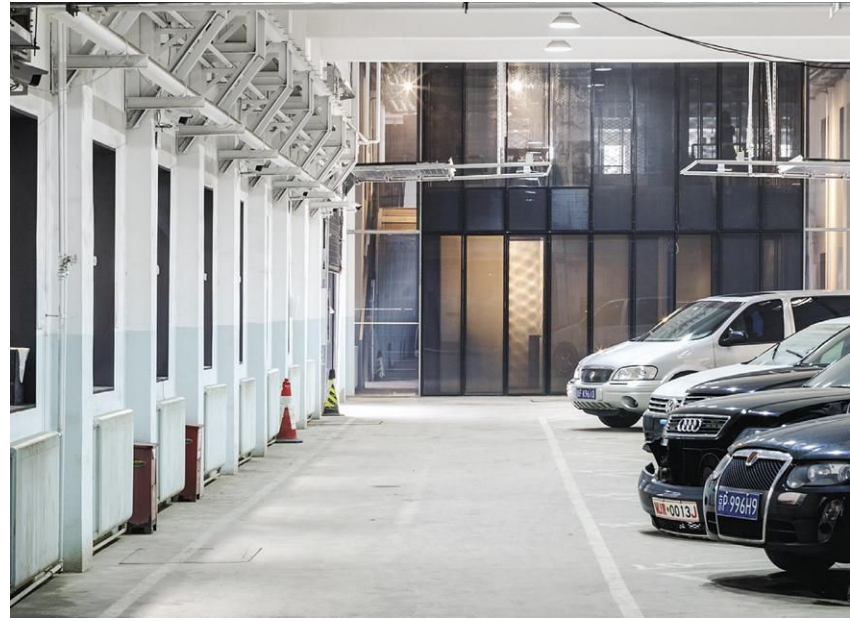
In 2008, China became the world's largest automobile market, bigger than all of Europe. Experts predict that China's roads will have 200 million vehicles on them by 2020. Beijing, home to 26 million people, has about 7 million cars. "The market is huge, but there wasn't anything geared toward innovative services for them after the sale," says Bu, who

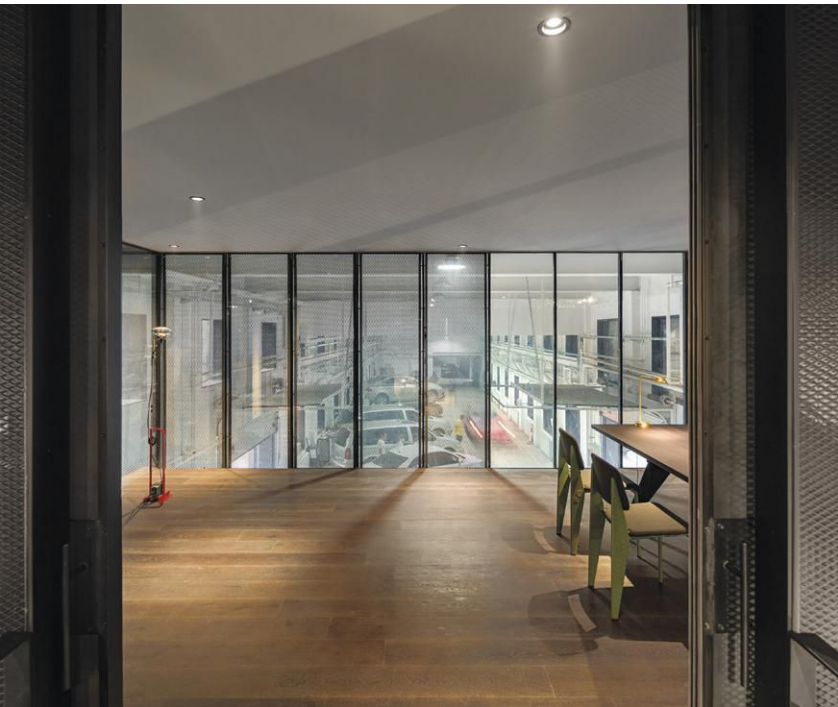
SHIFTING GEARS The garage's ground-floor workshop (right) is a nod to its past, with the tracks where missiles were once assembled preserved. In the offices (below), Neri&Hu customized tables and built-in furniture, employing their favorite materials: wood, metal, leather, and concrete.

hopes to build B+ into a game-changing brand with a string of garages throughout Beijing and perhaps, one day, across China.

At the moment, he is aiming mainly at Beijing's burgeoning middle class, people who drive sensible sedans and minivans. B+ does repairs, auto detailing, and bodywork, among other things. The company also sells car insurance and car-care products, and offers a 24-hour service hotline. Bu reckons that his thousand or so customers patronize the shop primarily because he charges 30 percent less than official dealership service centers for comparable products. But it's the environment and personal touch that has them returning.

Determined to take the garage his father and uncle started in the 1990s to the next level, he spends most of his waking hours at B+, sometimes attending to customers himself. "When you come to a garage, you are like a patient—you come because something is wrong. We want to make your worst day your best," says Bu. B+ clients like to wait for their cars in the café, enjoying their drip coffee while lounging on metal, leather, and wood furniture, thumbing through a copy of *GQ*





from the shelf of books and magazines, and enjoying the indie-music playlist.

The outlet has also become a favorite hangout for the residents of the neighborhood, and a destination for the city's hipsters. In today's China, they all typify a new generation of hardworking consumers who want much more out of their days—and perhaps out of their garages as well. ■

Alexandra A. Seno is a Hong Kong-based journalist who contributes regularly to The Wall Street Journal and other publications.

credits

ARCHITECT: Neri&Hu Design and Research Office – Lyndon Neri, Rossana Hu, principals in charge; Nellie Yang, senior associate architect; Jerry Guo, project manager; Brian Lo, Nicolas Fardet, product design

GENERAL CONTRACTOR: Anxiangshengyuan Interior Decorating

CLIENT: The Garage-B+ Automobile Service Center

SIZE: 29,000 square feet

COST: \$3 million

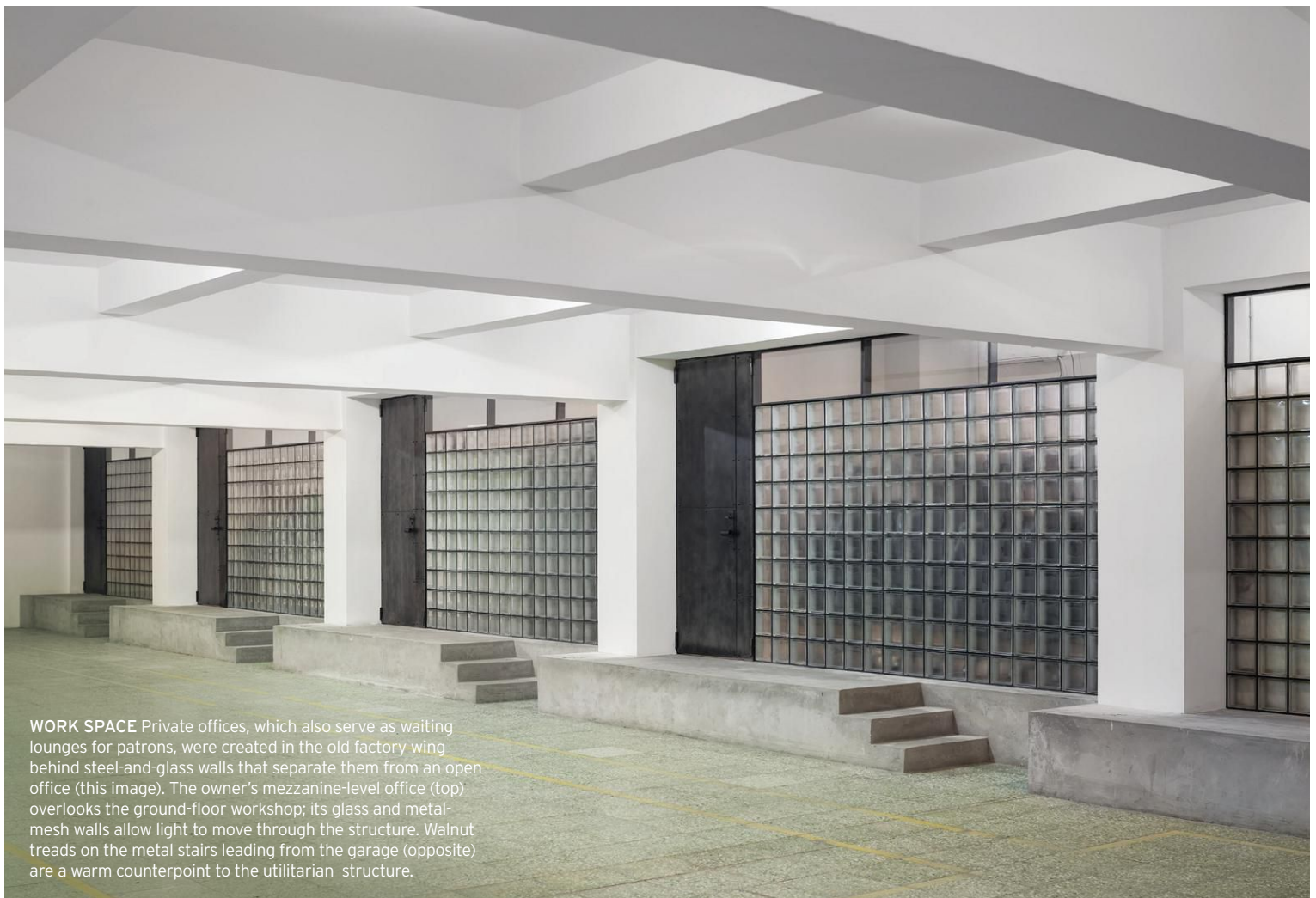
COMPLETION DATE: July 2016

SOURCES

FURNISHINGS: Stellarworks, Vitra, Kartell, Hay (chairs); Custom by Neri&Hu (chairs, tables, cabinets, pendant lighting)

TASK LIGHTING: Flos, Westberg, Lamp Gras

PLUMBING: Duravit (fixtures); Vola (fittings)



WORK SPACE Private offices, which also serve as waiting lounges for patrons, were created in the old factory wing behind steel-and-glass walls that separate them from an open office (this image). The owner's mezzanine-level office (top) overlooks the ground-floor workshop; its glass and metal-mesh walls allow light to move through the structure. Walnut treads on the metal stairs leading from the garage (opposite) are a warm counterpoint to the utilitarian structure.



Lightspeed Office | Montreal | ACDF

Out of the Ruins

A start-up expands its headquarters inside a castle-like building.

BY JOSEPHINE MINUTILLO

PHOTOGRAPHY BY ADRIEN WILLIAMS

Just a few short years ago, Lightspeed was a scrappy start-up with offices inside a Montreal townhouse. When it came time to look for bigger digs, the company enlisted Montreal-based architects ACDF to help find a new location and transform it into the perfect space for the growing business. The founders of the point-of-sale and e-commerce software provider—whose employees tend to be on the younger side—had one requirement: the new offices needed to have a pool.

That proved almost impossible to pull off, but by the time the team came upon the abandoned Viger Train Station and Hotel by the old port of Montreal, an immense, turreted, chateau-style structure that had been abandoned for over a decade and recently slated for redevelopment, they happily settled on a “castle” in lieu of a pool.

ACDF initially renovated the upper floors of the building for the company’s move in 2015. The design strategy was simple—leave as much as possible of the existing structure exposed. “They wanted it to feel as if they were squatters inside the castle,” says ACDF founder Maxime-Alexis Frappier. Though now landmarked, the condition of the 1898 building was much deteriorated after being gutted and neglected. Its bones, however, were impeccable. Large timber rafters, 20-inch-thick red-brick shear walls, and polished terrazzo floors define the office, which is punctuated by long rows of desks.

But what do you do when a start-up grows up? As the company blossomed into a global one—it now has offices in London, Amsterdam, and New York, among other cities—even more space was required, so it expanded onto the ground floor, in the area once occupied by the former train station. The basic strategy for these offices—destined for its nearly 100 product developers—

BRICK HOUSE Original walls within the 119-year-old building are nearly 2 feet thick. Some areas are roughly patched with concrete, contrasting with the polished terrazzo floors, also original to the building.







credits

ARCHITECT: ACDF Architecture – Maxime-Alexis Frappier, partner in charge

ENGINEER: Stantec (mechanical and electrical)

GENERAL CONTRACTOR: Anjinnov

CLIENT: Lightspeed

SIZE: 11,200 square feet

COST: withheld

COMPLETION DATE: April 2017

SOURCES

PLASTIC LAMINATE: Formica, Abet Laminati, Fenix NTM

GLASS DOORS: C.R. Laurence

HARDWARE: Rockwood, Sargent, Stanpro

VINYL WALLCOVERINGS: Groupe Lettra

PAINTS AND STAINS: Sico Paints

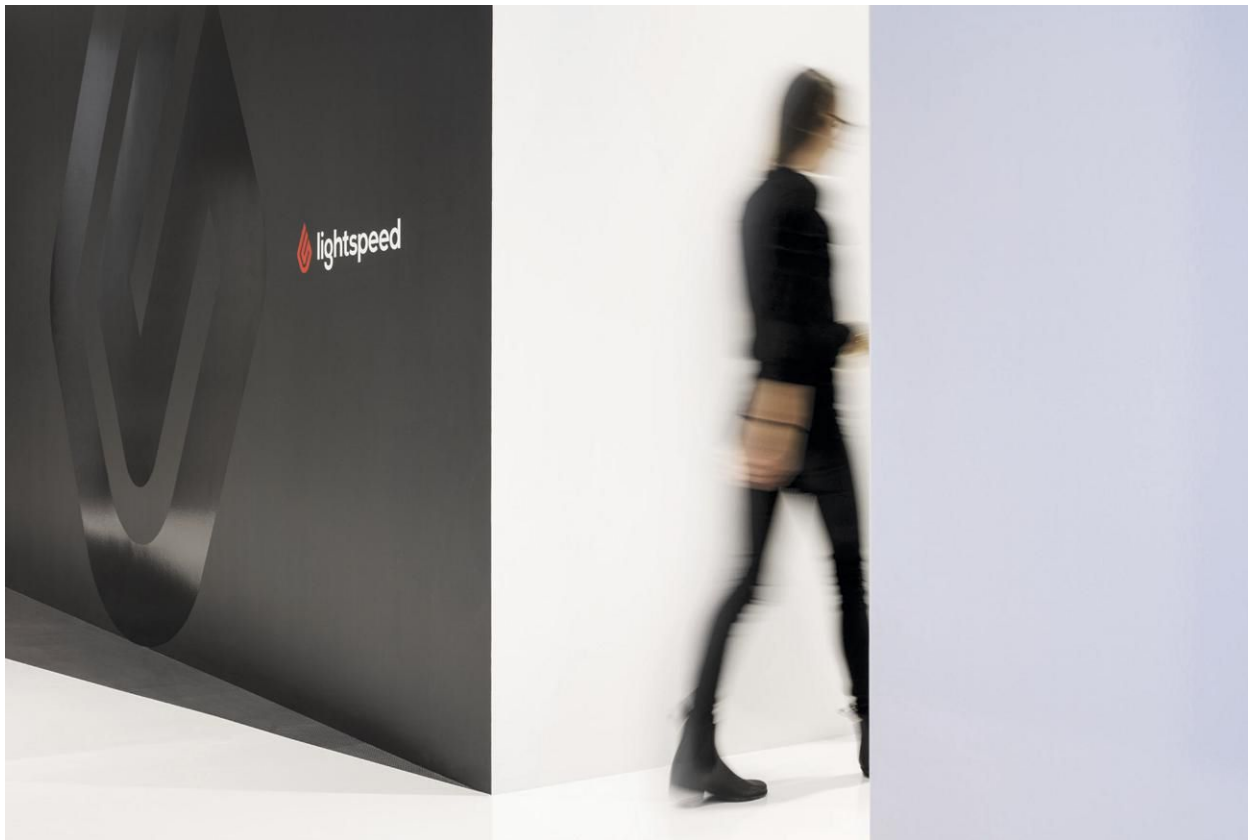
FURNITURE: Haworth, Herman Miller, Softline, Pedrali, Trica

LIGHTING: Litéline, ConTech

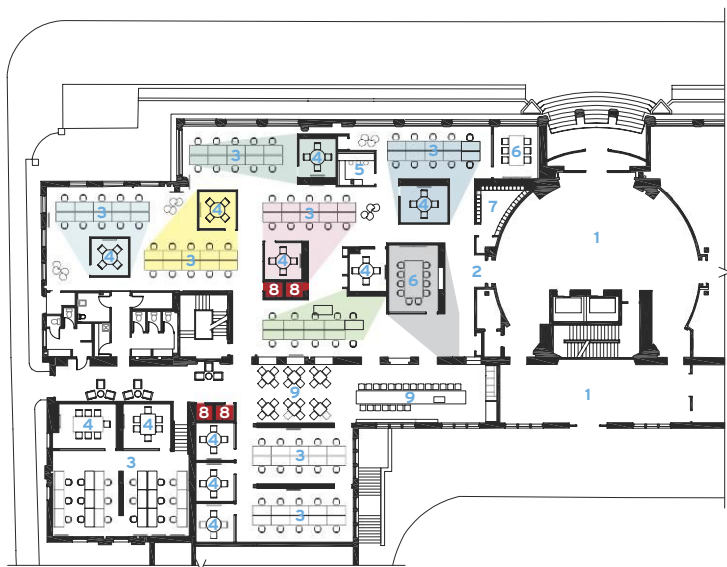
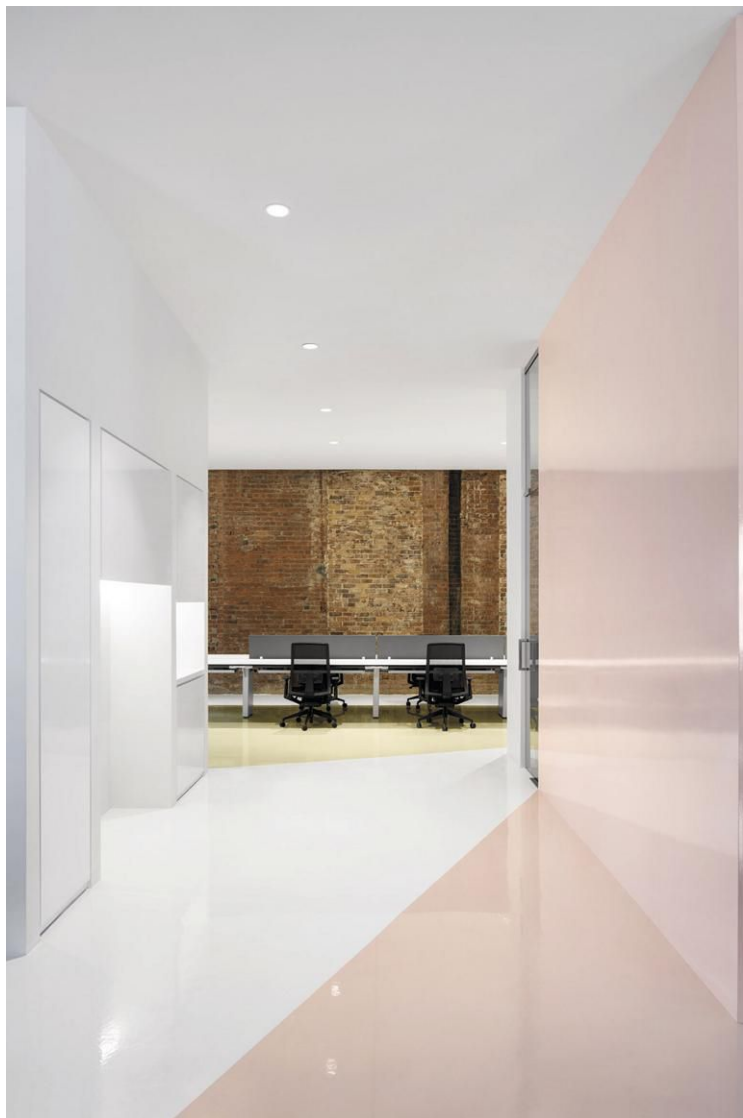
was the same, but, this time around, ACDF added some flourishes that give the space an air of sophistication while still working with a very modest budget.

Most noticeably, an alluring palette of sunny yellows, pale pinks, and soft blues extends in diagonals from the floor to the walls to mark work zones and breakout rooms for specific teams. Smaller rooms that serve as phone booths or areas for one or two people to work are painted a deep red.

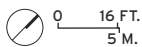
Overall, the 11,200-square-foot open office space features a glossy white epoxy-coated floor interspersed with the original terrazzo. Enclosed conference rooms are carpeted. At the entrance, microperforated vinyl in various shades of gray and black, sandwiched between



COLOR FAST
Glossy white floors, walls, and ceilings define much of the office (above). Sunny yellows and pale blues mark work zones for specific teams (top). The company logo is discreetly integrated into a wall at the office entrance (right).



LEVEL-ONE PLAN



- 1 BUILDING LOBBY
- 2 ENTRANCE
- 3 OPEN OFFICE
- 4 SMALL MEETING ROOM
- 5 TESTING LAB
- 6 CONFERENCE ROOM
- 7 COAT ROOM
- 8 PHONE BOOTH
- 9 DINING AREA AND KITCHEN

OLD MEETS NEW The subtle color palette of the new insertions is juxtaposed with the existing brick (above, both). The long kitchen and dining area doubles as a gathering space (opposite, top). The arched window openings of the building's limestone base, once exterior, now make up part of the interior (opposite, bottom).

two layers of epoxy, extends up a wall as a quiet backdrop for the company logo.

And unlike the way it is upstairs, where ceiling ducts and pipes are exposed, a white gypsum ceiling conceals most of the HVAC in the 15-foot-high, daylight-filled ground-floor space. (LEDs provide all electric lighting, mainly simple spots integrated into the ceiling as well as desk lamps.) Throughout the space, crisp, rectilinear geometries juxtapose with the jagged remnants—cut-through walls and broken-off pilasters—of the original structure, and the rough concrete patchwork that was applied over parts of it.

Some areas of the 119-year-old building, however, remain perfectly intact. Extending



through to the inside, the limestone base surrounding the arched windows, for instance, add refinement. In the back of the structure, where the building opened up to the railway tracks, what once was an exterior wall, also limestone, now defines the kitchen and lounge, a corridor-like space set off by a long, black dining table and black ceilings that obscure the ductwork overhead. The alley, as it has come to be known, serves as a relaxed break room, with smaller tables and lounge seating, or as an all-company gathering space that can accommodate up to 300 people.

The product developers moved in this spring, occupying nearly all the seats at the long white desks and adding their notes and doodles on the walls-cum-whiteboards. The fast-paced nature of a start-up means that the office has very quickly achieved a lived-in feel—one that nicely mediates the contrast between the glossy new construction and the beautiful decay. ■



Josefinas Portugal | New York | Christian Lahoude Studio

Step Right Up

An online shoe retailer's first brick-and-mortar store asserts a strong femininity.

BY ALEX KLIMOSKI

PHOTOGRAPHY BY SCOTT NORSWORTHY





AROUND THE BEND
A rose-copper cast of a tree (opposite and, reflected, this page) serves as the store's primary focal point. The designers incorporated the ceiling's existing wood slats into the interior to emphasize a feeling of lightness.

When Maria Cunha, one of the three founding partners of the fledgling women's shoe company Josefinas, contacted New York-based designer Christian Lahoude to create a flagship store in Manhattan, she thought he would pass. The company had purveyed their brand online only. This would be Josefinas's first brick-and-mortar presence, with a significantly limited budget compared to Lahoude's high-end clientele, which includes brands such as Jimmy Choo, Gucci, and Tiffany & Co. But after researching Josefinas's merchandise, Lahoude knew that he wanted to be involved. "There was something there," he says, "superior craftsmanship and quite luxurious qualities."

After Cunha and cofounder Sofia Oliveira scouted a number of potential locations throughout the city, they settled on a long, narrow 540-square-foot storefront on a boutique-lined block in the NoLita neighborhood.

The challenge of translating the label's digital identity into its first physical setting offered Lahoude an opportunity for creative freedom. "I really had a blank slate," he says. "There was no precedent, no hundred years of history."

Conceived in 2013 as a business run by women for women, Josefinas's partners were brought together through a network of entrepreneurs in Portugal. "When we started, we didn't have any money, we didn't know anything about shoes," says Oliveira. "But we wanted to create a brand that could empower women." Since their first collection—a series of ballet slippers—Josefinas has grown to include over 40 different styles of flat shoes only, including a line endorsed by legendary feminist Gloria Steinem. "We don't think that women need high heels to feel like a better version of themselves," Oliveira says.

From the beginning, the three entrepreneurs knew that pink—the color of Josefinas's shoeboxes and its signature ballet flat—had to be incorporated into the store design, but they didn't want it to be "overly girly," says Oliveira. "We wanted something that would embody a strong female character."

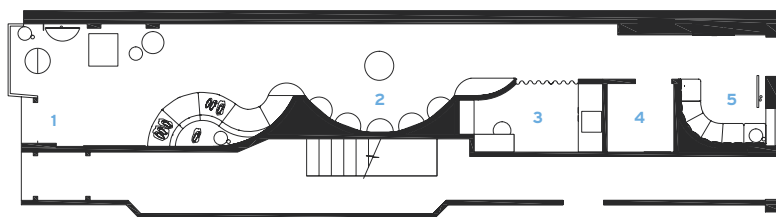
"This brand isn't about glitz or bling," adds Lahoude, "so we tried to stay subtle."

To soften up the space and minimize its linearity, Lahoude broke up the south wall by creating a series of curves that begins near the entrance with a sinuous cotton velvet sofa that flows to meet a concave alcove; there the collection is displayed (the space behind is used for storage). Opposite, a white brick wall lined with floating mirrored panels—some tinted a soft shade of peach—extends the length of the store to give an illusion of spaciousness while accentuating its ivory and coral pink hues. Concealed lighting below and above the mirrors lends an ethereal quality to the room.

The curvilinear surfaces also create a meandering circulation path through the store. According to Lahoude, evoking a journey was important to the Josefinas experience. Upon entering the shop, customers are introduced to a parlor-style setting: alongside the sofa and an accompanying lounge chair, a sparse array of shoes is presented on rosy copper stands. Just beyond, they discover the primary display of footwear, tucked into the arc of the recessed wall and arranged on lacquered semicircular shelves along its surface, which is textured with a mother-of-pearl wallcovering.



TOUCH OF BLUSH Located on a quaint boutique-lined block in the NoLita neighborhood, the storefront's blue-gray color is a cool contrast to its coral and ivory interior. The rose copper used for the signage and door handle is a unifying material, and was also fashioned into custom-made shoe stands and a tree-inspired mirror frame (opposite).



FLOOR PLAN

- | | |
|----------------|-------------|
| 1 ENTRY | 4 RESTROOM |
| 2 MAIN DISPLAY | 5 VIP SALON |
| 3 OFFICE | |





SOFT SHOE A VIP salon, articulated by a supple blush-colored banquette, is tucked away at the far end of the space, providing a place for shoppers to relax and take in views to the garden out back.

The copper reappears in the form of custom light fixtures and, most prominently, as a central artwork: a sculptural cast of a tree—made by a Portuguese artist, Jorge Direito—that encourages visitors to pause within the main display nook to peruse the collection. “The idea was to have a focal point—an organic element—that could be seen from the street, pulling people into the space,” says Lahoude. Because of the project’s budgetary constraints, a piece of curved plexiglass was placed above the sculpture in lieu of a light cove.

The path narrows to accommodate a closed employee area and restroom, only to open up again at the back of the store, revealing a “VIP area” articulated by a blush banquette, also cotton velvet, with views to a modestly furnished back garden. The journey culminates in this outdoor space, used as both an area of respite for customers and employees and an event venue.

According to Oliveira, the NoLita outpost, open for just over a year, operates as an extension of the online site. Since many of Josefinas’s shoes are custom-made for their patrons in Portugal, visitors to the boutique can place orders here but don’t necessarily walk out with their purchases. “We created an exclusive experience where the brand is made tangible,” she says.

Establishing the physical location has also proven to be a launchpad for new ideas: “We feel that the store could evolve into another concept, like a social club,” Oliveira says. “I imagine a mix of shoe shopping and conversations with other women.” ■

credits

INTERIOR DESIGNER: Christian Lahoude Studio – Christian Lahoude, lead designer; Katharina Hoerath, project manager

ARCHITECT OF RECORD: Steve Blatz

CLIENT: Josefinas Portugal

GENERAL CONTRACTOR: KJ Remodeling

SIZE: 540 square feet

COST: withheld

COMPLETION DATE: July 2016

SOURCES

CARPET: Scott Group Studio

LIGHTING: Hera Lighting

MIRRORS: Capitol Glass & Sash

WALLCOVERING: Altfield

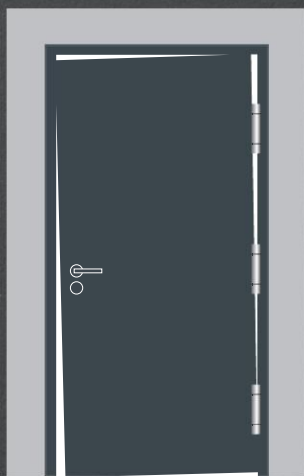
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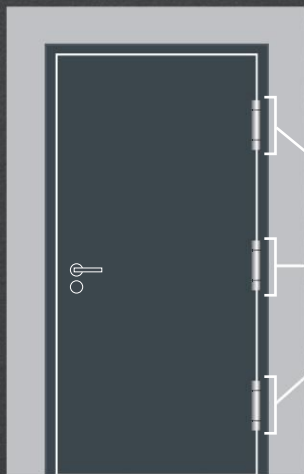
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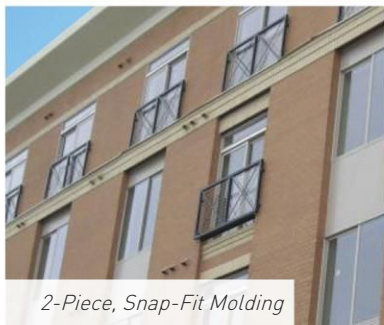
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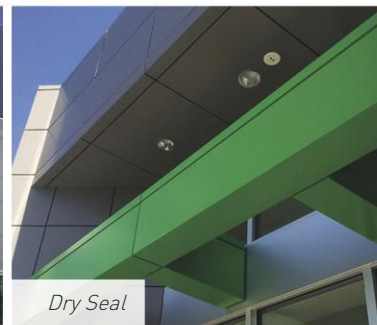
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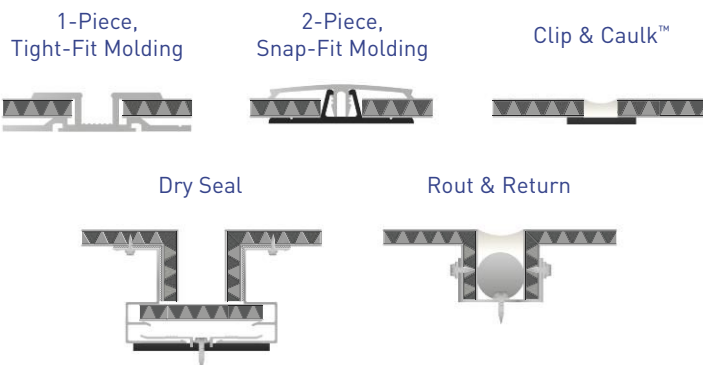
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THE LAST FIVE YEARS have seen a surge in interest in the link between the design of our physical surroundings and our health. And while many strategies that were developed to minimize buildings' negative impact on the environment also improve health outcomes, there is a growing desire among architects and their clients to address health directly. Two recent certification systems, Fitwel and the WELL Building Standard, support doing just that.

Sources say that the two certification tools and the new interest in occupant well-being is a natural progression of the green movement beyond its earlier focus on building efficiency. "It's sustainability's second wave," says Rick Fedrizzi, former CEO of the U.S. Green Building Council and now chairman and CEO of the International Well Building Institute (IWBI), which oversees development of the WELL standard. Joanna Frank, executive director of the Center for Active Design (CfAD), which administers Fitwel, explains this mounting momentum as a result of growing awareness. "The idea that design impacts health is now part of the public understanding," she says.

WELL is the slightly more established of the two systems, with IWBI releasing version 1.0 of the standard in late 2014 after six years of research and development. So far, 63 projects have been certified or precertified, and 466 projects have been registered. All in all, buildings certified or on the path to certification total more than 100 million square feet. Although the standard can be applied to a variety of project types, 418 of the registered and certified projects are workplaces, with multifamily residential developments coming in a distant second at 82. Most of these WELL projects are in the U.S., but the standard is also gaining ground internationally, especially in China.

Fitwel is younger, having just been launched in February. Although the nonprofit CfAD manages the certification process, two federal agencies, the Centers for Disease Control (CDC) and the General Services Administration, developed the rating system. The workplace-specific standard aims to improve occupants' health regardless of building size, age, location, or budget. To date, over 150 workspaces—mainly in the U.S. but with a handful of early adopters in Canada and Europe, affecting more than 165,000 occupants—have been certified under the standard, with another 600

URBAN FARMERS Biophilia plays a large role in COOKFOX's new Midtown Manhattan offices. The LEED Platinum and WELL-Gold space has three planted terraces where employees grow vegetables and raise bees.

PHOTOGRAPHY: ©COOKFOX ARCHITECTS

The Next Wave

The latest certification tools for sustainability in offices and other buildings put the focus on occupants' health.

By Katharine Logan and Joann Gonchar, AIA



projects committed through 2018.

WELL is organized around seven “concepts,” or categories: air, water, nourishment, light, fitness, comfort, and mind. Under each of these headings are 100 “features” or strategies for creation of a healthful environment. Some features, such as controlling glare from daylight and electric illumination, clearly fall under the purview of the design team; others, such as business travel policies intended to minimize disruptions to employees’ sleep and

fitness regimens, are the responsibility of the client. The standard’s features include preconditions, or prerequisites, that must be satisfied for a project to earn a Silver rating, the most basic level of certification. “Optimizations” are optional features that project teams can pursue to achieve Gold or Platinum.

Similarly, Fitwel comprises 63 strategies affecting at least one of seven “health impact categories”: healthy food options, physical activity, sense of well-being, morbidity and

absenteeism, community health, social equality for vulnerable populations, and occupant safety. The strategies, derived from a five-year survey of more than 3,000 peer-reviewed research studies, are allocated points according to a CDC-developed algorithm that accounts both for the strength of the research linking each measure to health outcomes and for the strength of the measure’s impact. For instance, out of a possible total of 144 points, projects can earn up to 30 points for measures that en-



DOUBLE PLATINUM The daylight- and plant-filled Washington, D.C., headquarters of the American Society of Interior Designers includes a variety of work environments, including open work stations, a community table (left), and huddle rooms (above). The offices, designed by Perkins+Will, earned Platinum certification for both LEED and WELL.

culture. COOKFOX Architects recently achieved WELL Gold for its new offices in Midtown Manhattan, which have three terraces with vegetable and wild flower gardens and an apiary. Among the firm's past projects is the New York skyscraper One Bryant Park, completed in 2009—the first LEED Platinum commercial high-rise. “WELL is consistent with our body of work,” says Zach Craun, a COOKFOX associate. Craun says that, without any modifications to its base concept for the new offices (which he describes as “LEED Platinum with biophilia incorporated”), the project would have qualified for WELL Silver. But by making mostly operational modifications, such as changes to the firm’s business travel policy and the inclusion of a bike-repair station (on top of bike storage and shower facilities already part of its LEED filing), the project earned the higher WELL rating.

Architects and designers say that, by and large, WELL and LEED are complementary, though it can be tricky to square some of the wellness standard’s lighting features with LEED’s energy credits. Ken Wilson, a principal at Perkins+Will and the lead designer on the recently completed offices for the American Society of Interior Designers (ASID) in Washington, D.C., points to WELL’s added air-filtration requirements. If ASID had not pursued WELL, it might have been able to earn one or two more energy points, he says. “But

it didn’t hold us back.” The offices earned Platinum ratings for both WELL and LEED.

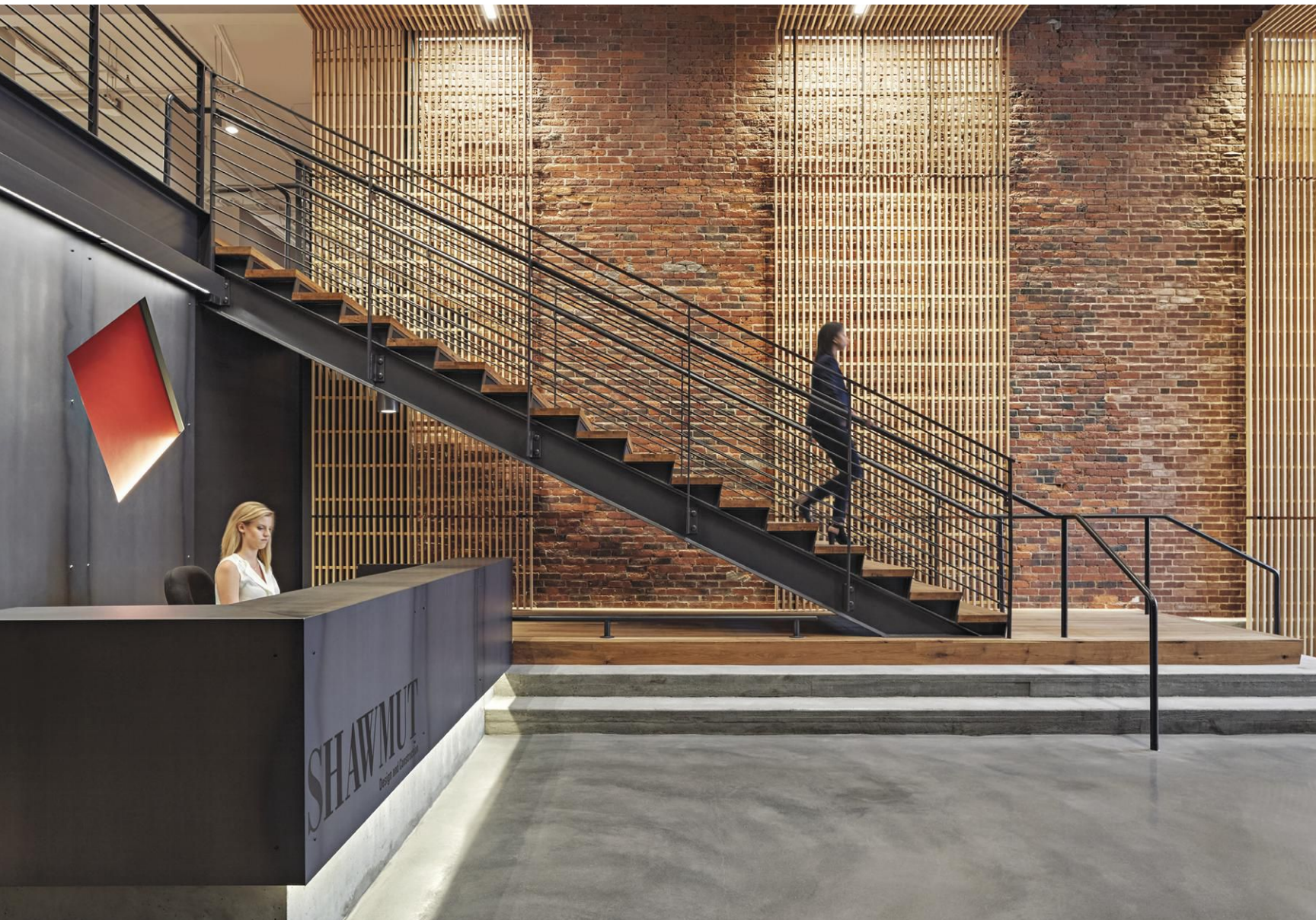
Davis Partnership Architects had a similar experience with a new three-story headquarters building it designed for the Colorado Health Foundation in the Uptown neighborhood of Denver. Principal David Daniel says it was tricky to find a balance between lighting levels and glare control while at the same time keeping the amount of glazing low in order to mitigate heat gain and loss. He expects the project, completed in 2016, to achieve Gold for both WELL and LEED.

One of the major factors in Fitwel’s ease of use is its suitability for existing workspaces. (This was a priority for the public agencies and the nonprofit organization behind the rating system.) With only about 2 percent of commercial floor space newly constructed each year, existing buildings represent the primary opportunity for improving health impacts in the workplace. Fitwel has no mandatory credits that could preclude existing buildings from seeking certification; a team may choose the suite of strategies most relevant to a project’s circumstances.

Boston-based CBT Architects’ renovation of Shawmut Design + Construction’s 75,000-square-foot headquarters in a historic brick and heavy-timber building, completed in 2016, provides an example. Although CBT and the client had prioritized health from the outset,

courage healthy eating and beverage consumption and up to 16.33 for a prominent, well-designed stair. As the research base grows, the standard will evolve in response to the CDC’s continuing input.

Those familiar with the two standards generally agree that achieving WELL certification is more difficult than Fitwel, especially if not considered from a project’s early stages. But they say WELL is not a huge stretch for organizations with sustainability ingrained in their



STAIR MASTER Prominent and inviting circulation is among many features that should help Shawmut Design + Construction's Boston headquarters, designed by CBT, achieve Fitwel certification.

prerequisites that are hard or impossible to satisfy after the fact (such as the preconditions in WELL for integrative design and construction-pollution management) would most probably have precluded certification. Under Fitwel, however, the project's high Walk Score (a rating based on amenities within walking distance), new pedestrian-oriented entrance, prominent stairs, generous daylighting and views, attention to indoor air quality, and variety of shared spaces—among other credits—easily lift the project over Fitwel's 90-point minimum for single-star certification.

The Fitwel tool also identified some man-

ageable improvements, such as signage at decision points (to use stairs or to wash hands, for example) to bump the project up to the 105 points required for two stars. Going further, some operations decisions could bring the 125 points needed for three-star certification into range. Shawmut plans to pursue certification in the next fiscal year.

With existing buildings eligible for Fitwel, designing for health can also include a client's whole portfolio. The tool's benchmarking function allows owners to compare holdings and to evaluate possibilities for leasing or renovation.

Alexandria Real Estate Equities, a developer focused on science and technology campuses, has so far achieved five Fitwel three-star ratings. "In a demanding marketplace, these certifications validate what we're already

doing to create healthy conditions for our tenants," says Vincent Ciruzzi, Alexandria's chief development officer. Although Fitwel can also serve as a road map for construction, Alexandria intends to pursue LEED and WELL for its new buildings.

In keeping with the intention to make it accessible, Fitwel is the less expensive option. CfAD charges an annual \$500 registration fee and \$6,000 for certification, including a double-blind independent third-party assessment and any subsequent appeals. In contrast, IWBI registration fees vary with project type and size, and range from \$1,500 to \$10,000. For WELL certification, which is managed by Green Business Certification Inc. (the same entity that manages LEED certifications), costs start at \$4,000. The process involves an on-site audit and measurements of water, air, and light

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DELICATE BALANCE Davis Partnership is pursuing both LEED and WELL for the Colorado Health Foundation, in Denver (above and top). The firm had to satisfy daylighting and glare-control requirements while limiting glazing.

quality, and acoustics, which entail an additional fee, as does recertification (required every three years). But as part of IWBI's status as a public benefit corporation—a for-profit entity whose mission includes a positive impact on society—it will donate 51 percent of net profits from these fees toward philanthropy, once IWBI is profitable, which Fedrizzi estimates is about two and a half or three years away.

One of the reasons for Fitwel's comparative affordability is the absence of on-site testing. But that doesn't mean certified projects aren't achieving results, says Frank. "The research is the verification," she says. "If you implement these strategies, then, on a statistical basis, you're likely to achieve these health outcomes."

Advocates of the wellness standards argue that the added expense, even of the more costly of the two systems, is worth it. The construction manager Structure Tone moved into its Gensler-designed New York offices near Penn Station last summer. Robert Leon, vice president of global services, estimates that all hard and soft costs connected with the project's registration and certification added about \$1 per square foot to the 82,000-square-foot interior renovation project. Going forward, he expects maintaining its WELL Silver status, including recertification and operational and organizational costs such as those associated with healthy food in the cafeteria or bike-share memberships, to amount to about \$100 per employee each year.

Leon contends that the certification will easily pay for itself with increased productivity and better retention rates. Several sources point to an often-cited report by the consulting firm the Muldavin Company. It pegs the average corporate investment in wellness programs at \$700 per employee per year, but puts employee participation at below 50 percent. "Much of this money is wasted," says James Stawniczy, senior consultant for well-

ness at HOK. But the strategies in WELL provide a passive benefit to all occupants, according to the study, which estimates that superior indoor environmental quality can improve work performance by as much as 10 percent.

Beyond the corporate sector, the investment may be harder to justify. But both IWBI and CfAD are working on extending the reach of their respective standards. A Fitwel scorecard specifically tailored to multifamily housing is slated for a soft launch by the end of the year. IWBI, meanwhile, plans to create market-sector advisory committees, made up of experts and users who will help make sure the certification system is flexible enough to be applied to a variety of building types beyond offices and housing. For firms seeking to help their clients choose between these two certification systems, sources agree that it really comes down to a matter of fit. There's a lot of overlap in the priorities of WELL and Fitwel and in the research they rely on, observes Paula McEvoy, a codirector of Perkins+Will's Sustainable Design Initiative. "What's important," she says, "is making the changes and implementing the strategies." ■

Katharine Logan is a designer and writer focusing on design, sustainability, and well-being.

Continuing Education



To earn one AIA learning unit (LU), including one hour of health, safety, and welfare (HSW) credit, read "The Next Wave," review the supplemental material found at

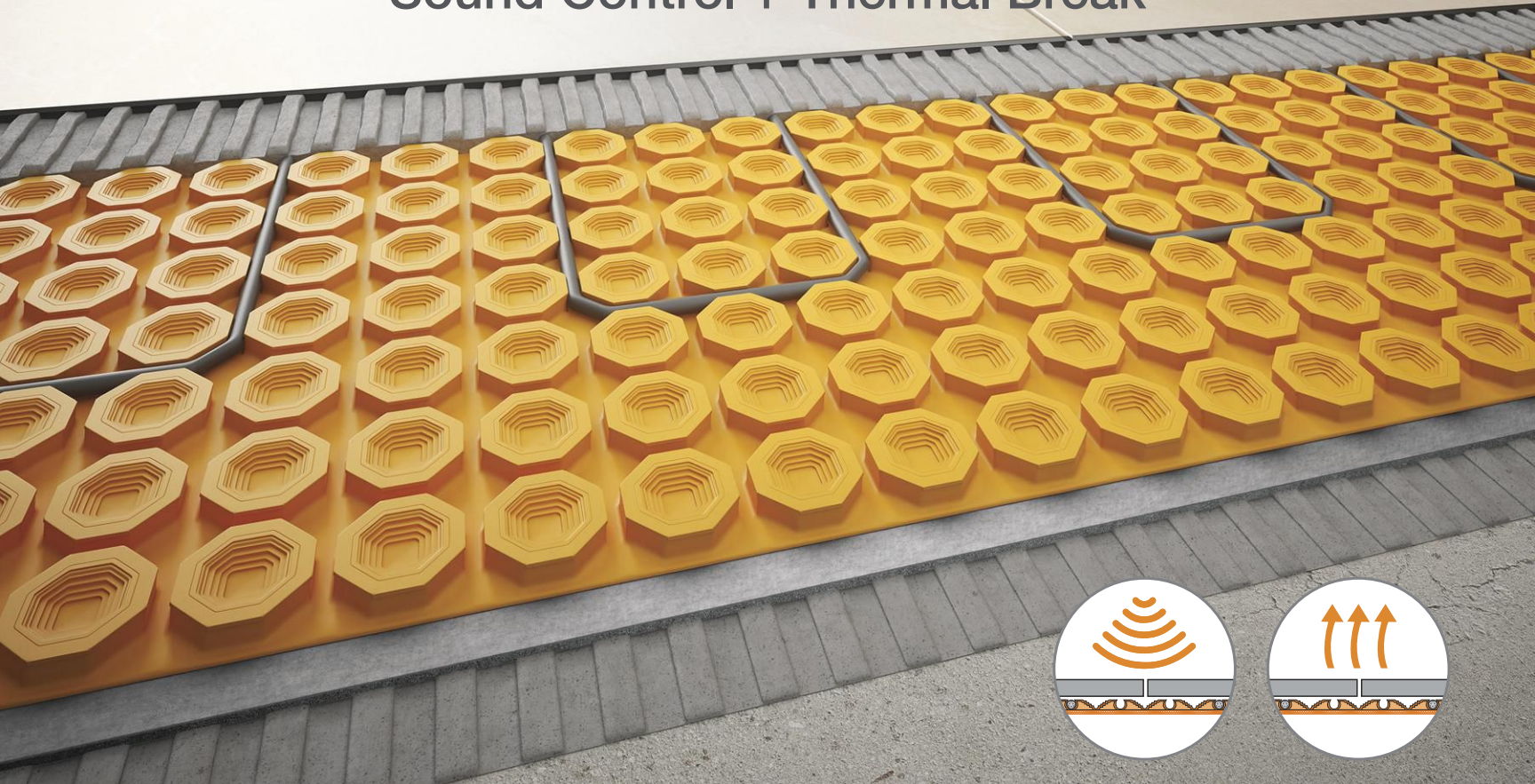
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Learning Objectives

- 1 Discuss the goals of the WELL Building Standard and of Fitwel.
- 2 Outline the structure of both certification systems.
- 3 Explain how WELL and Fitwel help define the relationship between human health and the built environment.
- 4 Discuss the challenges to certification under both systems.

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RECORD KITCHEN & BATH

The flipped floor plans, recast rooms, and humble materials in these projects show a growing flexibility in residential architecture.

- 142 Wine Country Farmhouse
- 144 Spanish Hotel
- 146 Hamptons Residence
- 148 London Apartment

PHOTOGRAPHY: © MATTHEW MILLMAN

WINE COUNTRY FARMHOUSE



Wine Country Farmhouse

Calistoga, California

Architect **Bohlin Cywinski Jackson**

A HOUSE in the wine country can hardly be called a welcoming retreat when its master bedroom and bath occupy dark dormer spaces. That was the case inside this 1990s-era bungalow when a San Francisco couple purchased it, along with a working vineyard, in Calistoga, California, to launch their boutique wine label and enjoy weekend escapes from the city. But to make that happen, they needed Bohlin Cywinski Jackson (BCJ) to renovate the property's 4,430-square-foot house.

"Our firm has done quite a few renovations, each with its own challenges, but nothing like this," says Aaron Gomez, the project manager from BCJ.

A chief concern was the second floor's awkward and compartmentalized master suite, which offered limited views and not enough light. The bedroom was situated under one of the eaves, where the ceiling dipped to an uncomfortable height. The bathroom, meanwhile, occupied a dormer, which had the best view. Several partition walls cut up the space into even smaller nooks.

To reprogram the plan, the project team gutted the upper story, removing all non-load-bearing walls to create a combined bedroom-bathroom in one large space. The new plan repositioned the sleeping area closer to the center of the floor, where the ceiling is higher. Then, behind a custom headboard, architects built a new 7-foot-high partition wall to separate the bed from the bathing area. Because the wall stops 5 feet below the ceiling's center, the divider allows light to spill over its top edge into the bedroom, while on the other side it supports a marble-topped double-sink vanity and wall-mounted mirror.

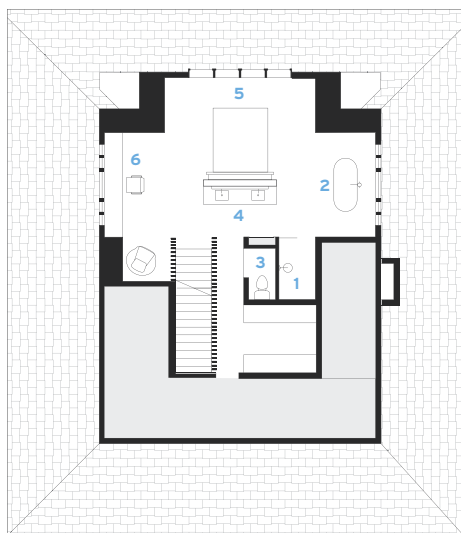
Measuring 9 inches thick, the freestanding wall has a cavity that conceals relocated plumbing, HVAC, and electrical wiring. The headboard side is clad in white-painted gypsum, while the bath side is covered in luminous etched-glass tile. Both materials help to reflect light in the space. For a unified aesthetic, the custom bed and vanity are both wrapped in a vertical-grain hemlock veneer, which was also used for the wall's trim.

Whitewashed reclaimed fir covers the floor, referencing the surrounding landscape. Basalt tile is used in two wet zones beside and facing the vanity. (Existing floor joists were able to handle the new loads without reinforcements.)

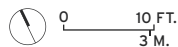


BRIGHTER OUTLOOK

A dividing wall (opposite) helps define bed and bath zones in the open master suite. The stair (right) leading to the rest of the house is one of two areas where the architects added skylights to improve daylighting.



SECOND-FLOOR PLAN



- | | |
|----------|-----------|
| 1 SHOWER | 4 VANITY |
| 2 TUB | 5 BEDROOM |
| 3 TOILET | 6 DESK |

With the combination bedroom-bathroom floor plan established, the architects placed only seating-height functions in the dormers, including a bathing area with a freestanding tub, a reading nook, and a home office with a built-in writing desk. Where the roof peaks above a shower and the stairwell leading down to the rest of the house, the architects added new skylights to bring in natural light. The team also replaced the staircase's solid walls with a wood-slat infill that lets in more light and continues the master suite's material palette.

"The palette was chosen to provide a bright freshness that was lacking in the space previously," says BCJ principal Greg Mottola. Meanwhile, a newly enlarged picture window facing the bed affords the owners the prime views that were previously blocked by the old bathroom enclosure. Now the clients can truly survey the fruits of their labor. *Sheila Kim*

credits

ARCHITECT: Bohlin Cywinski Jackson

ENGINEER: Daedalus Structural Engineering

GENERAL CONTRACTOR: Fairweather & Associates

CLIENTS: Tom and Laurie Poggi

SIZE: 4,430 square feet

COST: withheld

COMPLETION DATE: December 2015

SOURCES

PAINT: Benjamin Moore

COUNTERTOP: ASN Natural Stone

SINKS: Duravit

FAUCETS: Kallista

TUB: Agape

PENDANT: Moooi

WINDOWS: Fleetwood Windows & Doors

WOOD FLOORING: First, Last & Always



Puro Hotel

Palma de Mallorca, Spain

Architect **OHLAB**

PURO HOTEL first opened its doors in 2004, so the guest rooms were ready for a redo 12 years later. (That's a lifetime for hotels, which tend to undergo renovations every seven years or so.) "It looked really '90s—dark floors and glass handrails. It could've been anywhere in the world," says Jaime Oliver, principal of OHLAB, the local firm commissioned to begin a phased renovation of the hotel, starting with 22 guest rooms.

The 51-key property is located in Palma, the cosmopolitan capital of Mallorca, Spain, and it is situated on the grounds of an 18th-century palace in the city's historic La Lonja district. OHLAB's brief was to transform the hotel's rooms into earthy sanctuaries filled with spalike features and a strong sense of the island itself, which has an exotic history influenced by Roman, Moorish, and Spanish conquests.

Taking advantage of the building's irregular configuration, the architects gave each guest suite a unique layout. To achieve the spalike atmosphere the client wanted, they gave the en suite baths unusual pride of place in the rooms. While bathroom floor plans are not identical, many mandate tubs visible from or even inside the living areas. In one room, the architects plumbed one of their freestanding, sculptural bathtubs next to a mezzanine staircase well inside the living space.

According to OHLAB cofounder Paloma Hernaiz, "Instead of designing one model room, a series of strategies keeps the atmosphere coherent." Chief among those strategies was maintaining the same material palette across all the rooms.

Room No. 10, for example, incorporates this palette in its own unique layout. The 425-square-foot suite, with a living room and bath on the entry level, has a sleeping loft on a mezzanine accessible by a stair with a natural hemp balustrade. Except for a pair of doors carved with mandalas, which slide to separate the bathing and living areas (the only original elements that the architects kept intact), the bath is designed as an extension of the main room—practically on display.

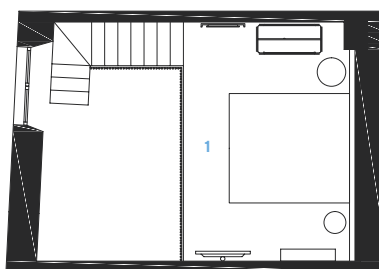
The tub sits directly under a ceiling-mounted showerhead. There is no enclosure for privacy, only a clear floor-to-ceiling glass partition separating the fixtures from a trough-style sink. The glass prevents unwanted splashing, but when the carved doors are open, bathing becomes an act of theater, with the living area as the front row.

In line with the project's brief, the bath's material palette connects it to the local culture and imparts a calming aesthetic. The texture and profile of a custom concrete sink on one wall are inspired by old stone drinking troughs found in Mallorca's countryside; a wood plank shelf beneath it provides simple open storage for towels. The architects added a contemporary touch by eschewing traditional light fixtures for LEDs, hidden from view in channels along the floor's edges and behind the mirror, to give the space a warm, dramatic glow.

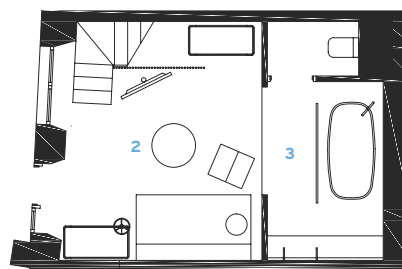
Phase 2 of the renovation—OHLAB's second act—will begin in late 2018 and include the redesign of the ground floor, common areas, and the hotel's other guest rooms. Stay tuned. *Ana Martins*



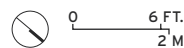
A STONE'S THROW In one of Puro Hotel's renovated suites (opposite), the bathing area is visible from the couch. The bath's calming aesthetic (above) lies partly in its concrete walls, sink, and floor. The architects balanced the rooms' earthiness with modern fittings and LED lighting.



MEZZANINE LEVEL



MAIN LEVEL



- 1 SLEEPING LOFT
- 2 LIVING AREA
- 3 BATHROOM

credits

ARCHITECT: OHLAB

PROJECT TEAM: Rebecca Lavín, José Allona, Amaia Barazar, Rosa Fuentes, Silvia Morais, Manuela Sánchez, Jorge Ramón

CLIENT: Mats Wahlström

SIZE: 12,920 square feet

COMPLETION DATE: March 2016

SOURCES

TUB: Inbani

BATH FITTINGS: Ritmonio

ROOM FURNISHINGS: OHLAB



Amagansett Residence

East Hampton, New York
Architect **Bates Masi + Architects**

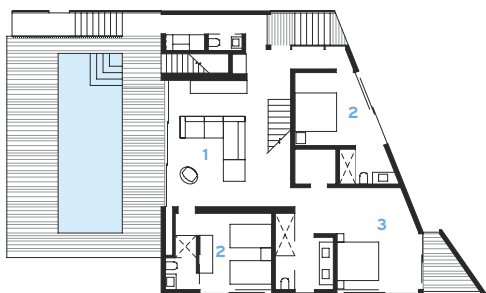
TO LONG ISLAND LOCALS, the Amagansett Life-Saving Station in East Hampton is a beloved landmark. From 1902 to 1946, members of the U.S. Coast Guard patrolled the Atlantic coastline from the station, which sits 30 feet above sea level, searching for shipwreck victims. Earlier this year, the cedar-shingled structure was opened to the public as a museum. (Residents already had been gathering there annually to reenact a foiled 1942 beach landing of Nazi spies.)

Now Bates Masi + Architects has built a tribute across the street: a 2,300-square-foot vacation home for a couple from the West Coast. Like the landmark, the new residence is clad in cedar shingles and features expansive ocean views. (Before starting construction, the Bates Masi team erected a 20-foot scaffold on the half-acre site to ensure that vistas would be equally sweeping.)

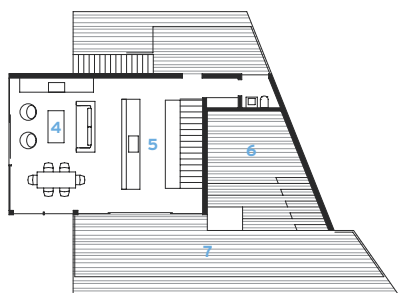
But resemblances to the landmark end there, to give way to eloquent abstractions. “This project is more reinterpretation than mimicry, so the similarities are not immediately apparent but become clear with exploration,” says studio principal Paul Masi.

Foremost among those comparisons is the plan. Inspired by the oceanfront vigils of yore, architects placed common areas on the second floor so the homeowners could spend much of their time as the watchmen did—immersed in the seascape. “There is a similar sequencing of levels up to the lookout,” Masi says. And whereas the Life-Saving Station sports a cupola, which extended the watchmen’s sightlines, Bates Masi cantilevered the home’s 700-square-foot upper story beyond the wider volume beneath it, and finished its west and south elevations entirely in glass.

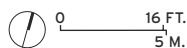
The kitchen plays a critical role in this view-finding scheme, as it draws the homeowners into the upper volume. Measuring 30 by 21 feet, it is accessible by a stair that abuts it. A 13-foot island provides informal seating and a low partition between the kitchen and adjacent living and dining areas. The fact that the room’s finishes echo the home’s



GROUND-LEVEL PLAN



UPPER-LEVEL PLAN



- | | |
|-----------------|-------------------|
| 1 FAMILY ROOM | 5 KITCHEN |
| 2 GUEST SUITE | 6 STADIUM SEATING |
| 3 MASTER SUITE | 7 ROOF DECK |
| 4 LIVING/DINING | |

architecture makes it seem even more spacious. Mitered cabinet doors are fabricated from the same European oak as the plank floors and ceiling. Bronze plate on the backsplash mimics the facade's bronze accents.

The flipped floor plan—requiring occupants to head upstairs to dine and downstairs to sleep—is a compromise for the homeowners, Masi says: “You’re walking up and down stairs quite a bit.” To mitigate that inconvenience, the architects transformed the first-floor rooftop into a 1,000-square-foot garden with expansive decking, stadium seating, and an exterior stair to the kitchen. “Most people prefer a connection between living and outdoor spaces,” he says. Connection reestablished. *David Sokol*

credits

ARCHITECTS: Paul Masi;
Danielle Caylor
ENGINEER: Steven Maresca
GENERAL CONTRACTOR:
K. Romeo
SIZE: 2,300 square feet
COST: withheld
COMPLETION DATE: October 2016

SOURCES

CABINETS: Peragine Millwork
FAUCET: Blanco
PAINTS AND STAINS:
Benjamin Moore
COUNTERTOP: Corian
WOOD CLADDING: Madera-Trade
BAR STOOLS: Room
RECESSED LIGHTS: Hevi Light
DIMMING: Lutron



ISLAND LIFE The house's cantilevered second floor (top) provides a lookout post in a nod to the historic Life-Saving Station nearby, which inspired the home's cladding and views. In the combination kitchen/living/dining area (above), a 13-foot island defines zones without obstructing the vistas.



SHOWCASE KITCHEN

Pocket doors slide back to reveal the newly plumbed cooking space in a former 19th-century stable (this page). The apartment's street-level entrance (opposite, left). The living/dining area (opposite, right).



Knightsbridge Residence London

Architect **Jonathan Tuckey Design**

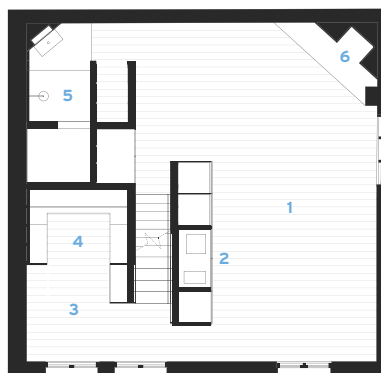
SHOPKEEPER MAUREEN DOHERTY's London apartment was designed to be versatile. A bathing room with a Japanese soaking tub is sometimes used for meetings, her front door holds a merchandise display case, and closing a row of built-in cabinets in the center of the main room transforms it from an open kitchen to a serenely neutral space.

"The flat might be used for photo shoots or to warehouse her clothing stock. Her brief was to have no names for rooms," says Jonathan Tuckey, principal of London firm Jonathan Tuckey Design (JTD), which executed the idea. "Her boundaries between work and home are really blurred."

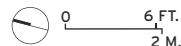
The 1,100-square-foot apartment occupies spaces above and adjacent to Doherty's boutique, Egg, in a house that was once a 19th-century dairy stable. Two years ago, Doherty commissioned JTD to renovate the building next door and convert its attic into a pied-à-terre. The new apartment would be a place where she could recharge her creativity and occasionally let the back-of-house functions for her business spill over.

Doherty and the design team agreed it was important to retain remnants of the building's past life—exposed brick walls, a gabled roof, and a large triangular truss, which maintains its barnlike appearance. "We always strip everything back to how it was made. That helps us to uncover problems, but it's also about aesthetics," Tuckey says.

In addition to shooing away birds nesting in the rafters, digging to connect the old stables to the city's service lines for gas and plumbing, reglazing skylights, and waterproofing and insulating the roof and walls, the architects highlighted the truss by painting it white to match the new-



SECOND-FLOOR PLAN



- 1 LIVING/DINING
- 2 KITCHEN
- 3 STUDY
- 4 CLOSET
- 5 SHOWER
- 6 HEARTH



LIGHT BOX Architects updated three skylights with new glazing and baffles that direct daylight into the attic's rooms, including a shower (left) behind the partition.

ly sheet-rocked ceiling and chimneylike baffles added around skylights.

Then came the work of making the space function in the open-ended ways that Doherty wanted. As kitchens are centers of home life, Tuckey first built in the flexibility there by installing a compact culinary center (an oven, counter, sink, refrigerator and pantry) within one of three boxy whitewashed volumes that sit like art installations in the space. The one-wall kitchen also serves as a room divider that separates a living/dining area from a study and stairs down to the shop. When not in use, the kitchen disappears behind pocket doors.

Another boxy partition houses a toilet with an adjacent shower and lavatory, while a traylike box that holds a sleeping loft is perched above in the rafters like a cozy nest.

JTD relied on humble materials to keep the overall costs down. The cabinets, a closet, and the sleeping loft's walls are made from particleboard; door handles are pine. Kitchen and bath fittings are fashioned from unadorned copper pipes.

Elsewhere, luxury lies in the finishes. Paint covering the attic's ceiling, walls, and floor is of high quality. The spare-looking bathing room is clad floor-to-ceiling in hand-glazed ceramic Portuguese tiles. Its Japanese-style soaking tub was custom-built in Sweden. The craftsmanship in these details is what Doherty wished to celebrate, just as she does with the artisanal dresses, perfumes, and housewares she carries in her shop. In that way, "it's her very own chapel," Tuckey says. *Kelly L. Beamon*

credits

ARCHITECT: Jonathan Tuckey Design

PROJECT ARCHITECT: Ryuta Hirayama

ENGINEERS: Webb Yates

GENERAL CONTRACTOR: Broseley

CLIENT: Maureen Doherty

SIZE: 1,100 square feet

COST: \$276,554

COMPLETION DATE: December 2015

SOURCES

CUSTOM CABINETRY: Broseley

PAINT: Farrow & Ball (walls, floor, ceiling)

SKYLIGHTS: Velux

LIGHTING: Crompton Architectural Lamps (fixture in kitchen)

SINKS: Aston Matthews

OVEN: Ikea

SHOWERHEAD: Livinghouse

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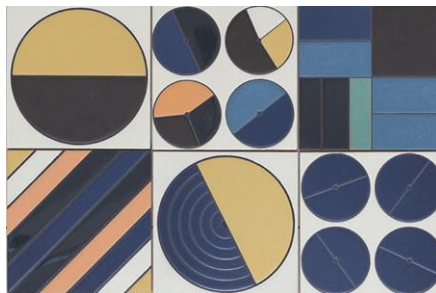
By Kelly L. Beamon



Real Rain

The largest of Kohler's rain panels raises the bar on home-spa experiences to a real rain shower. The aptly named Real Rain panel measures 19" x 19" and emulates the varying sizes, patterns, and sounds of actual raindrops, using 775 nozzles. The fixture's 2-gallons-per-minute flow complies with CALGreen requirements. Seven finishes are available.

us.kohler.com



Agrarian Collection

Measuring 8" square, these hand-painted tiles are ideal for creating feature walls. Part of Fireclay Tile's Agrarian Collection, this series of patterns draws on aerial views of the crop formations near the manufacturer's Aromas, California, headquarters.

fireclaytile.com



Retro Electric Stove

The safety of an induction cooktop that stays cool to the touch is combined with the convenience of a 30" electric oven suitable for urban living. The versatile range also comes with Big Chill's retro details in more than 200 custom colors.

bigchill.com



Column Refrigerator

At 30" wide x 24" deep, this residential fridge is designed to stand alone or with the company's 30" Freezer and Wine Columns. The body is stainless steel for easy cleaning. And, besides a glass door, options include antique white and matte or glossy black finishes for the body, and copper, brass, or chrome for hardware.

true-residential.com



Essence Semi-Pro Faucet

Grohe's new Essence Semi-Pro faucet is engineered for precise water control with a ceramic cartridge, a flexible spray arm for 360° sink coverage, and a temperature limiter to prevent scalding. The plus for designers is that it also features a hose that comes in a rainbow of nine colors for an additional fee.

grohe.us



Eldon Bath

This bath's practical design is the result of a collaboration between architects Conran + Partners and Victoria and Albert Baths. V + A's composite of volcanic limestone and resin creates a solid look with a hollow mold that is lighter than cast iron and conceals plumbing. The Eldon (68 $\frac{7}{8}$ " long x 33 $\frac{1}{2}$ " wide x 23 $\frac{5}{8}$ " high) comes in seven finishes.

vandabaths.com



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Photo courtesy of Inpro

p156

State-of-the-Art Design in Higher Education

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BE IN PM

CREDIT: 1 AIA LU/HSW;
0.1 IDCEC CEU



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p164

Scuff-Resistant Paint

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Photo courtesy of GAF

p168

Cool Roofing for Cool Climates

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Meeting New Water Quality Mandates in Health-Care Settings

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p174

The Benefits of Art-Grade Bronze for Residential, Commercial, and Hospitality Applications

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Spray-Applied Glass Fiber Insulation

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CATEGORIES

BE BUILDING ENVELOPE DESIGN

EM ELECTRICAL AND MECHANICAL

IN INTERIORS

LS LIFE SAFETY AND CODES

PM PRODUCTS AND MATERIALS

RR RENOVATION AND RESTORATION

SU SUSTAINABILITY

*Courses may qualify for learning hours through most Canadian provincial architectural associations.



Colleges and universities are places of innovation and creativity but need to operate pragmatically and cost effectively over time too. Architects and other design professionals are tasked with finding the balance through design, as shown here at the Ohio State University, Department of Theater, Drake Performance Center.

Photo courtesy of Inpro

State-of-the-Art Design in Higher Education

Taking on the challenges of modern university facilities

Sponsored by Guardian Glass, Inpro, and NanaWall Systems | *By Peter J. Arsenault, FAIA, NCARB, LEED AP*

Higher-education facilities provide some unique challenges for designers due to the multiplicity of design criteria and the variability of the ways different buildings are used on a college campus. Academic buildings, for example, have different needs from residential ones, which are still different from laboratory, administrative, and athletic ones. Of course, all higher-education buildings have to provide appropriate security, be durable over the long term, remain functional 24/7 in many cases, and offer access to modern and changing technologies. From a design standpoint, higher-education facilities have allowed architects to create some excellent architecture even while sometimes being required to fit in with a predetermined campus aesthetic.

How can architects stay ahead of the curve on all of this diversity at universities and colleges? One place to start is by looking at some of the particular aspects of exterior and interior design that can be used in many of these different settings to meet the various design criteria. In this course, we will look at some of those aspects for some of the most current thoughts and design techniques for successful higher-education designs.

EXTERIOR DESIGN INCORPORATING GLASS

While creativity is clearly and appropriately embraced in higher-education design, fiscal responsibility and functionality are also very strongly required. This is especially true since

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1 AIA LU/HSW



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Learning Objectives

After reading this article, you should be able to:

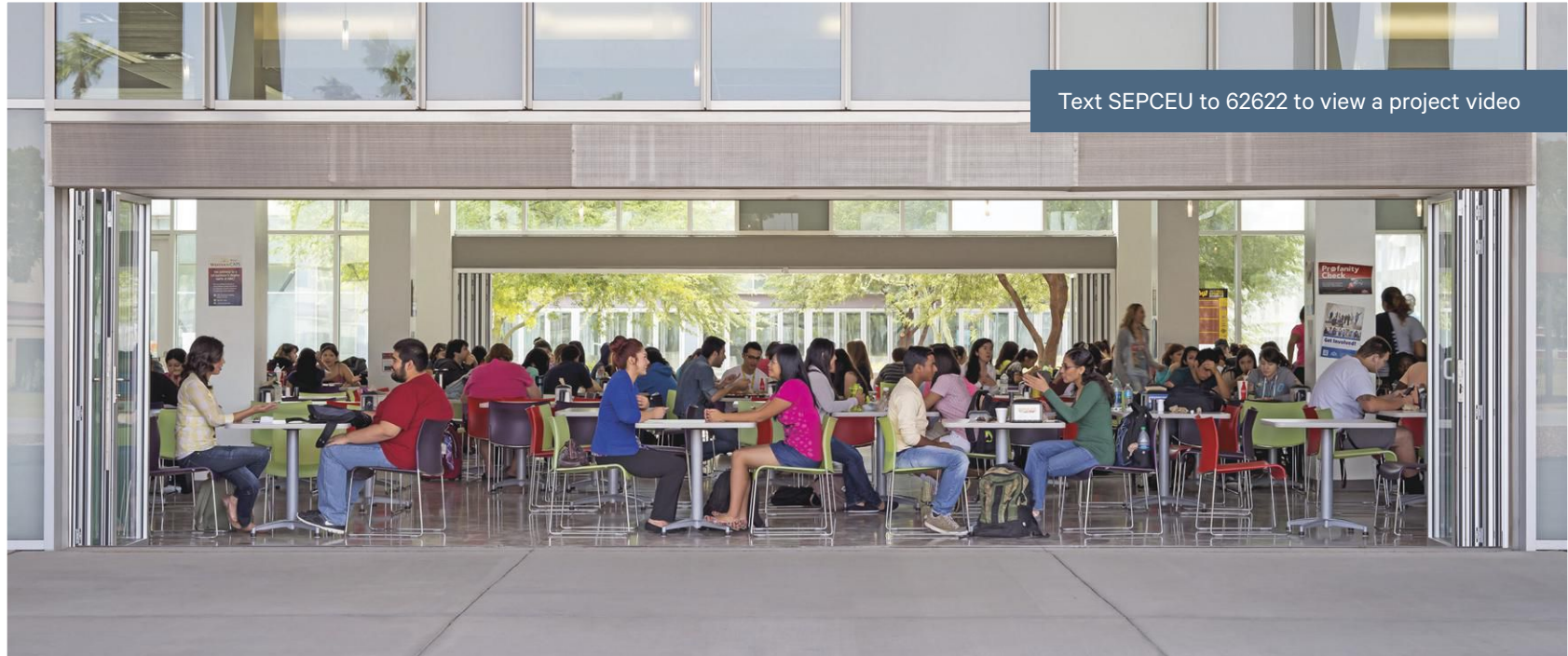
1. Identify and recognize the design and performance aspects of glass and glazing as part of an energy-efficient, comfortable, and code-compliant building exterior.
2. Assess the health and safety aspects of wall surfaces as they relate to durability and sustainability.
3. Explain the significance of providing flexible spaces in university and college settings for general well-being, functionality, and energy performance.
4. Determine ways to incorporate the health, safety, and welfare principles discussed as shown in case studies.

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.

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Glass and glazing are integral parts of the design and performance of all types of higher-education buildings, such as the Michigan State University Bioengineering Facility (left) in East Lansing, Michigan, designed by Integrated Design Solutions and the Pattison Centre of Excellence at Okanagan College (right) in Kelowna, British Columbia, designed by CEI Architecture.

the college or university will typically not only oversee the design and construction of their buildings but will also be responsible for the long-term operation and maintenance of those buildings. Typically, the capital improvements budget is different and separate from the operations and maintenance budgets, but the truly enlightened campus staff will see the obvious connection between the two. Regardless, it is the role of the architect and design team to find the proper balance between creative design, functionality, and overall budget-conscious high performance. This is true whether the focus is new construction or renovation and applies regardless of building use.

Glass in Design

One of the most visible places to begin looking at this balance is the exterior facade of a higher-education building. Aesthetics will quickly be influenced by the building function, the surrounding buildings, material preferences, and the creative talent of the design team. Performance issues will be addressed first in opaque wall areas through the makeup and integration of the needed thermal, water, air, and vapor barriers. Then, the use of glass and glazing often becomes the focus of considerable design effort both in terms of appearance and energy efficiency.

Most architects are by now familiar with the fact that multiple independent studies have demonstrated the benefits of natural daylighting in learning situations. In particular, LEED rating systems for schools and other similar programs have been structured around evidence that students perform better when they have access to views and daylighting. The same is true in higher-education settings, so architects are looking for the right arrangements of glass that provide the best daylighting while still working within the overall design intent and performance requirements. This usually requires different iterations or different design concepts to select, model, assess, analyze, and then finalize a glazing layout that balances all design requirements while still staying on budget.

Glass Performance

In order to determine the overall performance of different design concepts for a facade, architects need to know the performance data for different types and specifications of glass. In the past three or four decades, the variety of glass options for appearance, energy performance, safety, and security have grown notably, so there is a full palette of choices for designers to consider. Further, the use of double- and triple-paned insulating glass units (IGUs) has become common with the option of treating each surface of each pane differently or even making them out of different types of glass. For example, an IGU makeup may be selected for energy efficiency, but the outer most pane may be laminated glass that has superior sound-deadening and shatter-resistant properties. The inner pane(s) may then be clear or color tinted with coatings to further enhance energy performance. It is quite logical then, given the range of variations and possibilities, to request assistance from glass manufacturers in summarizing, analyzing, and comparing different glass makeups against the energy and performance needs of a particular project.

IGUs consist of two or three layers of glass separated by spacers in between them around the perimeter. The resulting air gap(s) between the panes of glass provides the insulating layer that slows down heat loss, keeps the inside glass surface warmer, and reduces the opportunity for condensation to form on the glass surfaces. From there, specific coatings and tints can be incorporated to create high-performance double- or triple-paned units. Some can be selected to control visible light and glare by reducing the amount of light that passes through the glass. Others can reflect the amount of unwanted solar heat gain (think warm months or warmer climates) or reduce heat loss (colder time of year or colder climates) as may be appropriate for the building.

While high-performance double glazing is common, the use of triple-paned IGUs is becoming more common for college and university buildings in cold climates. This is because, after

all of the assessment and analysis is done, it makes sense to add the extra pane of glass when looking at the big picture. The lifetime of campus buildings could easily span 50 years and, in most cases, much longer. A simple life-cycle assessment of high-performance triple glazing over the long haul can demonstrate reduced energy costs, greater comfort for those near the glazing, and a favorable payback. Further, universities commonly want to be seen on the cutting edge in the use of energy conservation measures, leading by example for the students while being as economical as possible. In addition to the multiple energy performance factors that triple glazing offers today's buildings, another physical layer of glass provides superior noise reduction compared to a standard double-glazed unit.

When architects are considering the use of either double- or triple-glazed high-performance insulated glass units, several factors need to be considered:

- **Overall U-factor:** Calculating and testing the U-factor of an IGU is based on many details. First is the size of the air space, generally with larger being better up to a point. Second is the type of spacer used since it will affect the U-factor around the perimeter of an IGU. A "warm edge spacer" is typically made from a combination of materials (e.g., composite and thermally broken stainless steel) with low heat conductivity instead of a lower-performing aluminum spacer. The assembly of the IGU around its perimeter and the materials used to seal it together can similarly make a difference. This combination of all these fundamental components of the IGU plays a huge role in determining the "overall U-factor," which is much more important than just the simple "center of the glass" U-factor that doesn't tell the whole story.



The Tufts University Science & Engineering Complex designed by the architectural firm Payette uses clear, triple-glazed, insulating glass with neutral coatings to achieve the balance between aesthetics and performance needed for its New England climate.

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- **Perimeter sealant:** The sealant around the perimeter of the IGU is the key to preserve the high performance of IGUs over time. If the seal fails, then the performance decreases and moisture may collect between the panes. In time, that moisture can cause permanent discoloration of the glass, and it would then need to be replaced. The sealant strength also contributes to the overall strength of the IGU; therefore, it is best to always coordinate with the window manufacturer to ensure the compatibility of the sealant with the IGU and the glazing framing.
- **Performance enhancements:** Once the basics of the IGU are determined, then the choices rely on several things that can enhance performance further. First is the gas that fills the spaces between the panes of glass. Common choices are ordinary air or inert gases, such as argon or krypton. Then manufacturers can apply high-performance coatings to different glass surfaces to control solar heat gain and enhance insulating value. Low emissivity (low-e) coatings are one example that are very effective at improving U-factors, but they also influence the color of the glass, so understanding the range of options here is worthwhile. In much of North America, neutral-colored coated glass is a popular product for education projects. With a high visible light transmission, it delivers abundant natural light for daylighting and views. When used in a triple-glazed IGU with argon, for example, the U-factor is cut almost in half compared to double-pane uncoated glass, making it an excellent high-performance choice for colleges and universities in northern regions. Such high-performance glass can help higher-education facilities earn LEED and other green building standard designations.
- **Coordination with frames:** The size and strength of the frame material must be sufficient to accommodate the thickness of, and withstand the weight of, double or triple glazing units. A thermally broken aluminum window frame is often used due to its durability, noncorrosiveness, and better thermal performance. However, the location of the thermal break and the profile of how the glass, thermal break, and aluminum frame all work together needs to be looked at and assessed.

All of the above details can be specified by architects but need to be coordinated with those who actually produce the glass products. To get a manufacturer's perspective on the state of the glass industry, here's what Brian Schulz, product manager at Guardian Glass North America, has to say: "Glass is a critical and complicated material. The building team has to manage daylight, aesthetics, glare, and energy savings while considering climate, elevation, and other performance and environmental factors." Regarding the increasing

Photos courtesy of NanaWall Systems



Opening glass walls allow for a seamless transition in the building facade between indoor and outdoor spaces when open and a weathertight seal when closed, as shown here at Arizona Western College in Yuma, Arizona.

use of triple glazing, he points out, "Triple-glazed glass is one of many product combinations available to architects creating the most innovative and energy-efficient higher-education buildings." And when asked about where the industry is going, he says, "The future of glass is all about adaptability, flexibility, and its long-term capability to remain beautiful but tunable to the environment. We want to identify opportunities and develop products and technologies that create value for designers, contractors, and building owners."

DESIGNING FOR FLEXIBLE FACADES AND SPACES

One of the most common requests of the staff and faculty who actually use higher-education spaces is the desire for flexible spaces. What they are usually asking for is the ability to accommodate different size groups in a space or to connect adjacent spaces together. This connection can be made between two interior spaces or between indoor and outdoor spaces. While this all seems reasonable and logical, achieving it often means that the exterior facade has to take on a new dimension. Specifically, it needs to be operable or transformable, essentially allowing the free passage of people, air, light, and



Connecting interior spaces can be controlled with opening glass walls to allow full access during high-traffic times or limited access with a traditional swing door panel in lower-traffic times.

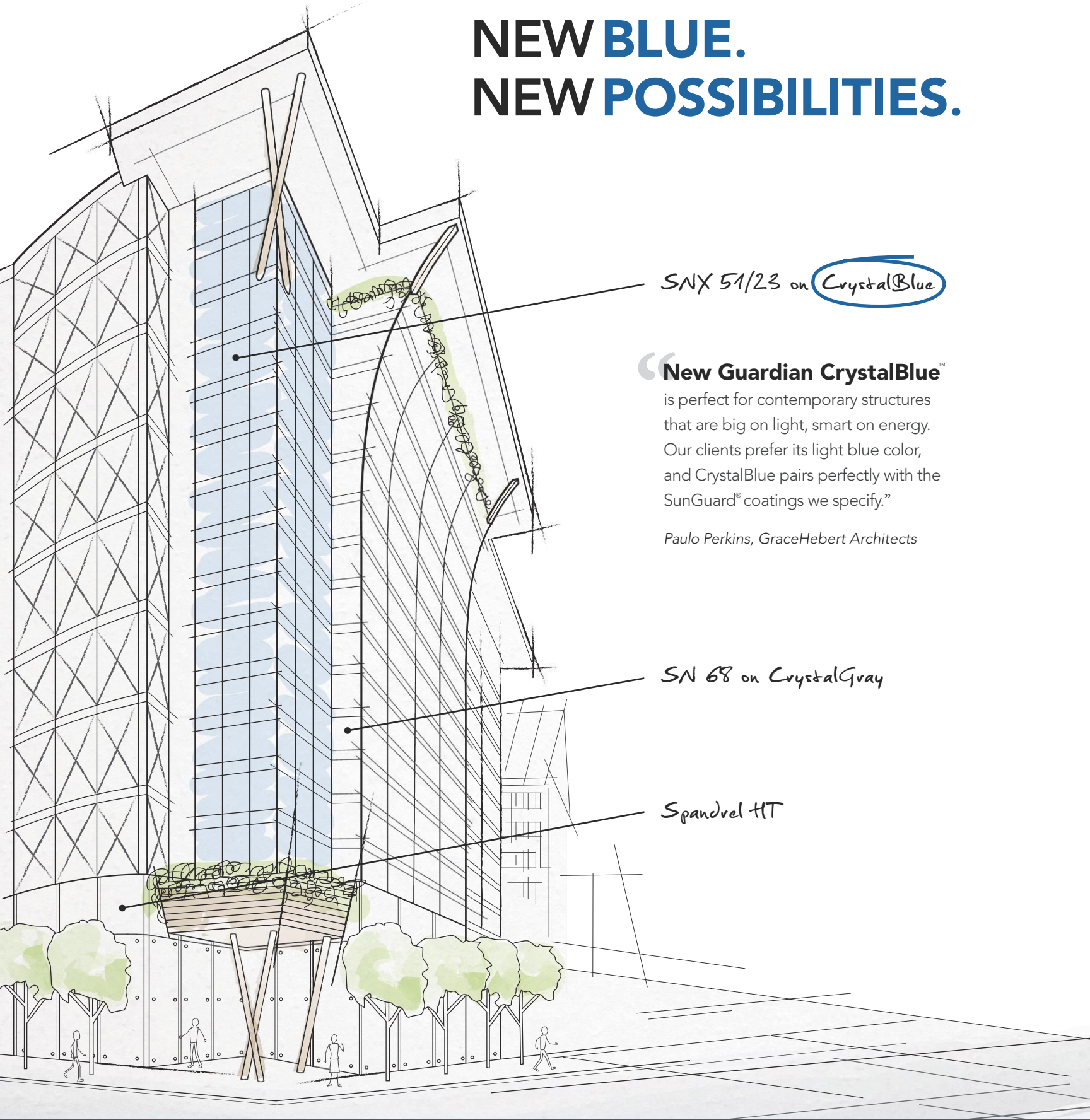
activity between indoors and outdoors when required, but be capable of closing up to be weather-tight when desired.

A common solution to achieve this connectivity between spaces, particularly indoor/ outdoor spaces, is the use of opening glass walls. These are comprised of individual, full-height panels of glass that are framed in either wood, aluminum, or a combination of both. The glass and frames can be selected to meet the same or different criteria as the rest of the building exterior. The means of operation can be based either on panels that fold (accordion style, off to one or both sides) or on sliding panels that stack or disappear into a wall recess. Either way, the effect is the same—full connectivity between spaces when open and full physical separation when closed, with controlled daylight and views possible in either condition. Creating spaces this way, filled with light and infused with the sense of openness and transparency, exemplifies a spirit of contemporary education and architecture. The resulting designs are more open, creating a shared use of space with brighter interiors and seamless transitions between indoors and outdoors. Moreover, with square footage often at a premium, the opening glass wall allows space to be utilized efficiently with potentially smaller footprints for some areas.

When it comes to using opening glass walls on a college or university campus, there are some other very good reasons to consider them beyond the space flexibility desire. Opening glass walls have been used by designers as a key ingredient for 21st century learning spaces to provide abundant fresh air ventilation and natural daylighting while providing acoustical buffering when needed. This enhances the well-being of the people inside since students and faculty typically spend 85 to 90 percent of their time indoors and the concentration of pollutants indoors is commonly higher than outdoors. Opening glass walls allow the interior spaces to be flushed with fresh air thus removing pollutants and creating a more invigorating indoor environment. When closed, the acoustic separation allows for better concentration, less noise distraction, and better intelligibility of the sound within the space.



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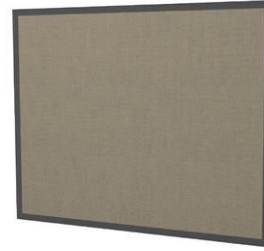
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Based on their multiple space, health, and environmental attributes, the use of operable glass walls on a college or university campus is suitable to many different building types. Some of the most common ones are discussed as follows.

- **Academic buildings:** Opening glass walls provide abundant natural daylight whether they are open or closed. Studies have shown that students with limited classroom daylight were outperformed by those with abundant natural light by 20 percent in math and 26 percent on reading tests. Hence, opening glass walls can help create a demonstrably better learning environment that is appreciated by students and professors alike.
- **Auditoriums and multipurpose facilities:** Exterior opening glass walls in multipurpose facilities are a natural fit. They can easily be configured to provide expanded event space and indoor/outdoor access for classes, lectures, speakers, performances, and special events. Quickly opened or closed, they deliver unobstructed access into the space, helping to accommodate larger events. The large openings also allow for easy movement of large objects, such as staging, tables, and chairs. The large glass panels provide generous natural daylight, fresh air ventilation when open, and an energy-efficient sound barrier to the outside when closed. During high-traffic events (e.g., class registration or event start and finish), the opening glass walls allow for the free flow of people through wide openings. During low-traffic times or when the system is closed, a single swing door can handle traffic flow while maintaining energy efficiency.
- **College campus student spaces:** Modern campuses are emulating the hospitality industry by creating areas where students can meet, work together, converse, or just hang out. Opening glass walls join multiple areas together to facilitate these activities or can conversely be used to separate out smaller groups when needed.
- **Cafeterias/food service facilities:** Creating a great student dining and socializing experience can be enhanced with wide-open entryways to the cafeteria area. A large opening encourages students to easily enter (or exit) and find their classmates. The benefits of the large glass panels include fresh air and natural daylight with the corresponding potential for reduced heating, cooling, and lighting costs—particularly during off-peak times when the space has low occupancy. Outdoor connected food service spaces can easily be converted from open to closed due to a change in the weather since even large



Images courtesy of Inpro

Innovative, durable wall panel systems can be used to provide wood-grained or other surface treatments, including (from left) white boards, tackable fabric panels, and custom printed panels with art or graphics.

- operable glass panels can be quickly and easily moved by a staff member.
 - **Libraries:** In libraries, opening glass walls can be used to manage interior space and for sound buffering by partitioning off rooms that have higher activity or sound levels at times. As exterior applications, they can allow for gardens and courtyards to be connected to the interior while allowing natural daylight and fresh air to flow throughout the space.
 - **Campus natatoriums:** Indoor pools can become loud, and the air oppressively heavy. Incorporating an opening glass wall allows fresh air ventilation, relief from sound reverberation, and creates a less closed-in space.
 - **College sports venues:** Many college sports stadiums are creating choices in seating types from open outdoor bleachers to private, enclosed boxes and different levels in between. Using an opening glass wall system in front of a box seating area provides the further option of having a protected seating area or one that is fully open when the weather is favorable. Either way, it maintains an unobstructed view in addition to protecting the seats from the outside elements in the offseason.
- Overall, the use of opening glass walls can achieve a lot of design and operation goals for college and university buildings. Architects can work with manufacturers to maximize their usefulness and functionality while keeping costs in line with the budget.

INTERIORS INCORPORATING BEST PRACTICES

Turning from building exteriors to interiors, the design challenges and requirements for higher-education buildings are similar. Aesthetics, creativity, functionality, durability, cost effectiveness, and performance all need to be embodied in the design and construction of the many and varied types of interior rooms and spaces in college and university settings. Getting there not only involves effective planning

and design, but it also requires an understanding of different types of materials and products that can be used effectively and innovatively. We will look at three areas where this approach can be utilized to create the most up-to-date spaces and facilities.

Wall Panel Systems

Interior surfaces often need to function in a variety of ways, such as having a professional appearance and being durable enough to hold up over time from a lot of use by different people. One way that this is being achieved is through the use of prefinished wall panel systems that are available in a variety of finishes and mounting systems. Often available as a family of products from manufacturers, these systems can offer wood-grained or other attractive appearances, long-term durability due to the innovative materials used, and even a Class A fire rating.

Of particular interest in college and university settings, wall panel systems can be customized to provide a variety of functional features. For example, white board panels, in magnetic or nonmagnetic versions, can be incorporated into the wall to provide a writing surface, projection plane, or other uses for communication and teaching. Alternatively, a tackable fabric panel can be incorporated to elegantly replace random-sized bulletin boards or just provide a soft, acoustic, wall covering. For full customization, it is also possible to provide a solid panel with customized, printed graphics to assist in wayfinding, branding of a building or institution, or simply to provide a visual accent.

► Continues at ce.architecturalrecord.com

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

PRODUCT REVIEW

State-of-the-Art Design in Higher Education

Guardian Glass

Image courtesy of Guardian Glass



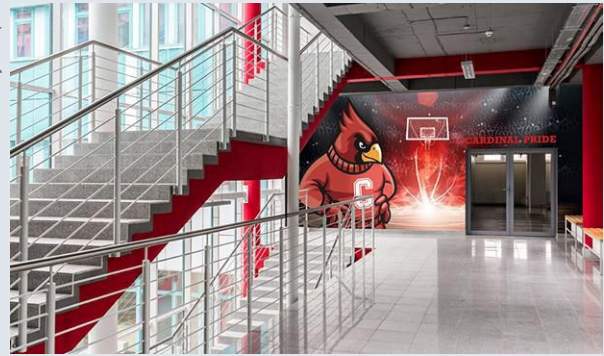
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New scuff-resistant paint repels marks and keeps surfaces looking newly painted in high-traffic areas for extended periods, without the need for frequent cleaning and retouching.

All images courtesy of Benjamin Moore

Scuff-Resistant Paint

New technology addresses durability in commercial high-traffic environments

Sponsored by Benjamin Moore | *By Layne Evans*

The painted surfaces in high-traffic environments come into constant contact with people, furniture, equipment, and a range of other challenges depending on the space. As a result, intensive cleaning and scrubbing have always been accepted as a routine part of maintenance. Frequent retouching, repair, and eventual repainting are inevitable. Even with careful maintenance, many painted surfaces in high-traffic settings can appear worn after only a few months in service.

Three major solutions are:

- heavy-duty, two-component coatings that require measuring, mixing and curing;
- pre-catalyzed, one-component epoxies formulated primarily to withstand the frequent hard scrubbing needed to remove daily marks and stains; and

- latex coatings in a higher sheen to increase durability.

This course will introduce one-component scuff-resistant paint, a new option for demanding, high-traffic commercial environments, and will explain how it works, how it differs from other coatings developed for high-traffic commercial environments, and how it helps improve all-around performance. A field test of scuff-resistant paint used in a high-traffic retail environment will be discussed in more detail.

DEMAND FOR DURABILITY

Although in many interiors the most challenging decisions are related to color and design, in high-traffic areas there are additional physical demands. Every day in high-traffic commercial environments there are multiple opportunities

CONTINUING EDUCATION



1 AIA LU/HSW

Learning Objectives

After reading this article, you should be able to:

1. Discuss unique challenges to paint performance, maintenance, and durability in high-traffic commercial environments.
2. Describe the new scuff-resistant paint's impact on long-term durability in high-traffic commercial environments.
3. Examine different characteristics of new scuff-resistant paint and other coatings often specified for demanding conditions, including two-component coatings and pre-catalyzed epoxies, and recognize where each can be used most effectively.
4. Evaluate the life-cycle cost of durable scuff-resistant paint compared to other coatings available for high-traffic settings.

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AIA COURSE #K1709G



WE RODE

SKATEBOARDS

ON THIS WALL ALL DAY.

**AND DIDN'T
LEAVE A SCUFF.**

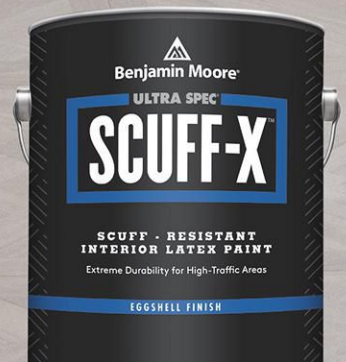
Don't believe us? See how Ultra Spec® SCUFF-X® for commercial spaces kept this law firm's walls scuff-free at BenjaminMoore.com/Scuff-X



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for the walls to be rubbed, marked, stained, and scuffed, by impact or simple contact.

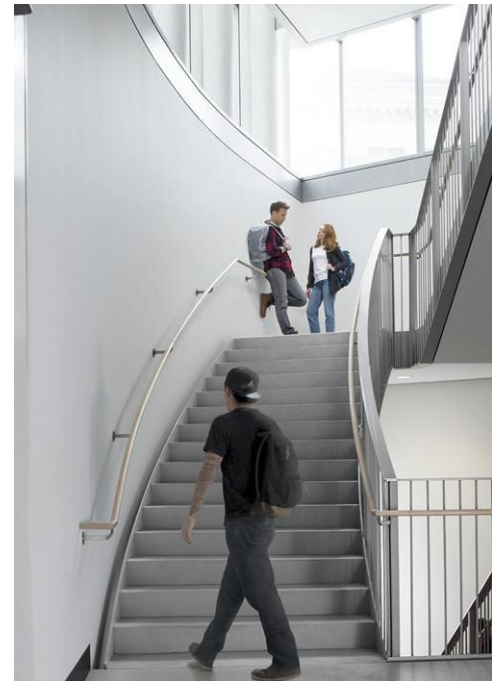
The formula of the new scuff-resistant paint was developed to respond directly to challenges faced in these demanding environments. “These are 24/7, high-occupancy, high-abuse environments. Painting is a definite interruption. We were hearing frustration from many companies about serviceability, the real business cost of constant cleaning and repainting, even using heavy-duty epoxies,” says Jim Gorman, senior strategic account manager, national accounts for Benjamin Moore & Co., who works directly with large corporations such as national hotels, restaurants, and retail chains with hundreds of facilities. “We went to our research department with a list of really specific requirements.”

The basic requirements included that the paint: be one component to avoid the complications and risk of error when mixing two-component paints; have low odor so that spaces could be painted while operations continued; have low VOCs; be fast drying for minimal disruption; and have something that wasn’t available in existing paints: the ability to resist scuffs and marks for minimum maintenance and repainting. The paint had to perform in a wide range of high-traffic applications, each with unique challenges:

- **Hospitality:** In these settings, there is a constant flow of guests, service personnel, cleaning, and maintenance crews throughout

the facility in guest rooms, lobbies, stairwells, restaurants, and service areas. Furniture and equipment are frequently moving in public spaces and dining areas. In many large hotels, for example, the largest source of unsightly damage to walls is the housekeeping staff, working quickly with large carts and other cleaning equipment. In restaurants, a small space such as the storage area for high chairs, always visible to the public, might be almost impossible to keep presentable and free from marks without frequent retouching. Most areas cannot be closed for more than a short period for painting and maintenance.

- **Education:** Daily heavy traffic characterizes all types of educational settings, in classrooms, hallways, cafeterias, dormitories, stairwells, gathering spaces, and gyms. Visual design must be appealing and support learning. Many new signature buildings on university campuses in particular feature state-of-the-art architecture and performance. But educational buildings of all types generally have strict operation, maintenance, and replacement budgets and select products for long-term durability.
- **Retail:** For stores and retail businesses of all kinds, a welcoming, attractive atmosphere that reinforces the brand of the business is key, but constant heavy traffic and hard wear and tear in fitting rooms, elevators, and employee spaces require enhanced du-

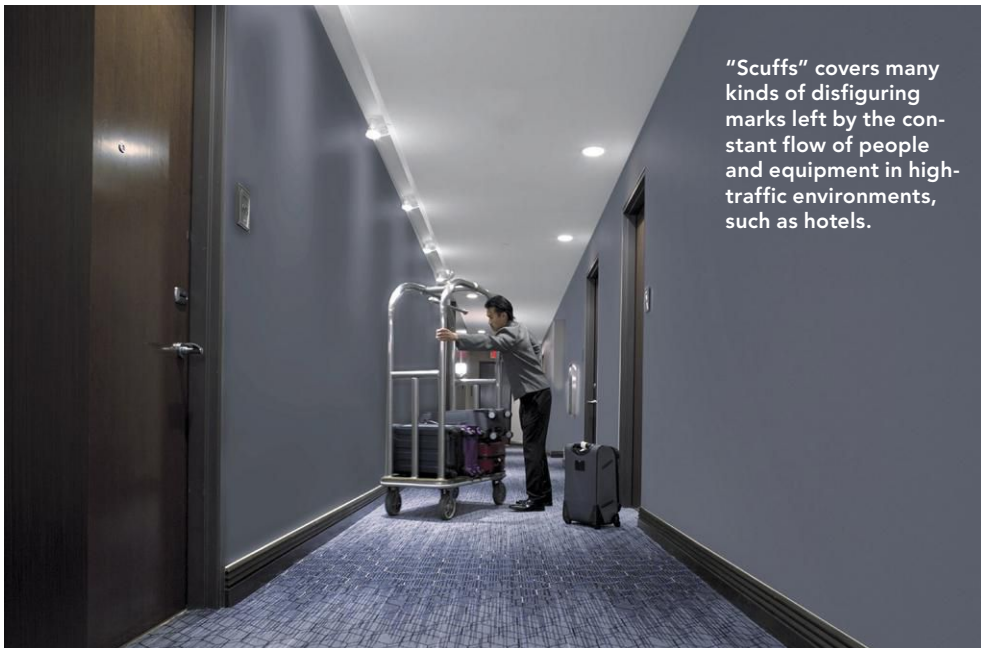


Painted surfaces in all types of educational settings are subject to daily heavy traffic. New scuff-resistant paint maintains clean appearance without frequent scrubbing and retouching.

ability. Fitting rooms are a good example of the problems involved. Retailers often refer to these as “revenue rooms,” the points at which most purchasing decisions are made. Yet constant banging from hangers and pocketbooks, marks from shoes and lipstick, and other normal contact with shoppers makes fitting room surfaces difficult to keep attractive. For retailers, every minute the doors are closed for maintenance means lost revenue so the ability to paint and repaint rapidly during business hours for minimal disruption is important. Profit margins for retail business are typically tight, so cost-effective maintenance and reduced labor requirements for frequent touch-ups can make a significant difference. (See “New York City Retail” case study.)

Continues at ce.architecturalrecord.com

Layne Evans is a writer specializing in architecture, construction, the building industry, energy, and the environment. She has created more than 50 print and multimedia continuing education courses.



“Scuffs” covers many kinds of disfiguring marks left by the constant flow of people and equipment in high-traffic environments, such as hotels.



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Cool Roofing for Cool Climates

TPO and PVC membrane reflective roofs continue to prove their effectiveness in all climate zones, debunking myths that cool roofing is only suitable in warm environments

Sponsored by GAF



This reflective membrane crowning the U.S. Bank building in Boise, Idaho, demonstrates the effectiveness of cool roofs in all climate zones.

Photo courtesy of GAF

Here's an alarming fact: Planet Earth has warmed 1.26 degrees Fahrenheit in the past century, which is approximately 10 times faster than typical warming rates. But what's worse is the localized urban heat island (UHI) effect has caused the annual average temperature in a city of a million people to increase between 1.8 and 5.4 degrees Fahrenheit, according to the U.S. Environmental Protection Agency, and this number can jump to as high as 22 degrees Fahrenheit warmer in the evening hours.

Defined as a metropolitan area that is significantly warmer than surrounding rural areas due to a concentration of buildings and human activities, the urban heat island effect has taken hold in today's urban environments, currently populated by more than half of the world's inhabitants.

With an increase in heat waves, periods of abnormally hot weather, and increased health issues—particularly amongst the elderly and those with conditions such as asthma—the UHI threat is real.

Of particular concern is the application of dark-colored roofs, especially in these urban environments, as Lawrence Berkeley National

CONTINUING EDUCATION



1 AIA LU/HSW

Learning Objectives

After reading this article, you should be able to:

1. Identify the urban heat island effect and how light-colored roofing membranes can help mitigate overheated rooftops.
2. Discover how reflective roofs deliver HVAC energy savings in northern climates.
3. Differentiate between TPO/PVC thermoplastic membranes and EPDM thermoset membranes, and discuss the advantages that thermoplastic offers.
4. Explore and analyze the misperception that reflective roofs create condensation issues.

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Photo courtesy of Shutterstock

Laboratory researchers report in a 2013 paper titled “Economic comparison of white, green, and black flat roofs in the United States” in the *Energy and Buildings* journal, “The sunlight that is absorbed heats the roof, which increases cooling costs in air-conditioned buildings, increases discomfort in unconditioned buildings, increases mortality during heat waves, and pollutes local and regional air.”¹

Case in point, a July 1995 heat wave took the lives of 739 Chicagoans, with virtually all those deaths occurring on the top floors of black-roofed buildings without air-conditioning. As reported by *Chicago* magazine, in 2015, in looking back at that 1995 heat wave, “by the afternoon, temperatures hit 104 at O’Hare and 106 at Midway. It felt like 125, according to the heat index, which factors in humidity. In what’s known as the heat island effect, brick buildings, asphalt parking lots, and tar roofs trapped the warmth and then radiated it outward.”²

THE COOL ROOF SOLUTION

Fortunately, there are ways to successfully mitigate escalating rooftop heat, directly impacting UHI levels. Selecting light-colored membranes in place of dark roofing not only decreases the UHI impact, but it also increases the reflectivity of sunlight, thus reducing heat within the building and cutting down on energy demand.

“City roofs are traditionally black...but from a climate and urban heat island standpoint, it makes a lot of sense to install bright, white roofs,” states Stuart Gaffin, research scientist, Center for Climate Systems Research, Columbia University, New York, in a blog post titled “New York Roofs: Brighter, Whiter, Cleaner.”³

Conversely, “TPO/PVC roofs are basically reflective rooftops that reflect the sun’s radiations back into the atmosphere and do not allow it to be absorbed by the rooftop, thus inhibiting transfer of energy/heat in the buildings. This keeps the buildings cooler in comparison to conventional roofs,” explains Ashish Sharma, Ph.D., research assistant professor, Department of Civil & Environmental Engineering & Earth Sciences, Notre Dame University, Notre Dame, Indiana.

In fact, New York’s White Roof Project calculates that white roofs can save building owners up to 40 percent on their electricity bills. Furthermore, if all urban rooftops worldwide would be converted to white, the planet would save 24 billion metric tons of carbon dioxide. To understand how significant this could be, this value is the equivalent of total world emissions of the greenhouse gas in 2010.



Many cultures, such as Santorini, Greece, understood the importance of building reflectivity as a way of reducing internal temperatures long before the advent of air-conditioning.

As opposed to darker membranes—for example, ethylene propylene diene monomer (EPDM), which absorbs more than 90 percent of the sun’s rays, thereby heating the rooftop to high temperatures and subsequently the building—light-colored membranes only absorb 20 to 25 percent of the sun’s energy.

In fact, the LBNL reports that white or light-colored membranes can reduce the roof’s surface by more than 40 degrees Fahrenheit, as compared to a dark-colored membrane. Originally documented by an LBNL study of a retail store in Austin, Texas, by switching from a black membrane to a white one, the facility’s average summertime rooftop surface temperature decreased from 168 to 126 degrees Fahrenheit.⁴

Converting this into dollars and cents, the study recorded a peak-hour cooling energy savings of 14 percent and overall annual energy savings of 7.2 cents per square foot, which, adjusted for inflation in 2017, would be approximately 10 cents per square foot.

In addition to these energy savings, cool roofs are longer lasting and require less maintenance as compared to black roofs which must withstand much higher temperatures. For example, EPDM roof membranes can shrink over time due to the effects of high heat. This shrinkage can lead to failure of the adhesive

seams, as they generally don’t perform well after long-term exposure to heat.

According to the U.S. Department of Energy’s Energy Efficiency & Renewable Energy Building Technology Program’s *Guideliens for Selecting Cool Roofs*, in cases where heat-related degradation is the main reason for roof failure, it is plausible that a cool roof could be more durable and outlast a similar dark roof.⁵

Another LBNL study conducted for the Federal Energy Management Program concluded that by increasing the roof albedo to moderate and high levels in 2003, this would yield \$16 million and \$32 million in energy cost savings, respectively.⁶

“Clearly, FEMP should encourage use of cool roofs in new construction and during regularly scheduled reroofing to keep incremental costs down,” states the report. Factoring in more recent data, LBNL estimates that utilizing cool roofing on 80 percent of commercial buildings in the United States would result in 10,400 gigawatt-hours of cooling energy savings and approximately \$735 million in annual overall energy savings. In addition, the product lifetime energy savings has a present value of \$11 billion.

▶ Continues at ce.architecturalrecord.com



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Health-care facilities treat patients who suffer from disease, but new standards seek to be sure they don't also cause infectious breakouts caused by water-borne bacteria, such as Legionnaires' disease.

All images courtesy of Watts, except as noted

Meeting New Water Quality Mandates in Health-Care Settings

New national standards target reducing the risk of Legionnaires' disease

Sponsored by Watts | By Peter J. Arsenault, FAIA, NCARB, LEED AP

Hospitals and other health-care facilities in general require water to operate, and usually a lot of it. It is used not only in patient room sinks, showers, and toilets, but also in staff sink/scrub areas, wellness rehab areas, food service centers, public restrooms, and laboratories. Additionally, water drives many of the mechanical systems in a facility, including HVAC systems, fire protection, and domestic water systems, both hot and cold. All of this water is intended for good outcomes but can also be the primary cause of concern for unintended consequences since water can be a prime breeding ground for bacteria and disease if not managed properly. Waterborne pathogens can be a threat not only to patients but also to staff, visitors, and other people who come in contact with liquid water, vapor, or airborne spray in a health-care setting. One of the most troubling of those pathogens is legionella bacteria, which is the cause of Legionnaires' disease (abbreviated LD or also called Legionellosis), which is a type of pneumonia that can lead to severe disabilities or even death. Its name comes from one of the first and most public discoveries of the condition, which occurred at a 1976 convention of the American Legion where a

number of attendees (i.e., Legionnaires) became sick and/or died. The cause was ultimately traced to infected airborne moisture in the HVAC system of the hotel. Since then, the Centers for Disease Control (CDC) have investigated the condition at great length and tracked anywhere from 8,000 to 18,000 cases per year of people that have become infected in the United States. Obviously, they don't all make the news, but the concern is real and significant in health-care settings, so much so that new standards and guidelines are now in place that are applicable to designers, facility managers, and health-care executives. This course will look at some of the concerns over LD, the requirements of standards related to controlling or eliminating cases and outbreaks, and some of the fundamental design implications related to water-based systems in health-care settings.

HEALTH CARE AND LEGIONELLA

Those tasked with managing and operating a successful health-care facility typically focus on achieving some fundamental goals. These can include safety for their patients, employees, and the public, providing comfort for those within the facility, and appropriate efficiency in operations.

CONTINUING EDUCATION



1 AIA LU/HSW

Learning Objectives

After reading this article, you should be able to:

1. Identify and recognize the conditions that contribute to the development and growth of legionella in health-care facilities.
2. Investigate the requirements of ASHRAE 188 and the new DHHS policy memorandum related to water quality in health-care settings to reduce the risk of Legionnaires' disease.
3. Assess the potential ways to address legionella in water supply, distribution, and drainage systems in health care.
4. Specify products that can contribute to compliance with water quality requirements contained in the DHHS policy memorandum and ASHRAE 188.

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Ultimately, the goal of everyone who works or visits a health-care facility is the overall satisfaction of the patient. When it comes to treating patients with Legionnaires' disease, all of these goals apply, so it is worth understanding a few fundamentals and statistics about the disease:

- Legionnaires' disease doesn't spread from person to person. Instead, the bacteria spreads through mist, such as from cooling towers, evaporative condensers, showers and faucets, whirlpool spas, decorative fountains and misters (source: ASHRAE 188).
- Those at most risk include persons who are at least 50 years old, smokers, or those with underlying medical conditions such as chronic lung disease or immunosuppression (source: Mayo Clinic and others).
- Many people exposed to legionella bacteria don't develop symptoms, but those who do may experience cough, fever, chills, shortness of breath, muscle aches, headaches, and diarrhea (source: Mayo Clinic and others).
- LD can be treated with antibiotics, such as azithromycin or ciprofloxacin, assuming it is diagnosed properly and in time for the antibiotics to help (source: Mayo Clinic and others).
- Cases of LD reported annually in the United States from 2000–2009 increased by 217 percent; measured from 2000–2014, the increase is 400 percent (source: CDC).
- The number of direct health-care dollars it costs in the United States to treat a single case of Legionella is \$34,000 (source: CDC).
- The cost to the health-care system for hospitalizations for three common water-borne diseases is \$539 million annually, with Legionnaires' disease being the largest cost (source: CDC). In addition, if a person acquires Legionnaires' disease while a patient at the hospital, the hospital may not get reimbursed for expenses related to his/her care.

While LD is clearly a potential source of income for care in hospitals, if the infection is contracted while someone is in a health-care facility, it can have potentially dire consequences on the continued operation of the facility. Consider these statistics:

- The CDC has investigated building-associated outbreaks of LD and determined that the most common places for contracting the disease are hospitals, long-term care facilities, and hotels. In these types of buildings, the sources for spreading water droplets contaminated with legionella can include things like showers and faucets of building plumbing systems, cooling towers, hot tubs, decorative fountains, and aerosolizing water features (source: ASHRAE).
- The range of reported jury awards and settlements related directly to LD is \$255,000 to \$5.2 million. (Reports of settlements are rare,

as most agreements include stipulations that payout amounts remain confidential.) The serious personal injury or death caused by this disease makes proof of extensive compensatory damages simple (source: Claims Management).

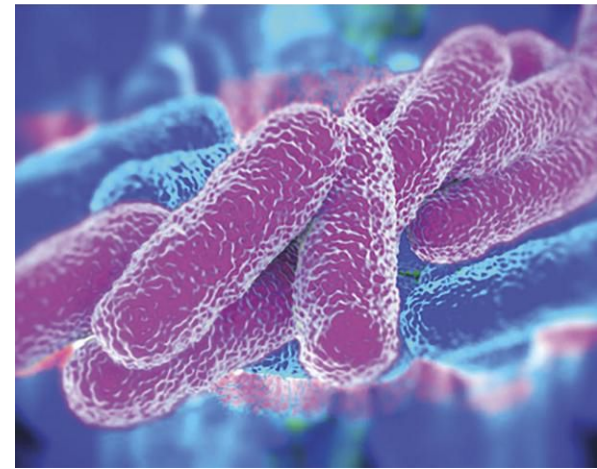
- The largest dollar jury award (so far) for LD plus gross negligence and other failures that resulted in long-term disability and severe debilitation is \$193 million. The case was not fatal (source: Claims Management).

It is not surprising then that hospital executives and facilities management teams are not only aware of this potential liability but are actively working to prevent legionella outbreaks. It is also not surprising that national standards have recently emerged to provide guidance not only to hospital personnel but also to design professionals on how to address this potential threat.

ASHRAE STANDARDS

The American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) has taken note of the connection between water-based mechanical and plumbing systems in buildings and legionella bacteria growth. After reviewing the concerns and conditions, it first published a guideline in the year 2000 titled Guideline 12-2000 – Minimizing the Risk of Legionellosis Associated with Building Water Systems. It has continued to review the issue and in 2015 published an updated ANSI/ASHRAE Standard 188: Legionellosis: Risk Management for Building Water Systems. This standard, which it suggests "is essential for anyone involved in design, construction, installation, commissioning, operation, maintenance, and service of centralized building water systems and components," establishes minimum risk management requirements for building water systems to combat the legionella bacteria. It not only includes a description of the environmental conditions that promote the growth of legionella, but it also outlines action plans for managing and monitoring those conditions. Additionally, there are informative annexes and a bibliography that contain suggestions, recommendations, and references for additional guidance.

ASHRAE 188 begins by pointing out that while legionella bacteria occur naturally in freshwater environments, it becomes a health concern when it grows in building water systems that are not adequately maintained. It also recognizes that the mere presence of legionella in a water system or device is not sufficient to cause disease. Rather, to cause illness, the bacteria must ultimately be inhaled or aspirated into the lungs of a susceptible person. Nonetheless, there is enough incidence of that happening to warrant a concerted effort to prevent legionella growth in buildings.



Legionella bacteria in water systems can spread to people through the air causing a severe type of pneumonia called Legionnaires' disease, which has been reported in an increasing number of cases since the year 2000.

A key focus of ASHRAE 188 is to assist designers and building operators in developing a specific water management program for the systems that exist in their buildings or campuses. It recognizes that design, good operations, and maintenance procedures that prevent growth and spread of legionella are regarded as the best methods of preventing disease. In fact, CDC investigations of outbreaks show that 9 out of 10, or nearly all of them, were caused by problems preventable with more effective water management. Therefore, developing a water management program with the recommended practices can definitely reduce the chance of bacteria colonization, amplification, and dissemination to people. Of course, it cannot guarantee that a system or individual component will be totally free of legionella, but it should be able to keep it down within acceptable limits.

Creation of a water management program under ASHRAE 188 includes a seven-step process as follows:

1. **Program team:** The persons responsible for the development and implementation of the program need to be identified. This will necessarily include a design professional familiar with the design and operation of all of the water systems in the facility. Suggested team members include infection prevention personnel, a legionella expert who could be a consultant or equipment manufacturer, upper management personnel with decision-making authority, and facility management.
2. **Water systems description and flow diagrams:** For existing buildings, a complete survey and documentation of the water systems by a design professional are called for using the process described in the standard.

For new buildings, all potable and nonpotable water sources need to be assembled for the building(s) and the site, including schematics of all water systems.

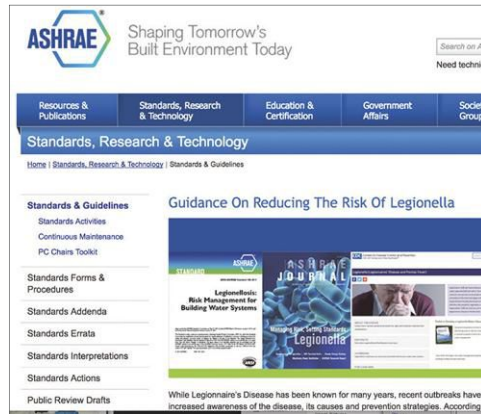
3. **Analysis of building water systems:** A professional evaluation needs to take place to determine where hazardous conditions may occur that could promote the growth of water-borne bacteria.
4. **Control measures:** A determination needs to be made of locations where control measures must be applied and maintained in order to stay within established control limits of any legionella bacteria growth. Once determined, the control measures need to be implemented accordingly.
5. **Monitoring and corrective actions:** Procedures for regular and routine monitoring of the effectiveness of the control measures need to be developed and carried out. If the system is not operating with established limits, then corrective actions must be taken to restore effectiveness.
6. **Confirmation:** Additional procedures need to be in place first to verify that the program is being implemented as designed and second to validate that the hazardous conditions throughout the building water systems are being controlled.
7. **Documentation:** All activities of the program need to have documentation and communication procedures in place and carried out.

Overall, the key is to bring the right people together to follow the process and develop specific procedures for a particular facility to adopt and implement. Within this framework, ASHRAE 188 articulates the requirements for building surveys and building water systems in detail to identify specific criteria that need to be incorporated. There is also a specific section covering requirements for designing building water systems and one specific to health-care facilities. Like all standards, ASHRAE 188 is a voluntary consensus standard that may or may not be adopted into local plumbing codes. If it is, enforcement is most likely performed by the local authority having jurisdiction. Otherwise it may be adopted by a local health-care organization or used to support certification or accreditation of the facility.

MEDICARE/MEDICAID AND LEGIONELLA

The Department of Health & Human Services (DHHS) Centers for Medicare and Medicaid Services (CMS) is the arm of the federal government that provides funding and oversight for facilities and care providers administering to patients using Medicare or Medicaid insurance. In addition to being an important source of income for health-care facilities, CMS oversees requirements for long term health-care facilities. In June of 2017, they developed and released a new policy memorandum titled "Requirement

Source: ASHRAE.org



ASHRAE has been heavily involved in the creation of guidelines and standards to reduce the risk of legionella outbreaks in buildings since the year 2000.

to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD).” This policy memorandum applies to hospitals, critical access hospitals (CAHs), and long-term care (LTC) but is also intended to provide general awareness for all health-care organizations.

Under this policy memorandum, CMS expects Medicare certified health-care facilities to have water management policies, management teams, and procedures in place to reduce the risk of growth and spread of Legionella and other

opportunistic pathogens in building water systems. The basis for these policies and procedures is ASHRAE Standard 188, and in 2016, the CDC and its partners developed a toolkit to facilitate implementation by facilities.¹ This toolkit describes the environmental, clinical, and epidemiologic considerations for health-care facilities related to legionella. It also provides some suggested logistics of establishing a water management team, conducting surveys, and developing/implementing a water management program per ASHRAE 188. It includes control measures such as physical controls, temperature management, disinfectant level control, visual inspections, and environmental testing for pathogens.

Of particular note to health-care executives, facilities are expected to comply with the CMS requirements to protect the health and safety of its patients. Those facilities deemed unable to demonstrate measures to minimize the risk of LD are at risk of citation for noncompliance with the CMS Conditions of Participation. The CMS policy memorandum indicates quite clearly that “Accrediting organizations will be surveying health-care facilities deemed to participate in Medicare for compliance with the requirements listed in this memorandum, as well, and will cite noncompliance accordingly”. Based on this, it is expected that all health-care facilities will have a renewed interest in establishing and carrying out a full water management program based on ASHRAE 188 and the CMS policy.

A *Legionella* water management program consists of:

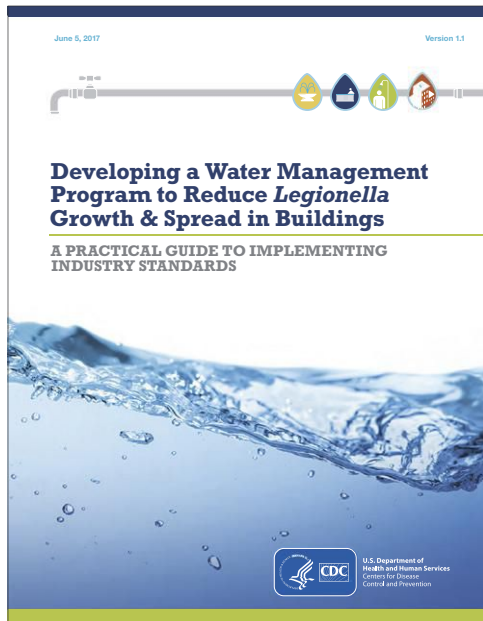
- 1 Establishing a water management program team.
- 2 Describing the building water systems using words and diagrams.
- 3 Identifying areas where *Legionella* could grow and spread.
- 4 Deciding where control measures should be applied and how to monitor them.
- 5 Establishing ways to intervene when control limits are not met.
- 6 Making sure the program is running as designed and is effective.
- 7 Documenting and communicating all the activities.

www.cdc.gov/legionella/WMPtoolkit

SOURCE: ASHRAE 188: Legionellosis: Risk Management for Building Water Systems June 26, 2015.

ASHRAE standard 188 describes seven steps that are involved in an ongoing water management program for commercial and institutional buildings, including health-care facilities of all types.

Source: CDC.gov



The Center for Disease Control (CDC) has published a water management toolkit resource for building designers, managers, and owners to use based heavily on ASHRAE 188.

WATER SYSTEMS AND LD IN HEALTH-CARE FACILITIES

With an understanding of the nature of the issues and the requirements of the standards, let's turn our attention to the specific parts of a water system in health-care facilities that need to be addressed. Most commonly, LD outbreaks are linked to environmental reservoirs in large or complex water systems, including those found in health-care facilities such as hospitals and long-term care facilities. When water is moved or sprayed into the air, such as in showerheads, cooling towers, hot tubs, and decorative fountains, then transmission of the legionella bacteria to humans is possible. Further, legionella can grow in parts of building water systems that are continually wet and within a temperature range suitable for growth. The ideal range of temperature for such growth is 95 to 115 degrees Fahrenheit, but the bacteria is known to grow and be active anywhere between 68 to 122 degrees Fahrenheit. Below 68 degrees, legionella bacteria can survive but are dormant, while above 122 degrees they can survive but do not multiply. The bacteria will die slowly when temperatures in the water reach 131 degrees Fahrenheit and rapidly between 158 to 176 degrees.

Since a building water system contains many different subsystems and components,

we will review some of the major ones in the following sections with a discussion of the relevant approaches to identifying legionella hazards and control methods.

Water Supply Components

Most health-care facilities rely on a public or municipal water source that has likely been treated in a centralized plant and piped through public water supply lines. The water leaving the plant has certainly been tested and maintained to prescriptive levels for potability and human health, but there is no guarantee that its trip through an aging piping system will keep it that way. Water line breaks, outdated joint connections, and other conditions all have the potential for contaminating municipal water delivered to a building. Therefore several water supply components deserve particular attention.

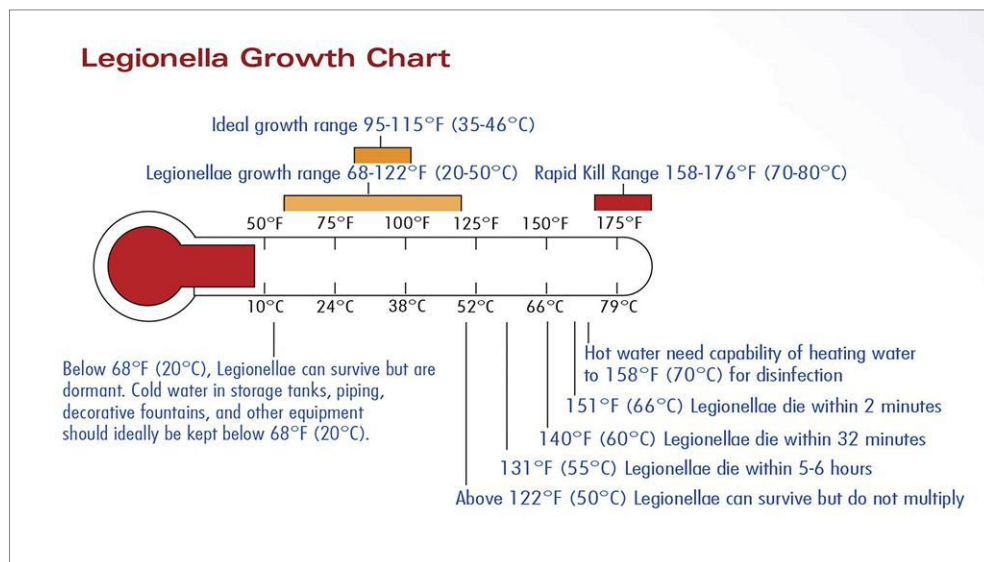
- **Backflow preventers:** Among the common approaches to protecting water quality in a water supply system, the use of backflow preventers is typical. Backflow systems are essentially a series of plumbing control valves that prevent the reverse flow of polluted water from entering into the potable water supply due to back-siphonage and/or backpressure. Some municipal water systems will require backflow systems, particularly on large water users such as health-care facilities, since it is in the interest of public safety and health to do so, especially if there is any chance of infectious bacteria enter-

ing the water system. Therefore, including backflow preventers can be part of a control measure in a water management program. When selecting back flow preventers, there are choices to consider. Stainless steel versions are available as basic or mid-tier products with some limited options. More robust and durable choices include ductile iron valves, some with epoxy-coated paint on the exterior and designs for continuous or heavy usage.

- **Pressure reduction:** One of the things that can alter the performance of any water system is the water operating pressure. Water coming in from a municipal system may be affected by other buildings as well as the level of demand in a health-care building. Either way, if the pressure is too high, some parts of the building water system may not work well or can be damaged. If the pressure is too low, then water may not flow as intended and may lead to conditions that are unwanted. The remedy is to install a valve to regulate the water pressure in the building.

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



Legionella bacteria is very sensitive to temperature. It can go dormant at low temperatures, thrive in normal building temperatures, and be killed at higher temperatures.



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The Benefits of Art-Grade Bronze for Residential, Commercial, and Hospitality Applications

Architects and designers are increasingly turning to high-quality bronze finishes to give hardware a rich, contemporary feel

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Not all bronze hardware is created equal. Whether door, window, and cabinet hardware, tile, light fixtures, plumbing, or accessories, advances in high-end art-grade bronze—a sturdy, beautiful take on the classic alloy—can move residential, commercial, and hospitality projects to the next level from both a design and sustainability perspective. While a bronze finish often (and rightfully) conjures up a rustic, down-home aesthetic, trends point to its use in unique commercial applications, most notably in high-end spa, resort, and boutique hospitality facilities.

Architectural hardware, overall, is an essential element for any building project, one that provides passage, access, and security, but whose operations we take for granted. The aesthetics of hardware design strongly influence our perceptions of the space we are in or the building we are entering. The architect and designer's selection, application, and specification of architectural fittings will make a critical contribution to the project's overall success.

CONTINUING EDUCATION



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Learning Objectives

After reading this article, you should be able to:

1. Discuss the aesthetic benefits of using art-grade bronze finishes in residential, commercial, and hospitality applications.
2. Identify appropriate design options, functions, and mechanisms for hardware applications.
3. Explore the sustainable qualities of art-grade bronze when used in door hardware, particularly in residential, commercial, and hospitality buildings, and explain how art-grade bronze finishes can contribute to sustainability goals.
4. Describe a typical manufacturing process used to produce art-grade bronze finishes.

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AIA COURSE #K1709M



These custom glass and oak entry doors feature large thumbblatch bronze hardware, shown in white bronze.

Over time, hardware has evolved from crude, handmade attachments and closure pieces to machine-made, industrialized mechanisms of great precision and design distinctiveness. Most recently, there has been a trend in high-end hardware toward unique design, which combines highlighting the natural properties of the bronze from which hardware is cast with its sculpture sense and precision-engineered properties. Hardware, which typically consumes a relatively small percentage of a building's construction budget, represents an annual construction value in the billions of dollars.

This course concentrates on high-end art-grade bronze hardware for residential, commercial, and hospitality locations. It will familiarize you with the trends, the process, the criteria, and the design decisions that enable the correct selection and specification of hardware for these applications.

BENEFITS OF ART-GRADE BRONZE

Selecting the best hardware material that can function under varied climatic conditions while maintaining basic design characteristics has become increasingly challenging. Steel, stainless steel, and aluminum all have their applications, but none can combine resistance, durability, a natural aging process, and a natural appearance the way bronze can.

Bronze has several favorable properties when used for hardware. It is nonferrous and will not rust. Bronze interacts and ages well, working in coordination with time, touch, and climate. Over time, the material distinctly reflects its surroundings. It ages naturally but is quite durable and robust. Additionally, bronze can be tempered by various applied patinas, which can speed the aging process to create unique hues to complement any style.

That said, the quality of the bronze used can make all the difference in meeting specialized project goals. Products cast in solid bronze (art-grade bronze) provide top quality in terms of different elements of the alloy. Perhaps the best way to describe the high quality of art-grade bronze is to say it is what you would find in an art installation or a statue. The alloy when heated allows it to pour nicely, and with some manufacturers' products, there is as much as 90 percent post-consumer recycled content (post-consumer waste is that which typically goes to a landfill) in the bronze, taking into consideration a small percentage for the lock mechanism and other nonrecycled subassemblies.

Bronze is actually an alloy, or a mix of several different metals that are heated together. The individual metal components and their ratios vary based on the desired quality and color. Commonly, bronze is a mix of copper and tin, but fine art-grade bronze is predominantly a mix of copper and zinc, with other elements added in smaller quantities. For architectural hardware,

Photo by Kevin Syms



Art-grade bronze hardware can provide durable, aesthetically unique options for a variety of projects and applications. Shown here is contemporary multipoint door hardware in white bronze.

two common art-grade alloy compositions are suitable for both decorative and functional high-quality installations.

The first and probably the most common composition is referred to as **silicon bronze**, even though it contains only 4 percent silicon compared to 6 percent zinc content, and the remaining 90 percent, or the overwhelming majority, comes from copper. This produces the commonly pictured coppery gold color that ages to a deeper, rich color that most people associate with bronze. A second popular choice for hardware where lighter natural colors are desired is referred to as **white bronze** or tombasil. This alloy composition contains much less copper at 56 percent, but much more zinc at 24 percent. In addition, manganese (13 percent), nickel (5 percent), aluminum (1 percent), and lead (1 percent) are added to create the desired silvery color and other properties.

While different in color and other finish features, both types of bronze alloy described above have enjoyed popularity due to many favorable attributes, including:

- **Durability:** Bronze is a nonferrous material, meaning that it doesn't rust the way iron and steel can.
- **Corrosion resistance:** In addition to being extremely durable, bronze offers excellent resistance to corrosion.

- **Fatigue resistance:** Since bronze oxidizes only superficially, it resists metal fatigue and corrosion (especially seawater corrosion) better than steel. As a particularly dense alloy, it offers high-strength capacity in stressful environments.
- **Lower melting point:** Copper-based alloys such as bronze have lower melting points than steel or iron and are more readily produced from their constituent metals.
- **Easy care and maintenance:** Ideally, bronze surfaces should not be treated with a harsh cleaner. However, to help it age gracefully, bronze can be cleaned with mild soap, water, and a nonabrasive cloth.

As a material, then, bronze has remained a reliable, durable, and sustainable material for a dramatically long time and continues to be so today, using both time-tested and innovative manufacturing techniques.

Sustainability Features

Given these features, high-quality art-grade bronze finishes can also contribute to a project's sustainability goals. Architectural hardware is a significant part of many residential structures and even more so for commercial buildings, particularly in hospitality settings. Hotels, resorts, restaurants, and related building types all rely on properly controlling the

flow of people and goods to maintain privacy, security, and operational success. Typically, this control requires well-designed and durable hardware systems that include door and window operating and locking components. From a design standpoint, the selected hardware needs to be consistent with these operational demands, as well as with the overall design vocabulary of the building. Further, since all manufactured metals have an environmental impact, the selection of hardware that is made from predominantly recycled material by manufacturers using green and sustainable practices is paramount to green building design. Architects and other design professionals are increasingly finding that art-grade bronze architectural hardware meets all of these demands. As a long-standing traditional metal, it has proven its characteristics of durability and sustainability. Modern manufacturing methods combined with this historical strength allow residential, commercial, and hospitality facility designers and owners to reap the benefits of the old and new characteristics of bronze architectural hardware.

Casting Process Basics

The art of crafting bronze products begins with the casting process, where the material is hand poured from a crucible into a mold, creating the raw bronze shapes referred to simply as castings. Once cooled, these castings are then given to the experienced hands of skilled craftsmen for detailed finishing of every surface.



Photo by Kirsten Schultz

Molten bronze is poured from a crucible into a mold.

Although the casting process can be very labor intensive, the payoff can be seen in the value, durability, and long life cycle of the products.

Continuity of Design

Given the versatility of hardware finished with art-grade bronze, there is an abundance of design options that can be carried through a project. This continuity of design, whether in residential settings, commercial spaces, or hospitality facilities, gives designers tremendous freedom to create nearly any look required utilizing high-end products.

The architectural style choices available today cover a broad spectrum, spanning from modern and post-modern to period, rustic, traditional, and even transitional. Each style and design vocabulary requires details that work together to provide a harmonious appearance.

QUALITY/CUSTOMIZABLE PRODUCTS

Taking a design idea from inception to a finished product can be an onerous task. Oftentimes the vision must be compromised when the proper materials aren't chosen. Bronze, a strong but malleable alloy with natural beauty, is a good fit for luxury settings. True bespoke hardware fits the exacting needs of the specifier, no matter the oddities or challenges. Inspiration can start at the simplest hand sketch or detailed, exact specifications of the client. Whether it's door or window hardware, plumbing fittings, tile, lighting, or furniture like table legs, chairs, or even countertops, art-grade bronze can be an ideal choice for custom fabrication.

Truly inspiring spaces bear the design professional's mark in the details. In most projects, common products are chosen, and to no one's surprise, a common result occurs. The outcome may be attractive and serviceable but easily forgotten and not often talked about. The informed selection of high-quality materials such as bronze reveals a discerning eye of the specifier, one who knows both the beauty and the durability of such a special, versatile alloy. Creating memorable spaces requires attention to the details of finishes as well as a refusal to compromise on them.

To this point, the trend toward hardware customization, in conjunction with the quality of art-grade bronze, is forging the way for customers to partner with a manufacturer to create one-of-a-kind designs with true artisan appeal. As Christian Nickum, president, Rocky Mountain Hardware, explains, "Working with a manufacturer that offers custom capabilities can allow designers and architects to put their signature on a project. Even a small change or modification can turn an ordinary product or fitting into something totally unique."

Photos by Kevin Syms



Classic Fleur de Lis hardware in silicon bronze medium was used for these reclaimed oak doors.



Clean-lined multipoint hardware on these interior office entry doors features a white dark luster finish.

Carrying an Aesthetic Throughout a Project

Whether modifying an existing design or creating a new one, the design process begins with an idea from the client. It can be scribbled on a note or have exacting dimensions/design. Normally a pattern fee and per-unit price is quoted. Upon acceptance, engineered drawings are prepared for approval. Sometimes a prototype is prepared, or with client approval, the order can go right to production. Production times can vary depending on the complexity of the pattern, but once completed, normal manufacturing production times apply.

Custom designs are not just limited to architectural fittings such as:

- Hardware, door, and window
- Lighting
- Plumbing
- Tile
- Accessories, kitchen, bath, and home

Rather, they can be used with virtually any architectural fitting, such as table legs, floor medallions, company logos, family crests, or even accessories such as napkin rings. Imagination is the only limit.

Selecting quality, unique finishes is important for sustainability purposes as well as to set a project apart from others. Though it may be easier and quicker for a designer or architect to go to a manufacturer's standard company specification, oftentimes the opportunity to have a hand in the design process is met with great appreciation. Using a quality material, such as art-grade bronze with its unique finishes and sustainability, can serve as a distinguishing feature.

Furthermore, custom options allow for endless design integration. Coordinating designs and finishes on any project is a concern for clients and specifiers alike. Most manufacturers' design families are available in multiple sizes to marry the fittings to the applications throughout the project. With coordinating plate designs and sizes, door pulls, knobs, levers, cabinet knobs, and pulls as well as patina matching on all, design consistency can be achieved.

It is also important to note that choosing the correct hardware for the application (door, window, lighting, plumbing, etc.) is paramount to success of the project. Most manufacturers will have trained representatives to assist in the specification process.

MANUFACTURING PROCESS

While in the past one-off fabrication methods have represented a more complex or costly approach, today they are competitive, with experts seeing growth in custom cast designs in the commercial, hospitality, and residential fields, among others, due at least in part to an increased interest in clean-line, modern hardware choices that are often tailored specifically for a project or series of installations. The nature of a cast product—it's all made to order, and the designer can fashion

Photo by Kevin Syms



The entrance to the Sun Valley Pavilion at the Sun Valley Resort in Idaho features a solid bronze 5-foot custom sun medallion.

the hardware in the shape of a logo, solve a specific design issue such as accessibility for the disabled, or just create a whole new style—makes it a logical choice for these types of requirements.

Generally speaking, creating a bespoke design for hardware, furnishings, and architectural materials often requires a lead time of several months, although current industry turnaround is much faster than it was even 10 years ago. For a door pull, for example, many foundries and fabricators have engineering teams working with three-dimensional

CAD systems, parametric solids software, or building information modeling (BIM) to refine and verify the custom shape. A rapid prototyping system such as stereolithography (SLA)—an additive, 3-D printing process—can be used to create the hardware molds. Of course, there is still the age-old method of utilizing master carvers and pattern makers who hand carve the molds in wood or plasticine.

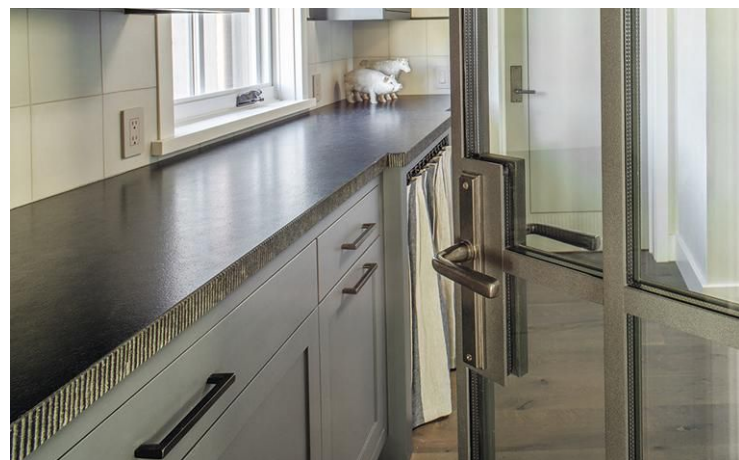
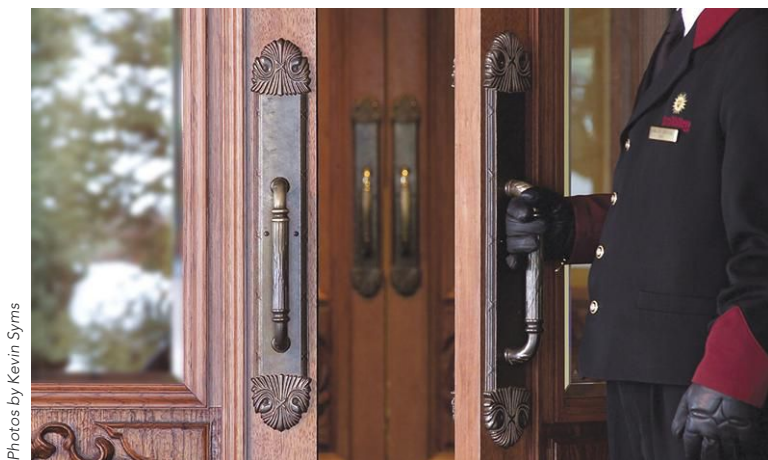
Sand Cast and Investment Cast

From there, the process hasn't changed that much from the Bronze Age. There are two types of casting methods: **sand cast** and **investment cast**.

Sand casting, used for about 70 percent of metal hardware according to T.V. Ramana Rao in *Metal Casting: Principles and Practice*, is the faster and less-expensive technique that involves packing the prototype model (pattern boards) in a mix of sand and a bonding agent. These pattern boards are pressed into two halves (cope and the drag) of sand boxes. The sand is then pounded down, pattern boards removed, and the two halves are assembled to "reverse out" the mold.

On the other hand, investment casting—also known as a lost wax and originally performed with beeswax—is costlier but results in a more accurate, repeatable, and finely detailed result for many metals and alloys, with little machining or finishing of the surface required. With this method, individual wax patterns are attached to a wax "tree," which is then dipped into a ceramic slurry, sprayed with sand, and allowed to dry. This process is repeated until there is a thick shell formed.

► Continues at ce.architecturalrecord.com



Left: A doorman at Sun Valley Resort opens custom door grips to the hotel lobby. Right: A custom residence uses door and cabinet hardware in the same finish to add to a cohesive design from room to room.

Photos by Kevin Syms

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4. Explain potential LEED credits and environmental credentials of both glass fiber and binder.

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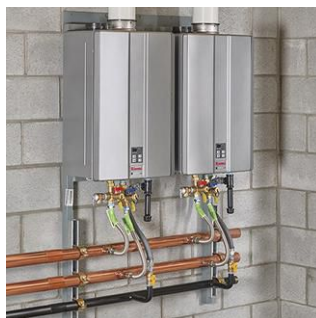
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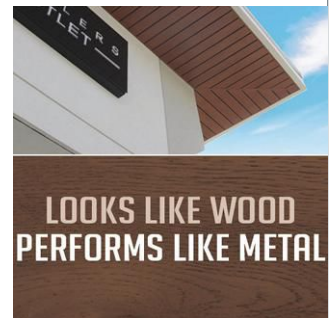
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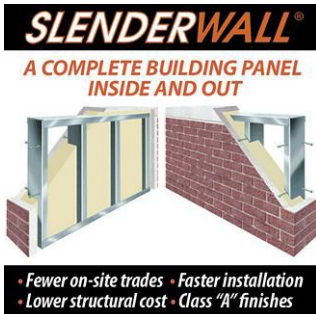
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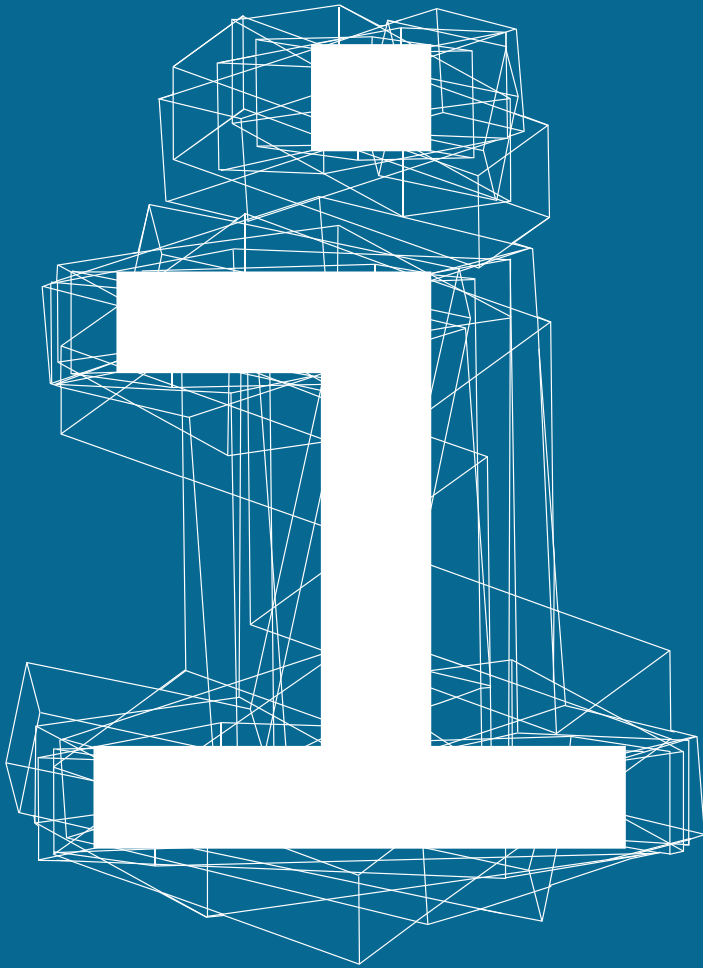
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New and Upcoming Exhibitions

Chicago Architecture Biennial

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 September 16, 2017–January 7, 2018
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London Design Festival

September 16–24, 2017
 Now in its 15th year, the London Design Festival celebrates London as the design capital of the world with hundreds of installations, exhibitions, and events throughout the city. This year’s features include Villa Walala, a soft-textured building-block castle covered in colorful digitally printed patterns in the heart of Broadgate, and *Transmission*, an 82-foot-long fluid sculpture by Ross Lovegrove in the tapestry room of the Victoria & Albert Museum. Visit londondesignfestival.com.

Alex Schweder and Ward Shelley: Your Turn

Ridgefield, Connecticut
 October 1, 2017–April 22, 2018
 For this combined architecture and performance art piece, Alex Schweder and Ward Shelley will build a 24-foot-high living environment, which they will then inhabit, sharing nine basic amenities that, while being used by one, cannot be used by the other. Audience members are invited to engage in conversation with the artists, as well as explore an adjacent gallery, which holds the first survey of Schweder and Shelley’s reverse paintings on Mylar. At the Aldrich Contemporary Art Museum. Visit aldrichart.org.

Ongoing Exhibitions

Frank Lloyd Wright at 150: Unpacking the Archive

New York City
 Through October 1, 2017
 Marking the 150th anniversary of the American architect’s birth, this exhibition at the Museum of Modern Art comprises approximately 450 works made from the 1890s through the 1950s, including architectural drawings, models, building fragments, films,

television broadcasts, prints, furniture, tableware, textiles, paintings, photographs, and scrapbooks, a number of which have rarely or never been publicly exhibited. Visit moma.org.

Ettore Sottsass: Design Radical

New York City
 Through October 8, 2017
 This exhibition brings together a diverse collection of works by Italian architect and designer Ettore Sottsass, including architectural drawings, interiors, furniture, machines, ceramics, glass, jewelry, textiles, painting, and photography. At the Met Breuer. For more information, visit metmuseum.org.

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Zurich
 Through October 21, 2017
 In its fourth presentation of Bardula’s artwork, Galerie la Ligne is hosting a solo exhibition of the Paris-based artist’s latest works, which use LED technology to focus on simple geometric shapes like spheres, circles, and squares, as well as complex ones like the torus. For more information, visit galerie-la-ligne.ch.

Noguchi’s Playscapes

San Francisco
 Through November 26, 2017
 This exhibition will revisit sculptor Isamu Noguchi’s designs for several playgrounds and stand-alone play structures. Through models, sketches, set designs, and archival images, the exhibition will show Noguchi’s visions for new experiences of art, education, and humanity through play. For more information, visit sfmoma.org.

Lectures, Conferences, and Symposia

Facades+AM

Philadelphia
 September 25, 2017
 Kicking off a Facades+ program that will travel to a total of five cities, this Philadelphia edition will bring in nine speakers in three sessions to discuss building enclosures throughout the city. At the National Museum of American Jewish History. Visit am2017.philly.facadesplus.com.

Mundaneum XI 2017: re_THINKING Architecture and Cities in the Americas

El Salvador
 September 25–27, 2017
 A continuation of last July’s X Mundaneum in Costa Rica, this event will serve as a platform to discuss the current state of architecture and cities in the Western hemisphere and explore new visions of the built environment. At the

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National Theater of San Salvador. Visit Mundaneum Architecture Movement's Facebook page.

Competitions

Domus Academy Competition for the Master Programs

Submission deadline: September 8, 2017 & September 15, 2017

Domus Academy offers 12 separate competitions for scholarships covering various amounts of their postgraduate Master programs in the fields of business, fashion, interior design, brand management, merchandising, and beyond. The competitions were developed in collaboration with a bevy of leading brands, including Vogue Talents, the Coca-Cola Company, *Wired*, and IBM. Visit domusacademy.com.

City of Dreams Pavilion 2018

Submission deadline: September 15, 2017

FIGMENT is teaming up with the Emerging New York Architects Committee of AIANY and the Structural Engineers Association of New York for the eighth annual City of Dreams Pavilion competition. Located on Governors Island, this pavilion will serve as a gathering place for arts-education programming, performances, and lectures. For more information, visit newyork.figmentproject.org.

AIANY COTE Awards

Submission deadline: September 30, 2017

The AIA New York Committee on the Environment established the AIANY COTE Awards in 2014 with the goal of redefining how design excellence is evaluated, sharing new thinking and techniques, and inspiring creative thinking about structures. This year's awards will recognize achievement in making results-oriented buildings in the urban context possible. Visit aianycoteawards.org.

FORM Student Innovation Competition

Submission deadline: November 10, 2017

The FORM Student Innovation Competition offers students a chance to design something to sit, lie, lean, or play on using Formica® brand products. The competition is a twist on Formica's 2008 version, FORM: Contemporary Architects at Play, which posed the same challenge to 10 internationally renowned designers and architects including Zaha Hadid and Bernard Tschumi. Visit formica.com.

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

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2018 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 January 2018 issue.

The fee is US\$75 per entry. To enter, visit: architecturalrecord.com/call4entries. E-mail questions to ARCallForEntries@bnpmedia.com. (Please indicate **Record Kitchen & Bath** as the subject of the e-mail.) **Submissions are due October 16, 2017.**





LOCATED WITHIN the Sanlitun Soho—a large mixed-used development in Beijing by Kengo Kuma & Associates—a 2,700-square-foot noodle restaurant riffs on its signature dish through its architecture. Designed by Shanghai-based atelier Lukstudio, the interior was inspired by the form of a noodle rack. Rusted metal frames outline each of three main eating areas; one of them features a double-height steel-and-wood staircase. Here diners can congregate under a large pendant of overlapping steel wires, or “noodles,” which help to define the interior space. Says lead designer Christina Luk, it is “a special place to enjoy some noodle soup.” *Alex Klimoski*



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